

UNCLASSIFIED

**Department of Defense
Fiscal Year (FY) 2014 President's Budget Submission**

April 2013



Army

Justification Book

Research, Development, Test & Evaluation, Army

RDT&E - Volume II, Budget Activity 5 A

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Exhibit R-1

Summary

20-Feb-2013

Summary Recap of Budget Activities		Thousands of Dollars				
		FY2012	FY2013	FY2014	FY2014 OCO	FY2014 Total
Basic research		408,842	444,071	436,725	0	436,725
Applied Research		929,984	874,730	885,924	0	885,924
Advanced technology development		1,067,459	890,722	882,106	0	882,106
Advanced Component Development and Prototypes		513,368	629,981	636,392	26,625	663,017
System Development and Demonstration		3,135,367	3,286,629	2,857,026	0	2,857,026
Management support		1,341,545	1,153,980	1,159,610	0	1,159,610
Operational system development		1,303,974	1,664,534	1,126,602	0	1,126,602
Total	RDT&E, Army	8,700,539	8,944,647	7,984,385	26,625	8,011,010

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Line No	Program Element Number	Act	Item	Thousands of Dollars				
				FY2012	FY2013	FY2014	FY2014 OCO	FY2014 Total
Basic research								
1	0601101A	01	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	20,395	20,860	21,803		21,803
2	0601102A	01	DEFENSE RESEARCH SCIENCES	207,983	219,180	221,901		221,901
3	0601103A	01	UNIVERSITY RESEARCH INITIATIVES	78,380	80,986	79,359		79,359
4	0601104A	01	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	102,084	123,045	113,662		113,662
Total: Basic research				408,842	444,071	436,725	0	436,725
Applied Research								
5	0602105A	02	MATERIALS TECHNOLOGY	37,707	29,041	26,585		26,585
6	0602120A	02	SENSORS AND ELECTRONIC SURVIVABILITY	42,189	45,260	43,170		43,170
7	0602122A	02	TRACTOR HIP	14,207	22,439	36,293		36,293
8	0602211A	02	AVIATION TECHNOLOGY	43,430	51,607	55,615		55,615
9	0602270A	02	ELECTRONIC WARFARE TECHNOLOGY	15,667	15,068	17,585		17,585
10	0602303A	02	MISSILE TECHNOLOGY	65,591	49,383	51,528		51,528
11	0602307A	02	ADVANCED WEAPONS TECHNOLOGY	19,392	25,999	26,162		26,162
12	0602308A	02	ADVANCED CONCEPTS AND SIMULATION	20,356	23,507	24,063		24,063
13	0602601A	02	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	62,339	69,062	64,589		64,589
14	0602618A	02	BALLISTICS TECHNOLOGY	60,507	60,823	68,300		68,300
15	0602622A	02	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	4,753	4,465	4,490		4,490
16	0602623A	02	JOINT SERVICE SMALL ARMS PROGRAM	8,010	7,169	7,818		7,818
17	0602624A	02	WEAPONS AND MUNITIONS TECHNOLOGY	53,883	35,218	37,798		37,798
18	0602705A	02	ELECTRONICS AND ELECTRONIC DEVICES	74,518	60,300	59,021		59,021
19	0602709A	02	NIGHT VISION TECHNOLOGY	54,002	53,244	43,426		43,426
20	0602712A	02	COUNTERMINE SYSTEMS	32,226	18,850	20,574		20,574
21	0602716A	02	HUMAN FACTORS ENGINEERING TECHNOLOGY	21,540	19,872	21,339		21,339
22	0602720A	02	ENVIRONMENTAL QUALITY TECHNOLOGY	20,389	20,095	20,316		20,316
23	0602782A	02	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	25,703	28,852	34,209		34,209
24	0602783A	02	COMPUTER AND SOFTWARE TECHNOLOGY	8,433	9,830	10,439		10,439
25	0602784A	02	MILITARY ENGINEERING TECHNOLOGY	75,465	70,693	70,064		70,064

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26	0602785A	02	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	18,623	17,781	17,654		17,654
27	0602786A	02	WARFIGHTER TECHNOLOGY	46,864	28,281	31,546		31,546
28	0602787A	02	MEDICAL TECHNOLOGY	104,190	107,891	93,340		93,340
Total: Applied Research				929,984	874,730	885,924	0	885,924
Advanced technology development								
29	0603001A	03	WARFIGHTER ADVANCED TECHNOLOGY	55,679	39,359	56,056		56,056
30	0603002A	03	MEDICAL ADVANCED TECHNOLOGY	101,655	69,580	62,032		62,032
31	0603003A	03	AVIATION ADVANCED TECHNOLOGY	60,333	64,215	81,080		81,080
32	0603004A	03	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	75,607	67,613	63,919		63,919
33	0603005A	03	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY	142,833	104,359	97,043		97,043
34	0603006A	03	SPACE APPLICATION ADVANCED TECHNOLOGY	4,158	4,157	5,866		5,866
35	0603007A	03	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY	10,063	9,856	7,800		7,800
36	0603008A	03	ELECTRONIC WARFARE ADVANCED TECHNOLOGY	67,673	50,661	40,416		40,416
37	0603009A	03	TRACTOR HIKE	8,142	9,126	9,166		9,166
38	0603015A	03	NEXT GENERATION TRAINING & SIMULATION SYSTEMS	14,970	17,257	13,627		13,627
39	0603020A	03	TRACTOR ROSE	12,577	9,925	10,667		10,667
40	0603105A	03	MILITARY HIV RESEARCH	22,552	6,984			
41	0603125A	03	COMBATING TERRORISM - TECHNOLOGY DEVELOPMENT	21,939	9,716	15,054		15,054
42	0603130A	03	TRACTOR NAIL	4,271	3,487	3,194		3,194
43	0603131A	03	TRACTOR EGGS	2,257	2,323	2,367		2,367
44	0603270A	03	ELECTRONIC WARFARE TECHNOLOGY	23,046	21,683	25,348		25,348
45	0603313A	03	MISSILE AND ROCKET ADVANCED TECHNOLOGY	87,749	71,111	64,009		64,009
46	0603322A	03	TRACTOR CAGE	10,299	10,902	11,083		11,083
47	0603461A	03	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM	176,533	180,582	180,662		180,662
48	0603606A	03	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	30,687	27,204	22,806		22,806
49	0603607A	03	JOINT SERVICE SMALL ARMS PROGRAM	7,473	6,095	5,030		5,030
50	0603710A	03	NIGHT VISION ADVANCED TECHNOLOGY	41,283	37,217	36,407		36,407
51	0603728A	03	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	15,247	13,626	11,745		11,745
52	0603734A	03	MILITARY ENGINEERING ADVANCED TECHNOLOGY	40,496	28,458	23,717		23,717

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53	0603772A	03	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECHNOLOGY	29,937	25,226	33,012		33,012
Total: Advanced technology development				1,067,459	890,722	882,106	0	882,106
Advanced Component Development and Prototypes								
54	0603305A	04	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	23,463	14,505	15,301		15,301
55	0603308A	04	ARMY SPACE SYSTEMS INTEGRATION	9,557	9,876	13,592		13,592
56	0603619A	04	LANDMINE WARFARE AND BARRIER - ADV DEV	16,399	5,054	10,625		10,625
57	0603627A	04	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV	4,357	2,725			
58	0603639A	04	TANK AND MEDIUM CALIBER AMMUNITION	40,201	30,560	30,612		30,612
59	0603653A	04	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	62,343	14,347	49,989		49,989
60	0603747A	04	SOLDIER SUPPORT AND SURVIVABILITY	13,720	29,933	6,703	26,625	33,328
61	0603766A	04	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM - ADV DEV	5,757	8,660	6,894		6,894
62	0603774A	04	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT		10,715	9,066		9,066
63	0603779A	04	ENVIRONMENTAL QUALITY TECHNOLOGY - DEM/VAL	4,788	4,631	2,633		2,633
64	0603782A	04	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	177,122	278,018	272,384		272,384
65	0603790A	04	NATO RESEARCH AND DEVELOPMENT	4,612	4,961	3,874		3,874
66	0603801A	04	AVIATION - ADV DEV	6,879	8,602	5,018		5,018
67	0603804A	04	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	12,107	14,605	11,556		11,556
68	0603805A	04	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION AND ANALYSIS	5,090	5,054			
69	0603807A	04	MEDICAL SYSTEMS - ADV DEV	34,809	24,384	15,603		15,603
70	0603827A	04	SOLDIER SYSTEMS - ADVANCED DEVELOPMENT	23,516	32,050	14,159		14,159
71	0603850A	04	INTEGRATED BROADCAST SERVICE	1,494	96	79		79
72	0604115A	04	TECHNOLOGY MATURATION INITIATIVES	11,839	24,868	55,605		55,605
73	0604131A	04	TRACTOR JUTE		59			
74	0604319A	04	INDIRECT FIRE PROTECTION CAPABILITY INCREMENT 2-INTERCEPT (IFPC2)		76,039	79,232		79,232
75	0604785A	04	INTEGRATED BASE DEFENSE (BUDGET ACTIVITY 4)	3,926	4,043	4,476		4,476
76	0305205A	04	ENDURANCE UAVS	51,389	26,196	28,991		28,991
Total: Advanced Component Development and Prototypes				513,368	629,981	636,392	26,625	663,017

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System Development and Demonstration								
77	0604201A	05	AIRCRAFT AVIONICS	115,890	78,538	76,588		76,588
78	0604220A	05	ARMED, DEPLOYABLE HELOS	80,323	90,494	73,309		73,309
79	0604270A	05	ELECTRONIC WARFARE DEVELOPMENT	33,164	181,347	154,621		154,621
80	0604280A	05	JOINT TACTICAL RADIO			31,826		31,826
81	0604290A	05	MID-TIER NETWORKING VEHICULAR RADION (MNVR)	47,000	12,636	23,341		23,341
82	0604321A	05	ALL SOURCE ANALYSIS SYSTEM	7,400	5,694	4,839		4,839
83	0604328A	05	TRACTOR CAGE	23,535	32,095	23,841		23,841
84	0604601A	05	INFANTRY SUPPORT WEAPONS	81,081	96,478	79,855		79,855
85	0604604A	05	MEDIUM TACTICAL VEHICLES	3,835	3,006	2,140		2,140
86	0604611A	05	JAVELIN	9,655	5,040	5,002		5,002
87	0604622A	05	FAMILY OF HEAVY TACTICAL VEHICLES	5,239	3,077	21,321		21,321
88	0604633A	05	AIR TRAFFIC CONTROL	22,218	9,769	514		514
89	0604641A	05	TACTICAL UNMANNED GROUND VEHICLE (TUGV)		13,141			
90	0604642A	05	LIGHT TACTICAL WHEELED VEHICLES	68,442				
91	0604661A	05	FCS SYSTEMS OF SYSTEMS ENGR & PROGRAM MGMT	257,513				
92	0604663A	05	FCS UNMANNED GROUND VEHICLES	34,845				
93	0604710A	05	NIGHT VISION SYSTEMS - ENG DEV	55,412	32,621	43,405		43,405
94	0604713A	05	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	2,008	2,132	1,939		1,939
95	0604715A	05	NON-SYSTEM TRAINING DEVICES - ENG DEV	29,206	44,787	18,980		18,980
96	0604716A	05	TERRAIN INFORMATION - ENG DEV	1,593	1,008			
97	0604741A	05	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE - ENG DEV	57,050	73,333	18,294		18,294
98	0604742A	05	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	27,530	28,937	17,013		17,013
99	0604746A	05	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	13,932	10,815	6,701		6,701
100	0604760A	05	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENG DEV	15,357	13,926	14,575		14,575
101	0604780A	05	COMBINED ARMS TACTICAL TRAINER (CATT) CORE	21,541	17,797	27,634		27,634
102	0604798A	05	BRIGADE ANALYSIS, INTEGRATION AND EVALUATION		214,270	193,748		193,748
103	0604802A	05	WEAPONS AND MUNITIONS - ENG DEV	13,384	14,581	15,721		15,721
104	0604804A	05	LOGISTICS AND ENGINEER EQUIPMENT - ENG DEV	173,902	43,706	41,703		41,703
105	0604805A	05	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ENG DEV	79,188	20,776	7,379		7,379

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106	0604807A	05	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT - ENG DEV	26,316	43,395	39,468		39,468
107	0604808A	05	LANDMINE WARFARE/BARRIER - ENG DEV	73,955	104,983	92,285		92,285
108	0604814A	05	ARTILLERY MUNITIONS - EMD	45,821	4,346	8,209		8,209
109	0604818A	05	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	91,490	77,223	22,958		22,958
110	0604820A	05	RADAR DEVELOPMENT	3,093	3,486	1,549		1,549
111	0604822A	05	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	787	9,963	17,342		17,342
112	0604823A	05	FIREFINDER	12,032	20,517	47,221		47,221
113	0604827A	05	SOLDIER SYSTEMS - WARRIOR DEM/VAL	41,680	51,851	48,477		48,477
114	0604854A	05	ARTILLERY SYSTEMS - EMD	116,293	167,797	80,613		80,613
115	0604869A	05	PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	377,610	400,861			
116	0604870A	05	NUCLEAR ARMS CONTROL MONITORING SENSOR NETWORK	7,160	7,922			
117	0605013A	05	INFORMATION TECHNOLOGY DEVELOPMENT	35,714	51,463	68,814		68,814
118	0605018A	05	INTEGRATED PERSONNEL AND PAY SYSTEM-ARMY (IPPS-A)	66,612	158,646	137,290		137,290
119	0605028A	05	ARMORED MULTI-PURPOSE VEHICLE (AMPV)			116,298		116,298
120	0605030A	05	JOINT TACTICAL NETWORK CENTER (JTNC)			68,148		68,148
121	0605380A	05	AMF JOINT TACTICAL RADIO SYSTEM (JTRS)			33,219		33,219
122	0605450A	05	JOINT AIR-TO-GROUND MISSILE (JAGM)	123,100	10,000	15,127		15,127
123	0605455A	05	SLAMRAAM	1,186				
124	0605456A	05	PAC-3/MSE MISSILE	86,139	69,029	68,843		68,843
125	0605457A	05	ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD)	262,032	277,374	364,649		364,649
126	0605625A	05	MANNED GROUND VEHICLE	434,977	639,874	592,201		592,201
127	0605626A	05	AERIAL COMMON SENSOR	31,415	47,426	10,382		10,382
128	0605766A	05	NATIONAL CAPABILITIES INTEGRATION (MIP)			21,143		21,143
129	0605812A	05	JOINT LIGHT TACTICAL VEHICLE (JLTV) ENGINEERING AND MANUFACTURING D		72,295	84,230		84,230
130	0303032A	05	TROJAN - RH12	3,914	4,232	3,465		3,465
131	0304270A	05	ELECTRONIC WARFARE DEVELOPMENT	13,798	13,942	10,806		10,806
Total: System Development and Demonstration				3,135,367	3,286,629	2,857,026	0	2,857,026
Management support								
132	0604256A	06	THREAT SIMULATOR DEVELOPMENT	25,838	18,090	16,934		16,934

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133	0604258A	06	TARGET SYSTEMS DEVELOPMENT	10,973	14,034	13,488		13,488
134	0604759A	06	MAJOR T&E INVESTMENT	47,972	37,394	46,672		46,672
135	0605103A	06	RAND ARROYO CENTER	19,730	21,026	11,919		11,919
136	0605301A	06	ARMY KWAJALEIN ATOLL	141,365	176,816	193,658		193,658
137	0605326A	06	CONCEPTS EXPERIMENTATION PROGRAM	27,923	27,902	37,158		37,158
138	0605502A	06	SMALL BUSINESS INNOVATIVE RESEARCH	208,324				
139	0605601A	06	ARMY TEST RANGES AND FACILITIES	366,327	369,900	340,659		340,659
140	0605602A	06	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	68,968	69,183	66,061		66,061
141	0605604A	06	SURVIVABILITY/LETHALITY ANALYSIS	42,088	44,753	43,280		43,280
142	0605605A	06	DOD HIGH ENERGY LASER TEST FACILITY	18				
143	0605606A	06	AIRCRAFT CERTIFICATION	5,555	5,762	6,025		6,025
144	0605702A	06	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	7,062	7,402	7,349		7,349
145	0605706A	06	MATERIEL SYSTEMS ANALYSIS	19,498	19,954	19,809		19,809
146	0605709A	06	EXPLOITATION OF FOREIGN ITEMS	5,435	5,535	5,941		5,941
147	0605712A	06	SUPPORT OF OPERATIONAL TESTING	68,311	67,789	55,504		55,504
148	0605716A	06	ARMY EVALUATION CENTER	62,845	62,765	65,274		65,274
149	0605718A	06	ARMY MODELING & SIM X-CMD COLLABORATION & INTEG	3,312	1,545	1,283		1,283
150	0605801A	06	PROGRAMWIDE ACTIVITIES	82,015	83,422	82,035		82,035
151	0605803A	06	TECHNICAL INFORMATION ACTIVITIES	52,085	50,820	33,853		33,853
152	0605805A	06	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY	53,530	46,763	53,340		53,340
153	0605857A	06	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	4,801	4,601	5,193		5,193
154	0605898A	06	MANAGEMENT HQ - R&D	17,480	18,524	54,175		54,175
155	0909999A	06	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	90				
Total: Management support				1,341,545	1,153,980	1,159,610	0	1,159,610
Operational system development								
156	0603778A	07	MLRS PRODUCT IMPROVEMENT PROGRAM	64,609	143,005	110,576		110,576
157	0607141A	07	LOGISTICS AUTOMATION			3,717		3,717
158	0607665A	07	BIOMETRICS ENTERPRISE	44,155				
159	0607865A	07	PATRIOT PRODUCT IMPROVEMENT		109,978	70,053		70,053

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160	0102419A	07	AEROSTAT JOINT PROJECT OFFICE	317,382	190,422	98,450		98,450
161	0203726A	07	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	28,649	32,556	30,940		30,940
162	0203735A	07	COMBAT VEHICLE IMPROVEMENT PROGRAMS	35,046	253,959	177,532		177,532
163	0203740A	07	MANEUVER CONTROL SYSTEM	39,282	68,325	36,495		36,495
164	0203744A	07	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS	144,904	280,247	257,187		257,187
165	0203752A	07	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	800	898	315		315
166	0203758A	07	DIGITIZATION	7,771	35,180	6,186		6,186
167	0203801A	07	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	52,811	20,733	1,578		1,578
168	0203802A	07	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS			62,100		62,100
169	0203808A	07	TRACTOR CARD	42,487	63,243	18,778		18,778
170	0208053A	07	JOINT TACTICAL GROUND SYSTEM	27,586	31,738	7,108		7,108
171	0208058A	07	JOINT HIGH SPEED VESSEL (JHSV)		35			
172	0301359A	07	SPECIAL ARMY PROGRAM					
173	0303028A	07	SECURITY AND INTELLIGENCE ACTIVITIES	2,763	7,591	7,600		7,600
174	0303140A	07	INFORMATION SYSTEMS SECURITY PROGRAM	15,282	15,961	9,357		9,357
175	0303141A	07	GLOBAL COMBAT SUPPORT SYSTEM	155,813	120,927	41,225		41,225
176	0303142A	07	SATCOM GROUND ENVIRONMENT (SPACE)	11,765	15,756	18,197		18,197
177	0303150A	07	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	22,658	14,443	14,215		14,215
178	0305204A	07	TACTICAL UNMANNED AERIAL VEHICLES	26,508	31,303	33,533		33,533
179	0305208A	07	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	31,401	40,876	27,622		27,622
180	0305219A	07	MQ-1 SKY WARRIOR A UAV	121,846	74,618	10,901		10,901
181	0305232A	07	RQ-11 UAV	1,935	4,039	2,321		2,321
182	0305233A	07	RQ-7 UAV	31,896	31,158	12,031		12,031
183	0305235A	07	MQ-18 UAV	4,000	2,387			
184	0307665A	07	BIOMETRICS ENABLED INTELLIGENCE	15,018	15,248	12,449		12,449
185	0708045A	07	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	57,607	59,908	56,136		56,136
Total: Operational system development				1,303,974	1,664,534	1,126,602	0	1,126,602
Total: RDT&E, Army				8,700,539	8,944,647	7,984,385	26,625	8,011,010

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Medical Materiel/Medical Biological Defense Equipment - Eng Dev	0604807A	106	05.....	622
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National Integration To Tactical Systems (MIP)	0605766A	128	05.....	971
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	115.890	78.538	76.588	-	76.588	97.762	20.371	6.094	92.349	Continuing	Continuing
C97: <i>ACFT Avionics</i>	-	115.890	17.294	25.815	-	25.815	31.058	7.346	1.468	30.443	Continuing	Continuing
VU3: <i>Networking And Mission Planning</i>	-	0.000	61.244	50.773	-	50.773	66.704	13.025	4.626	61.906	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

The FY 2014 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 Program Element 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 Joint Tactical Radio System (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 certified radios with Link 16 and/or other advanced networking waveforms into the AH-64E and Unmanned Aircraft Systems (UAS). Funding in FY 2014 will complete the Apache Block III (AB3) Link 16 non-developmental item radio integration through AB3 Lot 4 Follow-On Operational Test and Evaluation. In addition, FY14 funding initiates integration activities to install and qualify a JTRS certified networking radio on the Grey Eagle and AB3 Lot 6 platforms and also supports continued development of common radio control software for use on multiple platform integrations.

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 transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker 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-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.

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>
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The Doppler Global Positioning System (GPS) Navigation System (DGNS) 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 map display, and prepares Engineering Change Proposals to the existing DGNS ASN-128D Line Replaceable Units as a result of those trade studies. The effort also derives DGNS compliance matrices for current and planned Global Air Traffic Management (GATM) capabilities for the upcoming decade.

The Future Airborne Capability Environment (FACE), previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. 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.

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 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

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	119.573	78.538	119.844	-	119.844
Current President's Budget	115.890	78.538	76.588	-	76.588
Total Adjustments	-3.683	0.000	-43.256	-	-43.256
• Congressional General Reductions	-0.075	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.608	-			
• Adjustments to Budget Years	-	-	-43.256	-	-43.256

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT Avionics</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
C97: <i>ACFT Avionics</i>	-	115.890	17.294	25.815	-	25.815	31.058	7.346	1.468	30.443	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Several systems/functions shift from Project C97 to Project VU3 in FY 2013. They include the Improved Data Modem (IDM), the Aviation Mission Planning System (AMPS), Future Airborne Capability Environment (FACE), Aviation Data Exploitation Capability (ADEC), the Aircraft Notebook (ACN) and the Degraded Visual Environment (DVE) system.

A. Mission Description and Budget Item Justification

The FY 2014 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.

The Joint Tactical Radio System (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 certified radios with Link 16 and/or other advanced networking waveforms into the AH-64E and Unmanned Aircraft Systems (UAS). Funding in FY 2014 will complete the Apache Block III (AB3) Link 16 non-developmental item radio integration through AB3 Lot 4 Follow-On Operational Test and Evaluation. In addition, FY14 funding initiates integration activities to install and qualify a JTRS certified networking radio on the Grey Eagle and AB3 Lot 6 platforms and also supports continued development of common radio control software for use on multiple platform integrations.

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 transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker 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-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.

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

The DGNS 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 DGNS compliance matrices for current and planned GATM capabilities for the upcoming decade.

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

The Future Airborne Capability Environment (FACE), previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. 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.

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 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 software tools onto one hardware platform.

The Degraded Visual Environment (DVE) system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Title: Joint Tactical Radio System (JTRS) integration and qualification for Apache AH-64E and Unmanned Aircraft Systems (UAS) platforms.</p> <p 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-64E and UAS platforms for both production cut-in and retrofit activities.</p> <p>FY 2012 Accomplishments: Continued Link 16 integration activities for AH-64E to support ground electromagnetic environmental effect and integration tests. Initiated Apache early software integration for implementation of Networking Waveforms. Continued reusable radio control software development with completion of system requirements identification and initiation of detailed design. Selected and began qualification of JTRS antennas for use on all platforms. Continued to use antenna co-site effort to determine platform JTRS antenna locations and associated co-site analysis. Developed hardware and software modifications for integration of a JTRS compliant radio onto the UAS Shadow. Conducted Shadow JTRS flight test.</p> <p>FY 2013 Plans: Continue Link 16 integration activities for AH-64E to support ground and flight tests. Continue JTRS integration onto the Shadow platform and conduct final JTRS engineering change proposal qualification activities for UAS Shadow. Complete 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.</p> <p>FY 2014 Plans: Initiate JTRS integration activities on AH-64E and the UAS Grey Eagle for implementation of a networking radio with Soldier Radio Waveform (SRW) and/or other advanced networking waveform. Complete Link 16 integration activities for AH-64E for implementation onto Lot 4 aircraft.</p>		14.646 0	17.294 0	25.815
<p>Title: Joint Precision Approach and Landing System (JPALS)</p> <p align="right">Articles:</p> <p>Description: The 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 2012 Accomplishments: Completed the AIG effort related to the AH-64D platform, Block III. Completed non-recurring engineering efforts for M-Code development. Completed Small Antenna System anti-jamming antenna co-site analysis and M-Code recurring prototyping.</p>		8.297 0	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012
				FY 2013
				FY 2014
Completed the JCATD effort, and continued to support JPALS Increment 1 and 2 development and Program Management coordination meetings, Technical Interchange Meetings, and working groups.				
Title: Improved Data Modem (IDM)				
Articles:				25.306 0
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 transceivers. Funds are required to continue development of an Open Systems Architecture (OSA) and Joint Battle Command -Platform (Aviation) (JBC-P(A)) solution compatible with the AH-64D, CH-47F, HH/UH-60M, OH-58D. This effort provides the foundation to develop and qualify a new hardware architecture to host IDM and Army Common Operating Environment applications to ensure interoperability on the future digital battlefield.				
FY 2012 Accomplishments: Conducted and evaluated IDM OSA hardware and software against the qualification plans. Conducted test activities and maintained ASIF Test lab. Achieved Airworthiness rating and authorization to operate for the IDM OSA. Delivered engineering releases of IDM OSA hardware and software to platforms to aid integration efforts. Continued development, integration, and testing of JBC-P(A).				
Title: Doppler Global Positioning System (GPS) Navigation System (DGNS) Upgrade				
Articles:				8.157 0
Description: The DGNS 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 map display, and prepares engineering change proposals (ECP) to the existing DGNS Line Replaceable Units as a result of those trade studies. The effort also derives DGNS compliance matrices for current and planned GATM capabilities for the upcoming decade.				
FY 2012 Accomplishments: Completed the DGNS Upgrade ECP effort.				
Title: Aviation Mission Planning System (AMPS)				
Articles:				0.900 0
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 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,				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p>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 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 2012 Accomplishments: Completed design, development, integration, and test of additional software components needed for the XPLAN application. Completed the updates required to modify platform AWEs allowing them to function in the XPLAN architecture. Completed development platform AWEs to support new aircraft to include the Block III programs for UH-60M, CH-47, and OH-58D CDS4.</p>				
<p>Title: Future Airborne Capability Environment (FACE)</p> <p>Description: FACE, previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. 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 Accomplishments: Began integration of the selected middleware into the Apache Block III to support the Army Common Operating Environment convergence via FACE.</p>		10.076 0	0.000	0.000
<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 standardize data and information formats 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.</p> <p>FY 2012 Accomplishments:</p>		9.764 0	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Continued design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Continued the advanced component development and prototyping of the baseline MFOQA applications, Aviation Maintenance Software Suite, and CAFRS integration.				
<p>Title: Aircraft Notebook (ACN)</p> <p align="right">Articles:</p> <p>Description: The 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.</p> <p>FY 2012 Accomplishments: Continued software design, development, integration, and testing of the ACN applications.</p>		5.444 0	0.000	0.000
<p>Title: Degraded Visual Environment (DVE)</p> <p align="right">Articles:</p> <p>Description: The DVE system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft.</p> <p>FY 2012 Accomplishments: Continued the development of the DVE hardware and software.</p>		33.300 0	0.000	0.000
Accomplishments/Planned Programs Subtotals		115.890	17.294	25.815

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT Avionics</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Network and Mission Plan: <i>Network and Mission Plan</i>	118.432	190.789	152.569		152.569	182.009	186.239	185.675	172.847	Continuing	Continuing
• COMMS, NAV Surveillance: <i>COMMS, NAV Surveillance</i>	117.855	133.191	126.949		126.949	166.082	155.377	96.003	110.888	Continuing	Continuing

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM Spt (ACN)	Various	Various:Various	0.528	0.441	Dec 2011	-		-		-		-	0.000	0.969	0.000
PM Spt (IDM)	Various	Various:Various	0.174	0.175	Dec 2011	-		-		-		-	0.000	0.349	0.000
PM Spt (ADEC)	Various	Various:Various	1.500	1.295	Dec 2011	-		-		-		-	0.000	2.795	0.000
PM Spt (DVE)	Various	Various:Various	0.872	0.927	Dec 2011	-		-		-		-	0.000	1.799	0.000
Subtotal			3.074	2.838		0.000		0.000		0.000		0.000	0.000	5.912	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JTRS Common Radio Control Software Development	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	1.378	1.295	Mar 2012	2.725	Mar 2013	2.886	Dec 2013	-		2.886	Continuing	Continuing	Continuing
JTRS Antenna Development and Co-Site	C/CPFF	AMRDEC, Prototype Integration Facility:Redstone Arsenal, AL	1.108	0.778	Feb 2012	1.772	Feb 2013	0.650	Mar 2014	-		0.650	0.000	4.308	0.000
JBC-P(A) development and testing (IDM)	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	6.000	5.000	Feb 2012	-		-		-		-	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	Feb 2012	-		-		-		-	0.000	3.903	0.000
JTRS Networking Radio Integration and Qualification onto Shadow	SS/CPFF	AAI Corporation:Huntvalley, MD	3.312	1.350	Aug 2012	-		-		-		-	0.000	4.662	0.000
JTRS Networking Radio Integration and Qualification onto Grey Eagle	SS/CPFF	General Atomics:San Diego, CA	0.000	-		-		3.500	Dec 2013	-		3.500	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JTRS Networking Radio Integration and Qualification onto AH-64E	SS/CPAF	Boeing:Mesa, AZ	0.000	-		-		7.219	Dec 2013	-		7.219	Continuing	Continuing	Continuing
Air Integration Guides (AIG) (JPALS)	Various	Various:Various	1.700	0.231	Feb 2012	-		-		-		-	0.000	1.931	0.000
JPALS Common Avionics Technology Development (JCATD)	C/CPFF	Honeywell:Clearwater, FL	7.607	5.792	Dec 2011	-		-		-		-	0.000	13.399	0.000
Middleware integration via FACE	Various	Various:Various	0.000	10.076	Feb 2012	-		-		-		-	0.000	10.076	0.000
Design, develop, and integrate ADEC software and hardware	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	6.657	6.773	Feb 2012	-		-		-		-	0.000	13.430	0.000
DGNS Upgrade	C/CPFF	BAE Systems:Nashua, NH	2.934	8.157	Dec 2011	-		-		-		-	0.000	11.091	0.000
Develop and qualify OSA hardware to host IDM	Various	Various:Various	1.082	17.131	Feb 2012	-		-		-		-	0.000	18.213	0.000
Develop and qualify the DVE hardware and software	Various	Various:Various	4.169	32.373	Feb 2012	-		-		-		-	0.000	36.542	0.000
Design, develop, and integrate ACN software and hardware	Various	AMRDEC Software Engineering Directorate:Redstone Arsenal, AL	4.381	3.400	Feb 2012	-		-		-		-	0.000	7.781	0.000
JTRS Engineering Design Model (EDM) technical support	C/CPIF	Lockheed Martin:San Diego, CA	0.000	1.175	Feb 2012	0.500	Feb 2012	-		-		-	0.000	1.675	0.000
JTRS Link-16 Integration onto AH-64E	SS/CPFF	Boeing:Mesa, AZ	15.135	10.048	Dec 2011	12.297	Dec 2012	9.751	Dec 2013	-		9.751	0.000	47.231	0.000
Engineering Change Proposals (JTRS)	TBD	Various:Various	0.000	-		-		0.659	Mar 2014	-		0.659	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			58.466	104.479		17.294		24.665		0.000		24.665			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering, Logistics, and Technical Support (ADEC)	Various	Various:Various	1.314	0.761	Feb 2012	-		-		-		-	0.000	2.075	0.000
System Engineering, Logistics, and Technical Support (JPALS)	Various	Various:Various	1.986	2.274	Feb 2012	-		-		-		-	0.000	4.260	0.000
Data (ADEC)	Various	Various:Various	0.487	0.570	Feb 2012	-		-		-		-	0.000	1.057	0.000
System Engineering, Logistics, and Technical Support (ACN)	Various	Various:Various	1.016	0.925	Feb 2012	-		-		-		-	0.000	1.941	0.000
Data (ACN)	Various	Various:Various	0.114	0.201	May 2012	-		-		-		-	0.000	0.315	0.000
System Engineering, Technical Support (JTRS)	C/T&M	TBD:TBD	0.000	-		-		0.750	Feb 2014	-		0.750	Continuing	Continuing	Continuing
Subtotal			4.917	4.731		0.000		0.750		0.000		0.750			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation (JTRS)	TBD	Various:Various	0.000	-		-		0.400	Feb 2014	-		0.400	Continuing	Continuing	Continuing
Test and Evaluation (ACN)	Various	Various:Various	0.569	0.477	Feb 2012	-		-		-		-	0.000	1.046	0.000
ASIF Test Lab (IDM)	Various	AMCOM:Redstone Arsenal, AL	3.000	3.000	Feb 2012	-		-		-		-	0.000	6.000	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT Avionics</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
Test and Evaluation (ADEC)	Various	Various:Various	0.182	0.365	Feb 2012	-		-		-		-	0.000	0.547	0.000	
Subtotal			3.751	3.842		0.000		0.400		0.000		0.400				
Project Cost Totals			70.208	115.890		17.294		25.815		0.000		25.815				

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT C97: <i>ACFT Avionics</i>
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FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
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

JTRS AH-64E Networking Radio Integration and Qualification	[REDACTED]
JTRS Grey Eagle Integration and Qualification	[REDACTED]
Middleware Integration via FACE	[REDACTED]

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 AH-64E Networking Radio Integration and Qualification	1	2014	4	2016
JTRS Grey Eagle Integration and Qualification	1	2014	4	2016
Middleware Integration via FACE	2	2012	4	2012

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VU3: <i>Networking And Mission Planning</i>	-	0.000	61.244	50.773	-	50.773	66.704	13.025	4.626	61.906	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Several systems/functions shift from Project C97 to Project VU3 in FY 2013. They include the Improved Data Modem (IDM), the Aviation Mission Planning System (AMPS), Future Airborne Capability Environment (FACE), Aviation Data Exploitation Capability (ADEC), the Aircraft Notebook (ACN), and the Degraded Visual Environment (DVE) system.

A. Mission Description and Budget Item Justification

The FY 2014 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.

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 transmit/receive terminal, the IDM provides radio connectivity to the ARC-201D/231, ARC-186, ARC-164, and the Blue Force Tracker 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 Future Airborne Capability Environment (FACE), previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. 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.

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 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
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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 software tools onto one hardware platform.

The Degraded Visual Environment (DVE) system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotocraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft.

The Aviation Logistics Enterprise - Platform (ALE-P) will replace the Unit Level Logistics System-Aviation (Enhanced) (ULLS-A[E]), which has transitioned into sustainment, 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 system of software and hardware that forms a Logistics Management and Decision Support System (DSS). ALE-P will interface with the ACN and the ADEC as an integrated Family of Systems.

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

	FY 2012	FY 2013	FY 2014
<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 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>	0.000	2.072 0	0.000
<p>Title: Future Airborne Capability Environment (FACE)</p> <p align="right">Articles:</p>	0.000	5.200 0	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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, Article Quantities in Each)				
Description: FACE, previously referred to as Apache Block III, is a set of standards jointly developed by government and industry consortium members; conformance to this standard is Army Aviation's conduit to compliance with the Common Operating Environment (COE) directive. The mechanism for certification of FACE conformance is the FACE Ecosystem and the laboratory test environment, which is being developed, implemented, and updated as part of this effort. This will be accomplished through the integration of the selected middleware into Army Aviation Platforms. 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 2012	FY 2013	FY 2014
FY 2013 Plans: Continue integration of the selected middleware into the Army Aviation Platforms to support the Army Common Operating Environment convergence via FACE.				
Title: Aviation Data Exploitation Capability (ADEC) Articles:		0.000	9.200 0	9.534
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 standardize data and information formats 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 of Phase I applications.				
FY 2014 Plans: Continue design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Start the advanced component development of Phase II applications and conduct OT&E.				
Title: Degraded Visual Environment (DVE) Articles:		0.000	43.500 0	29.558
Description: The DVE system, previously referred to as the Helicopter Terrain Avoidance and Warning System (HTAWS), is required to reduce personnel and rotocraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrews visibility due to atmospheric obscurants. The DVE system will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
and hazards. The DVE System will consist of integrated rotorcraft pilotage augmentation systems; sensor(s); software; software related hardware; and pilot to system interfaces and cueing devices. The DVE system will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. The DVE system will be integrated on CH-47F, AH-64D, OH-58D/F, and HH/UH-60 L/M rotorcraft.				
FY 2013 Plans: Continue development of the DVE hardware and software.				
FY 2014 Plans: Conduct technical design and development of DVE system.				
Title: Aviation Logistics Enterprise-Platform (ALE-P)		0.000	1.272 0	8.227
Description: ALE-P will replace the Unit Level Logistics System-Aviation (Enhanced) (ULLS-A[E]) which has transitioned into sustainment 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 Logistics Management and Decision Support System (DSS). ALE-P will interface with the ACN and the ADEC as an integrated Family of Systems. There is no installation of ALE-P because it consists of loading software on a server which is done by training/fielding teams.	Articles:			
FY 2013 Plans: Begin design, development, testing, and integration of ALE-P hardware and software and begin OT&E activities.				
FY 2014 Plans: Continue development, test, and integration of ALE-P hardware and software and OT&E activities.				
Title: Aircraft Notebook (ACN)		0.000	0.000	3.454
Description: The 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.				
FY 2014 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continue design, development, integration, and testing of the hardware and software needed to realize the ACN system. Continue the advanced component development of Phase III applications, the development of platform specific software, ADEC and ALE-P integration and Initial Operational Test and Evaluation.			
Accomplishments/Planned Programs Subtotals	0.000	61.244	50.773

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Network and Mission Plan: <i>Network and Mission Plan</i>	136.432	190.789	152.569		152.569	182.009	186.239	185.675	172.847	Continuing	Continuing

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM Support (IDM)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		0.321	Oct 2012	-		-		-	0.000	0.321	0.000
PM Support (ADEC)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		0.349	Oct 2012	1.707	Sep 2014	-		1.707	0.000	2.056	0.000
PM Support (ACN)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.223	Oct 2013	-		1.223	0.000	1.223	0.000
PM Support (ALE-P)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.427	Oct 2013	-		1.427	Continuing	Continuing	Continuing
PM Support (DVE)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		1.396	Oct 2012	2.827	Oct 2013	-		2.827	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		2.066		7.184		0.000		7.184			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Middleware integration via FACE	Various	TBD:TBD	0.000	-		5.200	Jan 2013	-		-		-	0.000	5.200	0.000
Develop and qualify the software and hardware for ALE-P.	Various	Various:Various	0.000	-		1.272	Feb 2013	3.675	Feb 2014	-		3.675	Continuing	Continuing	Continuing
Develop and qualify OSA hardware to host IDM	Various	Various:Various	0.000	-		0.500	Jan 2013	-		-		-	0.000	0.500	0.000
Qualify ADEC software and hardware	Various	Various:Various	0.000	-		6.883	Jan 2013	5.722	Apr 2014	-		5.722	0.000	12.605	0.000
Develop and qualify DVE hardware and software	Various	Various:Various	0.000	-		42.104	Jan 2013	-		-		-	Continuing	Continuing	Continuing
Qualify ACN software and hardware	TBD	Various:Various	0.000	-		-		0.735	Jul 2014	-		0.735	0.000	0.735	0.000
Subtotal			0.000	0.000		55.959		10.132		0.000		10.132			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering, Logistics, and Technical Support (DVE)	Various	Various:Various	0.000	-		-		7.904	Jan 2013	-		7.904	Continuing	Continuing	Continuing
System Engineering, Logistics, and Technical Support (ADEC)	Various	Various:Various	0.000	-		0.599	Feb 2013	0.313	Feb 2014	-		0.313	0.000	0.912	0.000
System Engineering, Logistics, and Technical Support (ACN)	Various	Various:Various	0.000	-		-		0.129	Feb 2014	-		0.129	0.000	0.129	0.000
System Engineering, Logistics, and Technical Support (ALE-P)	Various	Various:Various	0.000	-		-		1.387	Feb 2014	-		1.387	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.599		9.733		0.000		9.733			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aviation Systems Integration Facility Test Lab (IDM)	Various	AMCOM:Redstone Arsenal, AL	0.000	-		1.251	Jan 2013	-		-		-	0.000	1.251	0.000
SVT and LUE for DVE ONS System	TBD	TBD:TBD	0.000	-		-		18.827	Jun 2014	-		18.827	Continuing	Continuing	Continuing
ADEC	Various	AMCOM:Redstone Arsenal, AL	0.000	-		1.369	Feb 2013	1.792	Feb 2014	-		1.792	0.000	3.161	0.000
ACN	TBD	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.367	Apr 2014	-		1.367	0.000	1.367	0.000
ALE-P	TBD	AMCOM:Redstone Arsenal, AL	0.000	-		-		1.738	Feb 2014	-		1.738	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		2.620		23.724		0.000		23.724			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>			PROJECT VU3: <i>Networking And Mission Planning</i>			
	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	0.000	0.000	61.244	50.773	0.000	50.773				

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604201A: <i>AIRCRAFT AVIONICS</i>	PROJECT VU3: <i>Networking And Mission Planning</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 via FACE	[REDACTED]																											
Develop hardware and software (ALE-P)	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 via FACE	2	2012	4	2013
Develop hardware and software (ALE-P)	2	2013	3	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	80.323	90.494	73.309	-	73.309	38.727	11.221	2.675	1.876	Continuing	Continuing
538: <i>Kiowa Warrior</i>	-	66.647	85.468	69.844	-	69.844	38.106	10.807	2.675	1.876	Continuing	Continuing
53Z: <i>Armed Scout Helicopter</i>	-	13.676	5.026	3.465	-	3.465	0.621	0.414	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Change Summary Explanation:

FY 2012: Base funding realigned to other Army programs.

FY 2013: None.

FY 2014: Base funding realigned from other Army programs.

A. Mission Description and Budget Item Justification

The Project 538 funding line develops, integrates and tests modifications which will allow the Kiowa Warrior (KW) to continue to safely serve as the Army's armed reconnaissance aviation capability until replaced/retired. An ACAT II program, OH-58F KW Cockpit and Sensor Upgrade Program (CASUP), was established to address capability shortfalls, obsolescence, and safety issues with the current fielded fleet and is required through 2025 and beyond. KW CASUP current program baseline is not the alternative solution to meet the Armed Scout Helicopter (Project 53Z) capability.

Funding supports the Armed Aerial Scout (AAS) voluntary flight demonstration and AAS milestone support/risk reduction. Post FY 2014 funding will be re-addressed as program strategies mature.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	82.363	90.494	50.043	-	50.043
Current President's Budget	80.323	90.494	73.309	-	73.309
Total Adjustments	-2.040	0.000	23.266	-	23.266
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 3	-2.040	-	23.266	-	23.266

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
538: <i>Kiowa Warrior</i>	-	66.647	85.468	69.844	-	69.844	38.106	10.807	2.675	1.876	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 (MMS) 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 (UAS) 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 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 life. Efforts include upgrading Control Display System (CDS) mission computers, avionics, intercom system, aircraft survivability systems, weapon systems, electrical systems, and cockpit instruments and displays, reducing weight and obsolescence, structural modifications, and replacing single with dual channel Full Authority Digital Electronic Control (FADEC), the MMS with the nose mounted AN/AAS-53 Common Sensor Payload (CSP) which is common with the Gray Eagle Unmanned Aerial Vehicle (UAV). Training Aids, Devices, Simulators and Simulations (TADSS) will be upgraded to maintain concurrency.

OH-58D KW addresses the Degraded Visual Environment (DVE) requirements by improving the Stability and Control Augmentation System (SCAS), digital map elevation banding and inter-visibility, and position location/integrity through the embedded Global Positioning System (GPS). OH-58F KW CASUP adds CSP and Pilot Vehicle Interface (PVI) flight symbology to further increase capability in degraded environments.

Additionally, the funding will develop and qualify Fielded Fleet Upgrades (FFU) for the OH-58D fleet in order to address near term obsolescence, safety and interoperability. FFU will accelerate integration of the Improved Master Controller Processor Unit (IMCPU) and Dual Channel FADEC (DCF) software and hardware. FFU maintains OH-58D fleet viability and operational readiness using components that are common with the OH-58F configuration.

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

	FY 2012	FY 2013	FY 2014
Title: Development and Integration	49.634	54.675	36.133
Articles:	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>		PROJECT 538: <i>Kiowa Warrior</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2012
				FY 2013
				FY 2014
Description: Development and Integration Efforts				
FY 2012 Accomplishments: Development and Integration Efforts				
FY 2013 Plans: Development and Integration Efforts				
FY 2014 Plans: Development and Integration Efforts				
Title: Engineering Support Activities				Articles:
				11.875 0
				17.550 0
				17.512
Description: Engineering Support Activities				
FY 2012 Accomplishments: Engineering Support Activities				
FY 2013 Plans: Engineering Support Activities				
FY 2014 Plans: Engineering Support Activities				
Title: Test and Evaluation				Articles:
				1.814 0
				6.615 0
				10.170
Description: Test and Evaluation				
FY 2012 Accomplishments: Test and Evaluation				
FY 2013 Plans: Test and Evaluation				
FY 2014 Plans: Test and Evaluation				
Title: Program Management				Articles:
				3.324
				6.628
				6.029

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p align="right">Articles:</p> <p>Description: Program Management</p> <p>FY 2012 Accomplishments: B. Program Management</p> <p>FY 2013 Plans: Program Management</p> <p>FY 2014 Plans: C. Program Management</p>	0	0	
Accomplishments/Planned Programs Subtotals	66.647	85.468	69.844

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• (AZ2200): <i>Kiowa Warrior (AZ2200)</i>	92.552	192.484	184.044		184.044	423.960	426.309	453.496	398.286	Continuing	Continuing
• (A02345): <i>Kiowa WRA (A02345)</i>	112.800	183.900								0.000	296.700

Remarks

Funding will procure and install modification kits and components on the Kiowa Warrior (KW).

FY2014 OCO funding will continue to build Kiowa Warrior Wartime Replacement Aircraft (WRA) in the most current configuration to include fielded fleet upgrades and weight reduction items.

D. Acquisition Strategy

The Government serves as the system integrator managing multiple contracts and 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	Various	Various Activities: Various Activities	18.478	3.324	Jan 2012	6.628	Jan 2013	6.029	Jan 2014	-		6.029	Continuing	Continuing	Continuing
Subtotal			18.478	3.324		6.628		6.029		0.000		6.029			

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

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development and Integration	Various	Various Activities: Honeywell Inc. / PIF/BHTI	171.125	49.634	Dec 2011	54.675	Nov 2012	36.133	Nov 2013	-		36.133	Continuing	Continuing	Continuing
Subtotal			171.125	49.634		54.675		36.133		0.000		36.133			

Remarks
Funding will provide both contractor and in-house development and integration efforts. Development and Integration activities will be performed by Honeywell Inc, Prototype Integration Facility and Bell Helicopter Textron Inc.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Support Activities	Various	Various Activities: AMRDEC, AED & SED	22.920	11.875	Mar 2012	17.550	Mar 2013	17.512	Mar 2014	-		17.512	Continuing	Continuing	Continuing
Subtotal			22.920	11.875		17.550		17.512		0.000		17.512			

Remarks
Funding will provide engineering support activities performed by Aviation and Missile Research and Development Center (AMRDEC), Aviation Engineering Directorate (AED) and Software Engineering Directorate (SED).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	Various	Various Activities: RTC, AATD, DTC, OTC	5.955	1.814	Dec 2011	6.615	Feb 2013	10.170	Feb 2014	-		10.170	Continuing	Continuing	Continuing
Subtotal			5.955	1.814		6.615		10.170		0.000		10.170			

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

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	218.478	66.647	85.468	69.844	0.000	69.844			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>Kiowa Warrior</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Critical Design Review (CDR)	■																											
Milestone C	■																											
First Unit Equipped																	■											

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 538: <i>Kiowa Warrior</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Critical Design Review (CDR)	2	2012	2	2012
Milestone C	2	2015	2	2015
First Unit Equipped	4	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
53Z: <i>Armed Scout Helicopter</i>	-	13.676	5.026	3.465	-	3.465	0.621	0.414	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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. The platform enhances mission effectiveness throughout the operational environment, and focuses 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 demonstrations, capabilities assessment study, and AAS milestone support/risk reduction. Post FY 2014 funding will be re-addressed as program strategies mature.

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

	FY 2012	FY 2013	FY 2014
Title: AAS AoA and Milestone Support/Risk Reduction	5.736	5.026	3.465
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2012 Accomplishments: Complete AoA and initiate AAS Milestone Support/Risk Reduction			
FY 2013 Plans: AAS AoA and Milestone support			
FY 2014 Plans: AAS Milestone Support and Risk Reduction			
Title: Voluntary Flight Demonstration	7.940	0.000	0.000
Articles:	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Description: Funding is to support Voluntary Flight Demonstration				
FY 2012 Accomplishments: Voluntary Flight Demonstration				
Accomplishments/Planned Programs Subtotals		13.676	5.026	3.465
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
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-3, RDT&E Project Cost Analysis: PB 2014 Army DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604220A: Armed, Deployable Helos	PROJECT 53Z: Armed Scout Helicopter
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Voluntary Flight Demonstration	Various	Various:Various	0.000	7.940		-		-		-		-	0.000	7.940	0.000
Subtotal			0.000	7.940		0.000		0.000		0.000		0.000	0.000	7.940	0.000

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AAS AoA and Milestone Support/Risk Reduction	Various	Various:Various	3.289	5.736		5.026		3.465		-		3.465	0.414	17.930	Continuing
Subtotal			3.289	5.736		5.026		3.465		0.000		3.465	0.414	17.930	

			All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3.289	13.676	5.026	3.465	0.000	3.465	0.414	25.870	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 53Z: <i>Armed Scout Helicopter</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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	
MILESTONE SUPPORT and RISK REDUCTION	

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604220A: <i>Armed, Deployable Helos</i>	PROJECT 53Z: <i>Armed Scout Helicopter</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
VOLUNTARY FLIGHT DEMONSTRATION	3	2012	2	2013
MILESTONE SUPPORT and RISK REDUCTION	3	2012	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	33.164	181.347	154.621	-	154.621	238.309	186.251	121.720	104.293	Continuing	Continuing
665: <i>A/C Surv Equip Dev</i>	-	9.247	21.976	10.426	-	10.426	20.572	20.469	15.374	20.080	Continuing	Continuing
<i>DX5: Electronic Warfare And Management Tool</i>	-	0.000	0.000	0.013	-	0.013	21.549	17.502	9.978	9.622	Continuing	Continuing
<i>DX6: Multi-Function Electronic Warfare (MFEW)</i>	-	0.000	0.000	0.000	-	0.000	34.698	53.160	17.501	14.378	Continuing	Continuing
<i>VS6: Integrated Electronic Warfare Systems</i>	-	7.155	49.836	20.322	-	20.322	17.206	8.872	6.000	6.000	Continuing	Continuing
<i>VU7: Common Missile Warning System</i>	-	16.591	12.094	2.910	-	2.910	4.622	4.484	4.143	3.713	Continuing	Continuing
<i>VU8: Common Infrared Countermeasure</i>	-	0.171	97.441	120.950	-	120.950	139.662	81.764	68.724	50.500	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	34.233	181.347	245.239	-	245.239
Current President's Budget	33.164	181.347	154.621	-	154.621
Total Adjustments	-1.069	0.000	-90.618	-	-90.618
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.069	-			
• Adjustments to Budget Years	-	-	-90.618	-	-90.618

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
665: <i>A/C Surv Equip Dev</i>	-	9.247	21.976	10.426	-	10.426	20.572	20.469	15.374	20.080	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 path forward, supported by the user and HQDA.

Phase I serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V) Radar Warning Receiver (RWR) through modernization and reduced parts count. 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, RWR Modernization, leverages the on-going United States Navy Class I Engineering Change Proposal (ECP) to the APR-39B(V) RWR, known as APR-39D(V), pending mid-year 2013 approval of the Acquisition Strategy for this plan. APR-39D(V) will significantly improve the near spherical RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft.

Fiscal Year (FY)14 RDTE funding of \$10.426 million funds limited testing of Phase 2 prototypes, development engineering, Intelligence and Information Warfare Directorate (I2WD) Software Integration Lab (SIL) updates, platform integration on AH-64E, and integration with other ASE systems.

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

	FY 2012	FY 2013	FY 2014
Title: Phase 1 Radio Frequency Countermeasures	2.489	0.000	0.000
Articles:	0		
Description: Phase 1 obsolescence upgrade			
FY 2012 Accomplishments: Will continue to fund Phase II RFCM			
Title: Phase 2 Radio Frequency Countermeasures	6.758	21.976	10.426
Articles:	0	0	
Description: Phase 2 Product Development (Digital RWR)			
FY 2012 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Will fund Technical Studies			
<i>FY 2013 Plans:</i> Will fund Phase 2 system prototypes			
<i>FY 2014 Plans:</i> Will fund development engineering, lab updates, and platform integration			
Accomplishments/Planned Programs Subtotals	9.247	21.976	10.426

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

N/A

Remarks

D. Acquisition Strategy

The Army RF ASE is managed by Program Manager ASE (PM ASE) for development, testing, procurement, integration and installation on Army rotary wing and small fixed wing aviation platforms. PM ASE proposed a three-phased path forward commensurate with user priorities and affordability considerations. Phase 1, approved by Milestone Decision Authority (MDA), upgrades the currently fielded AN/APR-39A(V) Radar Warning Receiver (RWR); awarded sole source via Engineering Change Proposal (ECP) to the existing contractor of the APR-39A. Phase 2 will leverage the on-going United States Navy (USN) Class I Correction of Deficiencies ECP to the APR-39B(V) RWR, limiting service-unique design, test, and integration requirements prior to reaching a production decision. These measures, if approved, will provide the Army the opportunity to gain efficiencies and to increase affordability through cross-service sharing efforts during system development, testing, procurement, and sustainment. PM ASE anticipates approval of Phase 2 RWR Modernization Acquisition Strategy mid-year 2013. Phase 3 will develop and integrate active Electronic Countermeasures jamming capability for select aircraft.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Development	Various	Various:-	7.985	-		2.638		-		-		-	Continuing	Continuing	Continuing
Project Management	Various	Various:-	0.182	-		-		0.146		-		0.146	Continuing	Continuing	Continuing
Subtotal			8.167	0.000		2.638		0.146		0.000		0.146			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Digital Radar Warning Receiver (RWR)	Various	Lab Demo / Studies:Various-	3.569	7.065		8.391		3.560		-		3.560	Continuing	Continuing	Continuing
S/W Development	MIPR	AMRDEC, SED:Redstone Arsenal, AL	0.000	-		2.104		1.060		-		1.060	Continuing	Continuing	0.000
Modeling & Simulation Development Facilities (Depot Standup)	MIPR	Tobyhanna:Tobyhanna, PA	0.000	-		1.052		-		-		-	Continuing	Continuing	0.000
Platform Integration	TBD	Multiple:Multiple	0.000	-		-		2.730		-		2.730	0.000	2.730	0.000
Subtotal			3.569	7.065		11.547		7.350		0.000		7.350			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Support	Various	Various:-	1.439	0.920		0.945		0.500		-		0.500	Continuing	Continuing	Continuing
Matrix Support	Various	Various:-	4.974	1.262		1.587		0.390		-		0.390	Continuing	Continuing	Continuing
Subtotal			6.413	2.182		2.532		0.890		0.000		0.890			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government & Contracting DT Testing	TBD	Evaluation Center:12WD	0.025	-		5.259		2.040		-		2.040	Continuing	Continuing	Continuing
Subtotal			0.025	0.000		5.259		2.040		0.000		2.040			
Project Cost Totals			18.174	9.247		21.976		10.426		0.000		10.426			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Phase 1 Qual and Flight Test																												
Phase 1 Fielding Decision																												
Phase 1 FUE																												
Phase 2 MDA IPR																												
Phase 2 RWR EMD Phase																												
Phase DT/OT																												
Phase 2 MS C LRIP/FRP Decision Review																												
Phase 2 Production/Deployment Phase																												
Phase 2 FUE																												
Phase 3 Initiation																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
Phase 1 Qual and Flight Test	3	2012	3	2013
Phase 1 Fielding Decision	3	2013	3	2013
Phase 1 FUE	2	2014	2	2014
Phase 2 MDA IPR	2	2013	2	2013
Phase 2 RWR EMD Phase	2	2013	1	2016
Phase DT/OT	3	2014	3	2015
Phase 2 MS C LRIP/FRP Decision Review	1	2016	1	2016
Phase 2 Production/Deployment Phase	1	2016	4	2018
Phase 2 FUE	4	2017	4	2017
Phase 3 Initiation	2	2016	2	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT DX5: <i>Electronic Warfare And Management Tool</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DX5: <i>Electronic Warfare And Management Tool</i>	-	0.000	0.000	0.013	-	0.013	21.549	17.502	9.978	9.622	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

Note
 This effort is funded in FY12, FY13, and FY14 under PE 0604270A, Project VS6, Integrated Electronic Warfare Systems.

A. Mission Description and Budget Item Justification
 Electronic Warfare Planning and Management Tools (EWPMT) will provide planning capabilities to coordinate, manage, and deconflict unit Electronic Warfare (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. EWPMT is a suite of software tools and applications that will provide a spectrum Common Operating Picture (COP) for the Electronic Warfare Officer (EWO). EWPMT will integrate data elements from Mission Command, Intelligence, and Fires to achieve situational awareness of the Electromagnetic Operational Environment.

Justification: FY2014 funds in the amount of \$.013 million will provide funds for Project Management support of EWPMT.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
Title: EWPMT	0.000	0.000	0.013
Description: EWPMT is a suite of software tools and applications that will allow the Commander and staff a mission command capability to plan, coordinate, manage, and de-conflict unit EW activities.			
FY 2014 Plans: Fund Product Management office operations.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.013

C. Other Program Funding Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• K00002: <i>EW Planning & Management Tools (EWPMT)</i>			0.013		0.013	15.100	15.350	15.680	15.999	0.000	62.142

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT DX5: <i>Electronic Warfare And Management Tool</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

D. Acquisition Strategy

EWPMT will follow an evolutionary acquisition strategy using an Information Technology (IT) acquisition process construct with emphasis on rapid development and continuous product improvement. The overall strategy is to deploy annual software Capability Drops (CDs) beginning with Limited Deployment in FY15. This approach will allow for insertion of yearly improvements earlier than would be possible following a traditional acquisition approach.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604270A: Electronic Warfare Development	PROJECT DX5: Electronic Warfare And Management Tool
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
PMO Staff/Travel	Allot	PM EW:Aberdeen Proving Ground, MD	0.000	-		-		0.013	Nov 2013	-		0.013	0.000	0.013	0.000	
Subtotal			0.000	0.000		0.000		0.013		0.000		0.013	0.000	0.013	0.000	
Project Cost Totals			0.000	0.000		0.000		0.013		0.000		0.013	0.000	0.013	0.000	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT DX5: <i>Electronic Warfare And Management Tool</i>	

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Establish Product Management Office																												
EWPMT Milestone B Decision																												
EWPMT Contract																												
Development of CD 1																												
EWPMT Limited Deployment																												
Continued development of CDs																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT DX5: <i>Electronic Warfare And Management Tool</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Establish Product Management Office	2	2012	2	2013
EWPMT Milestone B Decision	2	2013	2	2013
EWPMT Contract	2	2013	2	2018
Development of CD 1	2	2013	3	2015
EWPMT Limited Deployment	3	2015	3	2015
Continued development of CDs	3	2015	2	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	0.000	0.000	0.000	-	0.000	34.698	53.160	17.501	14.378	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Not applicable

A. Mission Description and Budget Item Justification

Not applicable

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

N/A

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

N/A

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NA	TBD	NA:NA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000			
Project Cost Totals			0.000	0.000		0.000		0.000		0.000		0.000			

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VS6: <i>Integrated Electronic Warfare Systems</i>	-	7.155	49.836	20.322	-	20.322	17.206	8.872	6.000	6.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY14 VS6 funding will support the IEWS System of Systems to include Electronic Warfare Planning and Management Tools (EWPMT), Multi-Function Electronic Warfare (MFEW), and Duke Technology Insertion (DTI).

A. Mission Description and Budget Item Justification

IEWS will provide Electronic Warfare (EW) 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), Electronic Warfare Planning and Management Tools (EWPMT), and Defensive Electronic Attack (DEA). MFEW will provide offensive and defensive electronic warfare and attack and EW support capabilities organic to the Brigade Combat Team to include mounted, dismounted, fixed site, and airborne variants. 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. DEA capability is currently provided by Duke. Duke V3 and Duke Technical Insertion (DTI) will provide DEA capability until MFEW is fielded. These three efforts will also inform Joint CREW material solutions for all service requirements.

Justification: FY2014 funds in the amount of \$20.322 million will support development of EWPMT and MFEW and provide for DTI continued growth and conduct of research, development and testing against emerging Radio Controlled Improvised Explosive Devices (RCIED) threats.

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

	FY 2012	FY 2013	FY 2014
Title: IEWS	7.155	49.836	20.322
Articles:	0	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 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
IEWS FoS: 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.			
<i>FY 2013 Plans:</i> 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.			
<i>FY 2014 Plans:</i> EWPMT: Continue development of EWPMT software development and test. CREW DTI: Develop hardware/software solutions to support a Duke Technical Insertion (DTI) material solution as a component of the IEWS FoS.			
Accomplishments/Planned Programs Subtotals	7.155	49.836	20.322

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• EWPMT: K00002			0.013		0.013	15.100	15.350	15.680	15.999	0.000	62.142
• CREW: VA8000	1,487.600									0.000	1,487.600

Remarks
CREW VA8000 FY13 - \$15,446

D. Acquisition Strategy

IEWS efforts consist of completion of Material Solution Analysis (MSA) phase efforts to include Analysis of Alternatives (AoAs) that will inform a Technology Development strategy and initial actions towards technology development and Engineering Manufacturing Development (EMD) contracts. Multiple competitive contracts are anticipated for IEWS lines of effort. EWPMT will follow an evolutionary acquisition strategy using an Information Technology (IT) acquisition process construct with emphasis on rapid development and continuous product improvement. The overall strategy is to deploy annual software Capability Drops beginning with Limited Deployment in FY15. For MFEW, multiple competitive contracts are anticipated for the Technology Development phase. For DEA, Duke V3 and DTI will provide a bridge and provide DEA capability until MFEW is fielded.

Duke Technical Insertion (DTI) provides for the continued growth and conduct of research, development and testing against emerging Radio Controlled Improvised Explosive Devices (RCIED) threats. Continuing research, development and testing will allow the technology to be relevant to all requirements and remain responsive to urgent needs as required.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VS6: <i>Integrated Electronic Warfare Systems</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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMO Staff/Travel	Allot	PM Electronic Warfare:Aberdeen Proving Ground, MD	0.000	0.744		3.025		1.675	Oct 2013	-		1.675	Continuing	Continuing	0.000
Program and Technical Assistance support	C/TBD	TBD:Aberdeen Proving Ground, MD	0.000	0.489	May 2012	-		-		-		-	Continuing	Continuing	0.000
Source Selection Evaluation Board (SSEB) support	MIPR	TBD:Aberdeen Proving Ground, MD	0.000	-		4.360		-		-		-	0.000	4.360	0.000
Subtotal			0.000	1.233		7.385		1.675		0.000		1.675			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EMD Contract - EWPMT	C/TBD	TBD:TBD	0.000	-		11.748	Mar 2013	14.522	Oct 2013	-		14.522	Continuing	Continuing	0.000
IEWS Engineering and Development	MIPR	I2WD:Aberdeen MD	0.000	3.757	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Technology Studies and Technology Maturation Efforts for MFEW	C/TBD	TBD:TBD	0.000	-		24.461	Mar 2013	-		-		-	Continuing	Continuing	0.000
CREW DTI Solutions	SS/TBD	SRCTech:Syracuse, NY	0.000	-		-		1.841	Oct 2013	-		1.841	0.000	1.841	0.000
Subtotal			0.000	3.757		36.209		16.363		0.000		16.363			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technical/Engineering Support - Contractor	C/TBD	GTRI:Atlanta, GA	0.000	-		2.405		-		-		-	Continuing	Continuing	Continuing
Government Engineering Support	MIPR	USACECOM:Aberdeen Proving Ground, MD	0.000	2.165	Feb 2012	3.837		0.341	Oct 2013	-		0.341	0.000	6.343	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EWPMT Support	C/TBD	TBD:TBD	0.000	-		-		0.396	Nov 2013	-		0.396	0.000	0.396	0.000
DTI Engineering support	C/CPFF	Various:Various	0.000	-		-		0.205	Oct 2013	-		0.205	0.000	0.205	0.000
DTI Government Engineering	MIPR	Various:Various	0.000	-		-		0.313	Oct 2013	-		0.313	0.000	0.313	0.000
Subtotal			0.000	2.165		6.242		1.255		0.000		1.255			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EWPMT Test support	MIPR	Various:TBD	0.000	-		-		0.770		-		0.770	Continuing	Continuing	0.000
DTI Test support	MIPR	Yuma Proving Ground:Yuma, AZ	0.000	-		-		0.259	Apr 2014	-		0.259	0.000	0.259	0.000
Subtotal			0.000	0.000		0.000		1.029		0.000		1.029			0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	7.155	49.836	20.322	0.000	20.322			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VS6: <i>Integrated Electronic Warfare Systems</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Establish Product Management Offices (PMOs)	██████████																											
(1) EWPMT Milestone B Decision					██████																							
EWPMT Contract					████████████████████																							
EWPMT Limited Deployment													██████															
Multi-Functional EW - MS A					██████																							
MFEW TD Phase Prototyping Efforts					████████████████																							
Delivery of CREW DTI Systems for Development					██████																							
Develop H/W and S/W solutions for CREW DTI									██																			
Developmental testing of CREW DTI solutions													██															

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
(1) EWPMT Milestone B Decision	2	2013	2	2013
EWPMT Contract	2	2013	3	2015
EWPMT Limited Deployment	3	2015	3	2015
Multi-Functional EW - MS A	4	2013	4	2013
MFEW TD Phase Prototyping Efforts	4	2013	4	2014
Delivery of CREW DTI Systems for Development	3	2013	4	2013
Develop H/W and S/W solutions for CREW DTI	1	2014	4	2018
Developmental testing of CREW DTI solutions	3	2014	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>Common Missile Warning System</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VU7: <i>Common Missile Warning System</i>	-	16.591	12.094	2.910	-	2.910	4.622	4.484	4.143	3.713	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

Note
 Previously funded in L20 Electronic Warfare Development

A. Mission Description and Budget Item Justification

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 Common Missile Warning System (CMWS) is a core element of the SIIRCM concept. CMWS is an integrated ultraviolet (UV) missile warning system, and an Improved Countermeasure Dispenser (ICMD) serving as a subsystem to a host aircraft.

The CMWS program is a UV missile warning system that cues both flare and laser countermeasures to defeat incoming IR missiles and will provide a limited ability to warn aircrews of incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, 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. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (CH-47 platform only). In addition, the CMWS ECU receives detections of unguided munitions which it then passes to the aircrew through aural and visual cues. The aircrew then applies the appropriate Tactics Techniques and Procedures (TTPs) to break contact or engage the enemy with on ship ordnance. The CMWS Generation 3 (Gen 3) 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 (FMR) for CMWS and ensure protection against emerging IR guided missile threats.

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

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 program security initiatives. The sensor studies will evaluate current CMWS technology as compared to the Navy Joint Allied Threat Awareness System (JATAS) program and other service missile warning systems and look at the pros and cons of UV missile warning sensors compared to infrared missile warning sensors for

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>Common Missile Warning System</i>
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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 United States Government (USG).

Justification

Fiscal Year (FY)14 Base RDT&E dollars in the amount of \$2.910 million supports development engineering of the Threat Analysis Database (TAD) and integration with other ASE systems.

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

	FY 2012	FY 2013	FY 2014
Title: Development Effort	16.591	12.094	2.910
Articles:	0	0	
Description: -			
FY 2012 Accomplishments: RDT&E funding supports the design and development for the CMWS Generation 3 (Gen 3) Electronic Control Unit (ECU), CMWS Enhanced Sensors, and CMWS Tier 2/3 enhancement.			
FY 2013 Plans: RDT&E funding supports the design and development of the CMWS Tier 2/3 enhancement, the CMWS Enhanced Sensors studies.			
FY 2014 Plans: RDT&E funding supports development engineering of the Threat Analysis Database (TAD), and salaries.			
Accomplishments/Planned Programs Subtotals	16.591	12.094	2.910

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APA Funding: <i>APA, BA 4 AZ3517</i>	104.251	127.751	126.869		126.869	149.073	192.472	155.324	50.107	0.000	905.847

Remarks

D. Acquisition Strategy

The current CMWS program Acquisition Program Baseline (APB) is dated September 2010 and the program is fully funded to the Cost Assessment and Program Evaluation Independent Cost Estimate (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 previous CMWS production contract was a firm fixed-priced (FFP), Indefinite Delivery,

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>Common Missile Warning System</i>
<p>Indefinite Quantity (IDIQ) contract. A FFP bridge contract will be awarded March 2013 for CMWS hardware and the follow on CMWS production FFP/CPFF IDIQ contract will be a 3 year firm fixed price contract to procure the remaining Gen 3 ECUs and A-Kits. The Gen 3 ECU became a part of the system in FY10, and fielding will begin in FY13.</p>		
<p><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.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>Common Missile Warning System</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CMWS System Engineering Program Management	Various	PM ASE, HSV, AL:-	0.000	2.670		1.984		0.274		-		0.274	Continuing	Continuing	Continuing
Subtotal			0.000	2.670		1.984		0.274		0.000		0.274			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CMWS Tier 2/3 Upgrades	Various	Various:-	0.000	2.000		0.815		-		-		-	Continuing	Continuing	Continuing
CMWS Modeling and Simulation	Various	Various:-	0.000	0.455		1.200		-		-		-	Continuing	Continuing	Continuing
Threat Analysis Database (TAD)	TBD	NGIC:TBD	0.000	-		-		2.636		-		2.636	0.000	2.636	0.000
CMWS Enhanced Sensor Study & Evaluation	Various	TBD:-	0.000	11.466		8.095		-		-		-	Continuing	Continuing	Continuing
CMWS Gen 3 Providence Additional Phases	Various	TBD:-	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	13.921		10.110		2.636		0.000		2.636			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CMWS Contractor Support	SS/FP	Various:-	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
CMWS Matrix Support	Various	Various:-	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604270A: Electronic Warfare Development	PROJECT VU7: Common Missile Warning System
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Test and Evaluation	C/TBD	AMCOM RTC:Redstone	0.000	-		-		-		-		-	Continuing	Continuing	0.000
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000			0.000
Project Cost Totals			0.000	16.591		12.094		2.910		0.000		2.910			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>Common Missile Warning System</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
CMWS Enhanced Sensor Study & Evaluation																												
Start of CMWS Gen 3 ECU Fielding to support CMWS Assets																												
Start of HF QRC Fielding to support CMWS Assets																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU7: <i>Common Missile Warning System</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CMWS Enhanced Sensor Study & Evaluation	3	2012	1	2014
Start of CMWS Gen 3 ECU Fielding to support CMWS Assets	4	2013	4	2013
Start of HF QRC Fielding to support CMWS Assets	4	2013	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>				PROJECT VU8: <i>Common Infrared Countermeasure</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VU8: <i>Common Infrared Countermeasure</i>	-	0.171	97.441	120.950	-	120.950	139.662	81.764	68.724	50.500	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Common Infrared Countermeasure (CIRCM) (next generation Advanced Threat Infrared Countermeasure (ATIRCM)) is an infrared (IR) countermeasure system that interfaces with a Missile Warning System (MWS) to provide near spherical coverage of the host platform in order to defeat IR threats. The 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 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 was approved to be funded to the Director, Cost Assessment and Program Evaluation Independent Cost Estimate (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.

Justification:

Fiscal Year 2014 Base RDT&E dollars in the amount of \$120.950 million continues the CIRCM TD phase, preparation for Engineering and Manufacturing Development (EMD) phase, and integration with other Aircraft Survivability Equipment (ASE) systems.

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

	FY 2012	FY 2013	FY 2014
Title: Development Efforts	0.171	97.441	120.950
Articles:	0	0	
Description: RDT&E dollars begin the design and development of the CIRCM system.			
FY 2012 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>Common Infrared Countermeasure</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
RDT&E dollars support the CIRCM TD phase.			
<i>FY 2013 Plans:</i> RDT&E dollars support the CIRCM TD phase and begin preparation for the EMD phase.			
<i>FY 2014 Plans:</i> RDT&E dollars support the CIRCM TD phase and continue preparation for the EMD phase.			
Accomplishments/Planned Programs Subtotals	0.171	97.441	120.950

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</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	101.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

After a full and open competition beginning in the second quarter of Fiscal Year 2011 (FY 2011), two contractors were selected and awarded Technology Development contracts on January 31, 2012. The CIRCM contract awards were followed by a contractor protest which resulted in a work stoppage of 100 days. Government Accountability Office (GAO) ruled in favor of the Government and effort was re-initiated on May 23, 2012. CIRCM will continue pre-Milestone B (MS B) activities and initiate a competitive procurement for Engineering and Manufacturing Development (EMD) in the second quarter of FY 2014. MS B approval is anticipated in the first quarter of FY 2015, followed by award of EMD contract(s) in the second quarter of FY 2015, with priced options for Low Rate Initial Production (LRIP) and for the procurement of a Technical Data Package (TDP) that will enable competition for Full Rate Production (FRP). Upon CIRCM MS C approval, the LRIP option will be exercised and the program will immediately enter the Production & Deployment phase. Currently, Product Manager (PdM) Countermeasures intends to pursue full and open competition for the award of a fixed price contract for CIRCM FRP.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>Common Infrared Countermeasure</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering Program Management (SEPM)	Various	PM ASE, HSV, AL:-	10.509	0.171		9.133		11.835		-		11.835	Continuing	Continuing	Continuing
Data	TBD	Various:-	0.000	-		-		0.108		-		0.108	Continuing	Continuing	Continuing
Subtotal			10.509	0.171		9.133		11.943		0.000		11.943			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Non-Recurring Engineering (NRE)	C/CPIF	Various:-	45.686	-		42.880		20.545		-		20.545	Continuing	Continuing	Continuing
Prototype Manufacturing	C/FFP	Various:-	23.684	-		-		67.486		-		67.486	Continuing	Continuing	Continuing
Development Facilities	Various	Various:-	0.000	-		8.390		2.557		-		2.557	Continuing	Continuing	Continuing
Other R&D	Various	Various:-	9.819	-		16.353		4.229		-		4.229	Continuing	Continuing	Continuing
Subtotal			79.189	0.000		67.623		94.817		0.000		94.817			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Equipment	Various	Various:-	0.200	-		3.670		7.000		-		7.000	Continuing	Continuing	Continuing
Subtotal			0.200	0.000		3.670		7.000		0.000		7.000			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government System Testing & Evaluation	Various	CECOM - I2WD APG MD:-	9.252	-		5.120		4.077		-		4.077	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>Common Infrared Countermeasure</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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																												
TD Contract Award/Protest																												
Bridge Option																												
MS B																												
EMD PHASE																												
EMD CONTRACT AWARD																												
MS C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604270A: <i>Electronic Warfare Development</i>	PROJECT VU8: <i>Common Infrared Countermeasure</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TD PHASE	3	2012	2	2014
TD Contract Award/Protest	2	2012	3	2012
Bridge Option	3	2014	4	2014
MS B	1	2015	1	2015
EMD PHASE	2	2015	2	2017
EMD CONTRACT AWARD	2	2015	2	2015
MS C	2	2017	2	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	31.826	-	31.826	0.647	0.000	0.000	0.000	Continuing	Continuing
162: <i>Network Enterprise Domain (NED)</i>	-	0.000	0.000	26.217	-	26.217	0.000	0.000	0.000	0.000	Continuing	Continuing
DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>	-	0.000	0.000	5.609	-	5.609	0.647	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

In accordance with the Acquisition Decision Memorandum (ADM) dated 11 July 2012, the JTRS Program of Records (PORs) transitioned to a Military Department-managed program. AMF JTRS moved to the Army Program Element (PE) 0605380A, MIDS transitioned to the Navy under PE 0205604N, and in FY14 Joint Tactical Networks (JTN) (formally known as JNED) executes funding through the Army PE 0605030A, the Navy PE 0605030N, and the Air Force PE 0605030F from PE 0604280A. The adjustment to the budget of \$40.715 million is for realignment of funding to each respective programs new PE.

A. Mission Description and Budget Item Justification

HMS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for JointVision 2020. The HMS products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. HMS products will provide transformational communication capabilities for the warfighter. HMS is intended to support communications readiness and mission success, in the 2 Megahertz (MHz) to 2 Gigahertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. HMS products are hardware-configurable and software-programmable radio systems that provide increased interoperability, flexibility and adaptability to support varied mission requirements.

HMS provides the capability to meet Joint Ground Mounted, Dismounted & Embedded Radio Requirements. Increment 1, Phase 1 developed Small-Form-Fit (SFF) SFF-A, SFF-D and AN/PRC-154 Rifleman Radio running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack and SFF-B. Phase 2 radios are all Type 1 compliant for use in a classified environment running Satellite Communications (SATCOM), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS) and Single Channel Ground to Air Radio System (SINCGARS) waveforms.

The FY 2014 budget will provide funding to complete Government Developmental Test (GDT) and development efforts for Manpack; Allow for Information Assurance certification for Phase 2 radios with Mobile User Objective System (MUOS) capability; Perform GDT, including the participation in the Navy MUOS End to End Demonstration, and Multiservice Operational Test & Evaluation (MOTE) with MUOS waveform on the Manpack; Perform Operational Test for Phase 2; Provide technical and engineering support for development efforts including preparing for Full Rate Production (FRP) for Phase 2.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	0.000	0.000	72.541	-	72.541
Current President's Budget	0.000	0.000	31.826	-	31.826
Total Adjustments	0.000	0.000	-40.715	-	-40.715
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-40.715	-	-40.715

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
162: <i>Network Enterprise Domain (NED)</i>	-	0.000	0.000	26.217	-	26.217	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Prior to FY 2014, Project Unit 3075 JTRS HMS was funded under Program Element (PE) 0604280N aligned under the Navy Joint Tactical Radio System (JTRS) Programs. In accordance with the ADM dated 11 July 2012, the JTRS Program of Records (PORs) transitioned to a Military Department-managed program. HMS JTRS is now associated with Program Executive Office Command, Control and Communications-Tactical (PEO C3T) under Project Manager Tactical Radios (PM TR) PE 0604280A.

FY 2014-15 JTRS HMS funding is shared between Budget Submission DZ5 and 162 under PE 0604280A.

A. Mission Description and Budget Item Justification

HMS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for JointVision 2020. The HMS products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. HMS products will provide transformational communication capabilities for the warfighter. HMS is intended to support communications readiness and mission success, in the 2 Megahertz (MHz) to 2 Gigahertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. HMS products are hardware-configurable and software-programmable radio systems that provide increased interoperability, flexibility and adaptability to support varied mission requirements.

HMS provides the capability to meet Joint Ground Mounted, Dismounted & Embedded Radio Requirements. Increment 1, Phase 1 developed Small-Form-Fit (SFF) SFF-A, SFF-D and AN/PRC-154 Rifleman Radio running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack and SFF-B. Phase 2 radios are all Type 1 compliant for use in a classified environment running Satellite Communications (SATCOM), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS) and Single Channel Ground to Air Radio System (SINCGARS) waveforms.

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

	FY 2012	FY 2013	FY 2014
Title: JTRS Network Enterprise Domain	0.000	0.000	26.217
Description: HMS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for JointVision 2020. The HMS products will be multifunctional, multiband,			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT 162: <i>Network Enterprise Domain (NED)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
<p>multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. HMS products will provide transformational communication capabilities for the warfighter. HMS is intended to support communications readiness and mission success, in the 2 Megahertz (MHz) to 2 Gigahertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. HMS products are hardware-configurable and software-programmable radio systems that provide increased interoperability, flexibility and adaptability to support varied mission requirements.</p> <p>HMS provides the capability to meet Joint Ground Mounted, Dismounted & Embedded Radio Requirements. Increment 1, Phase 1 developed Small-Form-Fit (SFF) SFF-A, SFF-D and AN/PRC-154 Rifleman Radio running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack and SFF-B. Phase 2 radios are all Type 1 compliant for use in a classified environment running Satellite Communications (SATCOM), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS) and Single Channel Ground to Air Radio System (SINCGARS) waveforms.</p> <p>FY 2014 Plans: Complete Phase 1 Follow-on Operational Test & Evaluation (FOTE). Complete Government Developmental Test (GDT) and development efforts for Manpack; Receive Information Assurance certification for Phase 2 radios with Mobile User Objective System (MUOS) capability; Perform GDT, including the participation in the Navy MUOS End to End Demonstration, and Multiservice Operational Test & Evaluation (MOTE) with MUOS waveform on the Manpack; Perform Operational Test for Phase 2; Provide technical and engineering support for development efforts including preparing for Full Rate Production (FRP) for Phase 2.</p>			
Accomplishments/Planned Programs Subtotals	0.000	0.000	26.217

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks President's Budget (PB) FY 2013 included the following programs' funding: Network Enterprise Domain (NED), Handheld Manpack Small Form Fit (HMS), Airborne Maritime Fixed (AMF), and Multifunctional Information Distribution System (MIDS). At the time of PB 2014, all programs associated with this line with the exception of JTRS HMS have been moved to their own PE lines. NED program has been moved to PE 060503A along with the amount of \$23.621 million, AMF program has been moved to PE 060538A along with the amount of \$30.719 million, MIDS program has been moved to PE 0205604N along with the amount of \$1.236 million. HMS JTRS currently owns PE 0604280A and both associated Project Codes under it: 162 Network Enterprise Domain (NED) and DZ5 Handheld Manpack and Small Form Fit (HMS).

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT 162: <i>Network Enterprise Domain (NED)</i>

D. Acquisition Strategy

The JTRS budget justification will be found in the Navy FY 2014 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Management Office Support	Various	PEO C3T & CECOM:APG, MD	0.000	-		-		1.193	Oct 2013	-		1.193	0.000	1.193	1.193
Subtotal			0.000	0.000		0.000		1.193		0.000		1.193	0.000	1.193	1.193

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HMS JTRS System, Design & Development	C/CPAF	General Dynamics D4 Systems:Scottsdale, AZ	0.000	-		-		7.729	Oct 2013	-		7.729	0.000	7.729	7.729
Subtotal			0.000	0.000		0.000		7.729		0.000		7.729	0.000	7.729	7.729

Remarks
 **The JTRS budget justification will be found in the Navy FY14 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.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HMS JTRS Engineering/ Technical Support	Various	PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC, Various:APG, MD; Various	0.000	-		-		5.000	Oct 2013	-		5.000	0.000	5.000	5.000
Subtotal			0.000	0.000		0.000		5.000		0.000		5.000	0.000	5.000	5.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army										DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>					PROJECT 162: <i>Network Enterprise Domain (NED)</i>				

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Follow On Delta Development & Testing	Various	EPG, AEC, MBL, ARLSLAD, CERDEC, OTC, JITC:FT. Benning, GA; APG, MD; Various	0.000	-		-		12.295	Jan 2014	-		12.295	0.000	12.295	12.295
Subtotal			0.000	0.000		0.000		12.295		0.000		12.295	0.000	12.295	12.295
Project Cost Totals			0.000	0.000		0.000		26.217		0.000		26.217	0.000	26.217	26.217

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT 162: <i>Network Enterprise Domain (NED)</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Increment 1, Phase 1 FOTE																												
Increment 1, Phase 2 Porting/CDT																												
Increment 1, Phase 2 GDT																												
Increment 1, Phase 2 Operational Test																												
Increment 1, Phase 2 MUOS GDT																												
Increment 1, Phase 2 MUOS MOTE																												
Increment 1, Phase 2 FRP																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT 162: <i>Network Enterprise Domain (NED)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 1, Phase 1 FOTE	3	2014	3	2014
Increment 1, Phase 2 Porting/CDT	1	2014	1	2014
Increment 1, Phase 2 GDT	1	2014	1	2014
Increment 1, Phase 2 Operational Test	3	2014	3	2014
Increment 1, Phase 2 MUOS GDT	1	2014	1	2014
Increment 1, Phase 2 MUOS MOTE	2	2014	2	2014
Increment 1, Phase 2 FRP	4	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>	-	0.000	0.000	5.609	-	5.609	0.647	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Prior to FY14, Project Unit 3075 JTRS HMS was funded under Program Element (PE) 0604280N aligned under the Navy Joint Tactical Radio System (JTRS) Programs. In accordance with the ADM dated 11 July 2012, the JTRS Program of Records (PORs) transitioned to a Military Department-managed program. HMS JTRS is now associated with Program Executive Office Command, Control and Communications-Tactical (PEO C3T) under Project Manager Tactical Radios (PM TR) PE 0604280A.

FY14-FY15 JTRS HMS funding is shared between Budget Submission DZ5 and 162 under PE 0604280A.

A. Mission Description and Budget Item Justification

HMS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for JointVision 2020. The HMS products will be multifunctional, multiband, multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. HMS products will provide transformational communication capabilities for the warfighter. HMS is intended to support communications readiness and mission success, in the 2 Megahertz (MHz) to 2 Gigahertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. HMS products are hardware-configurable and software-programmable radio systems that provide increased interoperability, flexibility and adaptability to support varied mission requirements.

HMS provides the capability to meet Joint Ground Mounted, Dismounted & Embedded Radio Requirements. Increment 1, Phase 1 developed Small-Form-Fit (SFF) SFF-A, SFF-D and AN/PRC-154 Rifleman Radio running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack and SFF-B. Phase 2 radios are all Type 1 compliant for use in a classified environment running Satellite Communications (SATCOM), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS) and Single Channel Ground to Air Radio System (SINCGARS) waveforms.

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

	FY 2012	FY 2013	FY 2014
Title: HMS JTRS	0.000	0.000	5.609
Description: HMS is the Department of Defense (DoD) family of common software-defined programmable radios that will form the foundation of information radio frequency transmission for JointVision 2020. The HMS products will be multifunctional, multiband,			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
<p>multimode, network capable, capable of providing communications through a range of low probability of intercept, low probability of detection and anti-jam waveforms. HMS products will provide transformational communication capabilities for the warfighter. HMS is intended to support communications readiness and mission success, in the 2 Megahertz (MHz) to 2 Gigahertz (GHz) operating frequency range, by providing military commanders with the ability to command, control and communicate with their forces via secure voice/video/data media forms. HMS products are hardware-configurable and software-programmable radio systems that provide increased interoperability, flexibility and adaptability to support varied mission requirements.</p> <p>HMS provides the capability to meet Joint Ground Mounted, Dismounted & Embedded Radio Requirements. Increment 1, Phase 1 developed Small-Form-Fit (SFF) SFF-A, SFF-D and AN/PRC-154 Rifleman Radio running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 will develop the 2 Channel Manpack and SFF-B. Phase 2 radios are all Type 1 compliant for use in a classified environment running Satellite Communications (SATCOM), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS) and Single Channel Ground to Air Radio System (SINCGARS) waveforms.</p> <p><i>FY 2014 Plans:</i> Complete Phase 1 Follow-on Operational Test & Evaluation (FOTE). Complete Government Developmental Test (GDT) and development efforts for Manpack; Receive Information Assurance certification for Phase 2 radios with Mobile User Objective System (MUOS) capability; Perform GDT, including the participation in the Navy MUOS End to End Demonstration, and Multiservice Operational Test & Evaluation (MOTE) with MUOS waveform on the Manpack; Perform Operational Test for Phase 2; Provide technical and engineering support for development efforts including preparing for Full Rate Production (FRP) for Phase 2.</p>			
Accomplishments/Planned Programs Subtotals	0.000	0.000	5.609

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

N/A

Remarks

D. Acquisition Strategy

This project supports the HMS Engineering and Manufacturing Development phase efforts. The HMS Program began with the development of the HMS Radios following Milestone (MS) B approval on April 26, 2004. HMS uses an evolutionary acquisition strategy and will deliver NSA certified capabilities. Following full and open competition, a single Cost-Plus-Award Fee (CPAF) contract was awarded on July 16, 2004. The contract is structured to address Increment 1. JTRS HMS Increment 1 consists of two phases of development. Increment 1, Phase 1 developed SFF-A, SFF-D and AN/PRC-154 Rifleman Radio running Soldier Radio Waveform (SRW) for use in a sensitive but unclassified environment (Type 2). Increment 1, Phase 2 is developing the 2 Channel Manpack and SFF-B which are Type 1 compliant for use in

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	PE 0604280A: <i>Joint Tactical Radio</i>	DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>

a classified environment, Satellite Communications (SATCOM), Soldier Radio Waveform (SRW), Mobile User Objective System (MUOS), and Single Channel Ground to Air Radio System (SINCGARS) waveforms.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Management Office Support	Various	PEO C3T & CECOM,;APG, MD	0.000	-		-		0.255	Oct 2013	-		0.255	0.029	0.284	0.284
Subtotal			0.000	0.000		0.000		0.255		0.000		0.255	0.029	0.284	0.284

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HMS JTRS System, Design & Development	C/CPAF	General Dynamics D4 Systems:Scottsdale, AZ	0.000	-		-		1.653	Oct 2013	-		1.653	0.191	1.844	1.844
Subtotal			0.000	0.000		0.000		1.653		0.000		1.653	0.191	1.844	1.844

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HMS JTRS Engineering/ Technical Support	Various	PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC, Various:APG, MD, Various	0.000	-		-		1.070	Oct 2013	-		1.070	0.123	1.193	1.193
Subtotal			0.000	0.000		0.000		1.070		0.000		1.070	0.123	1.193	1.193

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Follow on Delta Development & Testing	Various	EPG. AEC, MBL, ARLSLAD, CERDEC, OTC,	0.000	-		-		2.631	Jan 2014	-		2.631	0.304	2.935	2.935

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Increment 1, Phase 1 FOTE																												
Increment 1, Phase 2 Porting/CDT																												
Increment 1, Phase 2 Operational Test																												
Increment 1, Phase 2 Full Rate Production Decision																												
Increment 1, Phase 2 MUOS GDT																												
Increment 1, Phase 2 MUOS MOTE																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604280A: <i>Joint Tactical Radio</i>	PROJECT DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 1, Phase 1 FOTE	3	2014	3	2014
Increment 1, Phase 2 Porting/CDT	1	2014	1	2014
Increment 1, Phase 2 Operational Test	3	2014	3	2014
Increment 1, Phase 2 Full Rate Production Decision	4	2014	4	2015
Increment 1, Phase 2 MUOS GDT	1	2014	1	2014
Increment 1, Phase 2 MUOS MOTE	2	2014	2	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	47.000	12.636	23.341	-	23.341	9.897	0.000	0.000	0.000	Continuing	Continuing
DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>	-	47.000	12.636	23.341	-	23.341	9.897	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY 2014 Base funding supports program management office and system security certification activities to execute a Non-Developmental Item (NDI) strategy for a Mid-Tier Networking Vehicular capability.

FY2012 Congressional Add of \$47.000 million released to PM MNVR upon receipt of funds in August 2012.

A. Mission Description and Budget Item Justification

The Mid-tier Networking Vehicular Radio (MNVR) encourages an industry solution for a multi-channel vehicular radio which will host Joint Tactical Networking Center (JTNC) waveforms, addressing the Army's requirement for Mid-Tier Wideband Networking (MWN) capabilities to support the Warfighter by providing an extension of data services from the upper tactical network at brigade and battalion to the lower tactical network at company and platoon echelon platforms.

The Mid-tier Networking Vehicular Radio (MNVR) is a Non-Developmental Item (NDI) Initiative that equips the joint military with a multiple channel, Type-1 classification radio providing data communication service capabilities for mobile and fixed forces supporting mission planning, Command and Control (C2), and situational awareness from brigade to platoon levels. The advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain and under adverse weather conditions.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604290A: <i>Mid-tier Networking Vehicular Radio (MNVR)</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	0.000	12.636	29.341	-	29.341
Current President's Budget	47.000	12.636	23.341	-	23.341
Total Adjustments	47.000	0.000	-6.000	-	-6.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	47.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-6.000	-	-6.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DW1: <i>MID-TIER WIDEBAND NETWORKING VEHICULAR RADIO MNVR</i>	-	47.000	12.636	23.341	-	23.341	9.897	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

The Mid-tier Networking Vehicular Radio (MNVR) encourages an industry solution for a multi-channel vehicular radio which will host Joint Tactical Networking Center (JTNC) networking waveforms, addressing the Army's requirement for Mid-Tier Wideband Networking (MWN) capabilities to support the Warfighter by providing an extension of data services from the upper tactical network at brigade and battalion to the lower tactical network at company and platoon echelon platforms. The MNVR provides the Army with the Multi-tier Wideband Networking (MWN) waveform capability with a dynamic, scalable, on the move (OTM) network architecture, connecting the Warfighter to the Mission Command (MC) Network and enhances capability to exchange voice and data simultaneously via the desired government owned Mobile Ad-hoc Networking (MANET) Wideband Networking Waveform (WNW) faster than current systems and at a lower cost solution than MNVR's predecessor, the Ground Mobile Radio (GMR).

A. Mission Description and Budget Item Justification

The Mid-tier Networking Vehicular Radio (MNVR) encourages an industry solution for a multi-channel vehicular radio which will host Joint Tactical Networking Center (JTNC) networking waveforms, addressing the Army's requirement for Mid-Tier Wideband Networking (MWN) capabilities to support the Warfighter by providing an extension of data services from the upper tactical network at brigade and battalion to the lower tactical network at company and platoon echelon platforms.

The Mid-tier Networking Vehicular Radio (MNVR) is a Non-Developmental Item (NDI) Initiative that equips the joint military with a multiple channel, Type-1 classification radio providing data communication service capabilities for mobile and fixed forces supporting mission planning, Command and Control (C2), and situational awareness from brigade to platoon levels. The advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain and under adverse weather conditions.

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

	FY 2012	FY 2013	FY 2014
Title: Mid-Tier Networking Vehicular Radio (MNVR) Program	47.000	12.636	23.341
Articles:	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Description: RDTE Funding supports Program Office and contract development. Supports efforts to evaluate Source Selection and Platform Integration and Test of industry solutions for a Non-Developmental Item (NDI) solution support for Joint Tactical Networking Center (JTNC) waveforms and user operational requirements.</p> <p>FY 2012 Accomplishments: FY 2012 Funding supports Program Office establishment and award of competitive FFP two-year IDIQ contract in May 2013 to manufacture and deliver MNVR units to Army Capability Set 14/15 brigades. Supports program management, vehicular platform integration, and customer test activities to execute a Non-Developmental Item (NDI) strategy for a mid-tier networking vehicular capability, including vendor Manufacturing Readiness Assessments, Government Lab Test, and Source Selection Performance Demonstration (SSPD) for contract evaluation.</p> <p>FY 2013 Plans: FY 2013 Funding supports program management activities to execute a Non-Developmental Item (NDI) strategy for a mid-tier networking vehicular capability.</p> <p>FY 2014 Plans: FY 2014 Funding supports program management and system security certification activities to execute a Non-Developmental Item (NDI) strategy for a mid-tier networking vehicular capability, including National Security Agency (NSA) certification, Department of Defense Information Assurance Certification and Accreditation Process (DIACAP) assessment, Counter Remote Control Radio Electronic Warfare (CREW) testing, System Threat Assessment Report (STAR), and Public Key Infrastructure (PKI) certification.</p>			
Accomplishments/Planned Programs Subtotals	47.000	12.636	23.341

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

Line Item	FY 2012	FY 2013	FY 2014	FY 2014	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
			Base	OCO	Total						
• B51001: <i>Mid-Tier Networking Vehicular Radio (MNVR)</i>		86.219	19.200		19.200	83.700	83.700	83.700	86.616	Continuing	Continuing

Remarks
The Mid-tier Networking Vehicular Radio (MNVR) is a Non Developmental Item (NDI) Initiative that equips the joint military with a multiple channel, Type 1 classification radio providing data communication service capabilities for mobile and fixed forces supporting mission planning, Command and Control (C2), and situational awareness from brigade to platoon levels. The advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain and under adverse weather conditions.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

D. Acquisition Strategy

The MNVR encourages an industry solution for a multi-channel vehicular radio which will host Joint Tactical Networking Center (JTNC) networking waveforms, addressing the Army's requirement for Mid-Tier Wideband Networking (MWN) capabilities. MNVR provides an extension of data services from the upper tactical network at brigade and battalion to the lower tactical network at company and platoon echelon platforms.

PM MNVR Phase One is the procurement of the MNVR Directed Requirement Non-Developmental Item (NDI) Solution resulting in a Competitive, Single-Award, Indefinite Delivery, Indefinite Quantity (IDIQ) Firm-Fixed Price (FFP) contract award with a two-year production period, planned for June 2013.

PM MNVR Phase Two is the procurement of the MNVR Program of Record (PoR) Non-Developmental Item (NDI) Solution resulting in a Competitive, Multiple-Award, Indefinite Delivery, Indefinite Quantity (IDIQ) Firm-Fixed Price (FFP) contract award that will qualify two vendors for competitive Delivery Orders, with a five-year production period.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support	MIPR	Aberdeen Proving Ground:Maryland	0.000	24.272		7.100		13.941		-		13.941	5.912	51.225	0.000
Subtotal			0.000	24.272		7.100		13.941		0.000		13.941	5.912	51.225	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Development Analysis and Product Source Selection	MIPR	Aberdeen Proving Ground:Maryland	0.000	12.298		-		0.590		-		0.590	0.250	13.138	0.000
Subtotal			0.000	12.298		0.000		0.590		0.000		0.590	0.250	13.138	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Test and Evaluation	MIPR	Aberdeen Proving Ground:Maryland	0.000	10.430		5.536		8.810		-		8.810	3.735	28.511	0.000
Subtotal			0.000	10.430		5.536		8.810		0.000		8.810	3.735	28.511	0.000

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		0.000	47.000	12.636	23.341	0.000	23.341	9.897	92.874	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Directed Requirement (DR) Contract Award								■																				
Directed Requirement Delivery Order 1 Production																												
Material Development Decision (MDD)												■																
Directed Requirement Order 1 Delivery																												
DR Initial Operational Test and Evaluation (IOT&E)																■												
Initial Operating Capability (IOC)																												
Program of Record (PoR) Contract Award																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
Directed Requirement (DR) Contract Award	3	2013	3	2013
Directed Requirement Delivery Order 1 Production	3	2013	1	2015
Material Development Decision (MDD)	4	2013	4	2013
Directed Requirement Order 1 Delivery	2	2014	2	2015
DR Initial Operational Test and Evaluation (IOT&E)	3	2014	3	2014
Initial Operating Capability (IOC)	1	2015	1	2015
Program of Record (PoR) Contract Award	2	2015	2	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	7.400	5.694	4.839	-	4.839	7.238	2.411	1.367	1.390	Continuing	Continuing
B41: <i>CI/HUMINT Software Products (MIP)</i>	-	0.102	1.319	2.165	-	2.165	1.710	1.327	1.367	1.390	Continuing	Continuing
B51: <i>Machine - Foreign Language Translation System</i>	-	7.298	4.375	2.674	-	2.674	5.528	1.084	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY14: \$1.410M Increase in B51 aligned funds with the current stage of the MFLTS program acquisition lifecycle.
 \$0.940M Increase in B41 aligned funds with the current stage of the CHARCS program acquisition lifecycle.

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 (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 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).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>
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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).

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	7.405	5.694	2.489	-	2.489
Current President's Budget	7.400	5.694	4.839	-	4.839
Total Adjustments	-0.005	0.000	2.350	-	2.350
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.005	-	2.350	-	2.350

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
B41: <i>CI/HUMINT Software Products (MIP)</i>	-	0.102	1.319	2.165	-	2.165	1.710	1.327	1.367	1.390	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 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).

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.

FY2014 Base amount of \$2.165 million will fund the CHARCS software increased performance, service packs, Information Assurance & Vulnerability Assessment (IAVA) and Defense Intelligence Agency (DIA) security updates and compliance.

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

	FY 2012	FY 2013	FY 2014
Title: RDTE: Continue security and accreditation, increased software performance and hardware integration testing of CHARCS software.	0.102 0	1.319 0	2.165

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p align="right"><i>Articles:</i></p> <p>Description: Funds software testing, development and maintenance, and systems testing.</p> <p>FY 2012 Accomplishments: \$.102 million funded additional tests of the CHARCS V1.4 baseline software, increased software performance, service packs, IAVA and DIA security updates and compliance.</p> <p>FY 2013 Plans: FY2013 Base amount of \$1.319 million funds additional tests of the CHARCS V1.4 baseline software, increased software performance, CHARCS web-based capability, service packs, IAVA and DIA security updates and compliance.</p> <p>FY 2014 Plans: FY2014 Base amount of \$2.165 million will fund development and testing of CHARCS software increased performance service packs, IAVA and DIA security updates and compliance.</p>			
Accomplishments/Planned Programs Subtotals	0.102	1.319	2.165

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• CI HUMINT AUTO REPRTING AND COLL (C: BK5275	3.493	7.077	6.169		6.169	7.392	7.604	7.782	7.914	Continuing	Continuing

Remarks

D. Acquisition Strategy

Program capability documentation was updated to include Capabilities Development Document (CDD) Increment 2 requirements in CHARCS Capabilities Production Document (CPD) Increment 1, Revision 1, which was signed 6 September 2012. CHARCS is a post-Milestone C program. Product Director (PD) CHARCS is leveraging SEC CECOM and RDEC software engineering services to increase current capabilities and provide a web-enabled version of the CHARCS software. PD CHARCS will utilize competitively-awarded Task and Delivery Orders on Indefinite Deliverable, Indefinite Quantity contract vehicles to procure hardware and provide services. CHARCS software requires development to keep pace with evolving capability requirements, Defense Intelligence Agency and Information Assurance & Vulnerability Assessment (IAVA) compliance, and to meet JROC approved requirements documented in the CHARCS CPD Increment 1, Revision 1. PD is continuously evaluating and assessing existing Commercial-off-the-shelf (COTS), Government-off-the-shelf (GOTS), and Quick Reaction Capabilities (QRC) that support CHARCS CPD Increment 1, Revision 1.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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		0.000		0.000		0.000		0.000	0.000	3.790	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CHARCS Software Development	MIPR	CECOM Software Engineering Center:Various Locations	14.988	-		1.219	Sep 2012	-		-		-	Continuing	Continuing	Continuing
CHARCS Software Management/Development	MIPR	TBD:TBD	0.000	-		-		1.045	Oct 2013	-		1.045	Continuing	Continuing	Continuing
CHARC Software Development	MIPR	US Army:TBD	0.000	-		-		0.520	Oct 2013	-		0.520	Continuing	Continuing	Continuing
DOMEX Tools	MIPR	National Ground Intelligence Center:Charlottesville, VA	8.100	-		-		-		-		-	0.000	8.100	0.000
Subtotal			23.088	0.000		1.219		1.565		0.000		1.565			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Acquisition and Engineering Services-Program Office Support	MIPR	CACI Technologies, Inc.:Chantilly, VA	0.857	-		-		-		-		-	Continuing	Continuing	0.000
Subtotal			0.857	0.000		0.000		0.000		0.000		0.000			0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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)																												
CHARCS Interoperability Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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	2013	2	2013
CHARCS Interoperability Testing	2	2013	2	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>Machine - Foreign Language Translation System</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
B51: <i>Machine - Foreign Language Translation System</i>	-	7.298	4.375	2.674	-	2.674	5.528	1.084	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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).

FY14 Base RDTE dollars in the amount of \$2.674 million supports the Engineering and Manufacturing Development (EMD) Phase providing deployable automated translation software.

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

	FY 2012	FY 2013	FY 2014
Title: Product Development and Engineering	6.019	2.308	1.481
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 2012 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 2013 Plans: Continuing development and integration of Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software			
FY 2014 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>Machine - Foreign Language Translation System</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>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</p> <p>Title: Test and Evaluation of MFLTS Capabilities</p> <p align="right">Articles:</p> <p>Description: Testing of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process</p> <p>FY 2012 Accomplishments: Tested the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process</p> <p>FY 2013 Plans: Testing of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process</p>	0.100 0	0.881 0	0.000
<p>Title: PD Support and Management Services</p> <p align="right">Articles:</p> <p>Description: Program Support and Matrixed services at other Government activities</p> <p>FY 2012 Accomplishments: Continued to provide program support and matrixed services at other Government activities</p> <p>FY 2013 Plans: Continuing to provide program support and matrixed services at other Government activities</p> <p>FY 2014 Plans: Will continue to provide program support and matrixed services at other Government activities</p>	1.179 0	1.186 0	1.193
Accomplishments/Planned Programs Subtotals			
	7.298	4.375	2.674

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>						
• Machine Foreign Language Tran: B88605			2.924		2.924	2.997				0.000	5.921

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>Machine - Foreign Language Translation System</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

D. Acquisition Strategy

The MFLTS Technology Development (TD) Phase developed an open software architecture prototype using full and open competition that allowed 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. Following a Milestone C decision, a full and open competition production contract will be issued to integrate and field the latest MFLTS 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 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT							
2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)				PE 0604321A: ALL SOURCE ANALYSIS SYSTEM				B51: Machine - Foreign Language Translation System							
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	1.179	Dec 2011	1.186		1.193	Jan 2014	-		1.193	Continuing	Continuing	0.000
Subtotal			1.171	1.179		1.186		1.193		0.000		1.193			0.000
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	Feb 2012	-		-		-		-	0.000	12.000	0.000
Engineering Development	MIPR	Various:Various	0.000	-		1.718		0.877	Feb 2014	-		0.877	Continuing	Continuing	0.000
Subtotal			6.554	5.446		1.718		0.877		0.000		0.877			0.000
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.573	Dec 2011	0.590		0.604	Jun 2014	-		0.604	Continuing	Continuing	0.000
Subtotal			2.062	0.573		0.590		0.604		0.000		0.604			0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	0.100	May 2012	0.881		-		-		-	Continuing	Continuing	0.000
Data Collection	MIPR	Army Research Laboratory:Adelphi, MD	0.308	-		-		-		-		-	0.000	0.308	0.000
Subtotal			0.308	0.100		0.881		0.000		0.000		0.000			0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>				PROJECT B51: <i>Machine - Foreign Language Translation System</i>			
	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	10.095	7.298	4.375	2.674	0.000	2.674			0.000	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>Machine - Foreign Language Translation System</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Initial Capability - MS B							■																					
Initial Capability - EMD Phase							■	■	■	■	■	■																
Preliminary Design Review (PDR)							■																					
CDR								■																				
Initial Capability - Limited Deployment (LD)											■																	
EUT												■																
Initial Capability - MS C															■													
Production Contract Award															■													
OT																■												
Full Deployment Decision																				■								
IOC																								■				

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604321A: <i>ALL SOURCE ANALYSIS SYSTEM</i>	PROJECT B51: <i>Machine - Foreign Language Translation System</i>

Schedule Details

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604328A: <i>TRACTOR CAGE</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	23.535	32.095	23.841	-	23.841	20.771	26.591	19.039	19.680	Continuing	Continuing
C71: DC71	-	23.535	32.095	23.841	-	23.841	20.771	26.591	19.039	19.680	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

NA

B. Program Change Summary (\$ in Millions)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	26.552	32.095	25.630	-	25.630
Current President's Budget	23.535	32.095	23.841	-	23.841
Total Adjustments	-3.017	0.000	-1.789	-	-1.789
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-3.017	-	-1.789	-	-1.789

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	81.081	96.478	79.855	-	79.855	74.510	63.703	57.065	69.574	Continuing	Continuing
033: <i>ADV CREW SVC WPN</i>	-	1.472	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
S58: <i>Soldier Enhancement Program</i>	-	3.170	3.278	4.125	-	4.125	4.058	4.239	4.310	4.310	Continuing	Continuing
S60: <i>Clothing & Equipment</i>	-	6.119	5.537	5.450	-	5.450	4.563	3.683	6.065	10.965	Continuing	Continuing
S61: <i>Acis Engineering Development</i>	-	10.705	17.175	14.057	-	14.057	20.073	11.334	9.883	15.948	Continuing	Continuing
S62: <i>Counter-Defilade Target Engagement - SDD</i>	-	34.859	34.412	1.983	-	1.983	2.060	2.130	2.200	2.470	Continuing	Continuing
S63: <i>Small Arms Improvement</i>	-	17.759	19.617	18.201	-	18.201	14.479	14.494	14.608	14.691	Continuing	Continuing
S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>	-	0.173	0.000	14.864	-	14.864	15.000	15.000	10.000	12.191	Continuing	Continuing
S70: <i>Personnel Recovery Support System (PRSS)</i>	-	2.965	4.517	1.132	-	1.132	1.104	1.141	1.193	1.193	Continuing	Continuing
VS5: <i>Soldier Protective Equipment</i>	-	3.859	11.942	20.043	-	20.043	13.173	11.682	8.806	7.806	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Change Summary Explanation:

Fiscal Year 2012: Program decrease of \$2.314 million across all projects to higher priority Army efforts.

Fiscal Year 2014: Program increases of \$14.864 million to Project S64 for the Common Remotely Operated Weapon System, \$6.880 million to Project VS5 for Soldier Protective Equipment engineering development efforts and \$3.551 million to Project S60 for Clothing and Equipment development efforts. Program decreases of \$4.760 million to Project S61 for ACIS Engineering development efforts and \$0.088 million to Project S63 for Small Arms improvement efforts.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>
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A. Mission Description and Budget Item Justification

FY 2014 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) 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 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	83.395	96.478	59.408	-	59.408
Current President's Budget	81.081	96.478	79.855	-	79.855
Total Adjustments	-2.314	0.000	20.447	-	20.447
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-2.314	-	20.447	-	20.447

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
033: <i>ADV CREW SVC WPN</i>	-	1.472	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

Note
 Type Classification-Limited Production and Milestone C were achieved June 2012. The termination plan was approved by the Army Acquisition Executive on September 27, 2012. Termination activities are ongoing.

A. Mission Description and Budget Item Justification
 This project developed the Lightweight .50 Caliber Machine Gun which met the U.S. Army/SOCOM requirements for a Lightweight Enhanced .50 Caliber Machine Gun. The lightweight .50 Caliber machine gun system enables 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. The weapon system 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 2012	FY 2013	FY 2014
<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 2012 Accomplishments: Completed ILS technical documentation, conducted logistics demonstration and provisioning conference for the weapon. ILS technical documentation for both the Blank Ammunition Firing Adapter (BFA) and the cradle stopped due to program termination.</p>	0.200 0	0.000	0.000
<p>Title: Weapon System Design Test</p> <p align="right">Articles:</p> <p>Description: Description: Conduct weapon system design test.</p> <p>FY 2012 Accomplishments:</p>	1.272 0	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Completed Pre-Production Qualification Test to validate weapon design parameters and reliability. Completed Limited User Test to evaluate operational effectiveness of the XM806 weapon system. BFA design and build completed but testing stopped due to program termination.			
Accomplishments/Planned Programs Subtotals	1.472	0.000	0.000

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• G12800 Lightweight .50 Caliber MG: <i>Lightweight .50 Caliber Machine Gun (W&TCV G12800)</i>		25.183								0.000	25.183

Remarks

D. Acquisition Strategy
The Lightweight .50 Caliber Machine Gun was developed to meet the US Army Infantry Center (USAIC) Capability Production Document (CPD) for Enhanced .50 Caliber Machine Gun (M2A1). The development contractor was General Dynamics Armament and Technical Products (GDATP) of Williston, Vermont. Milestone C was approved by the Milestone Decision Authority (MDA) on June 19, 2012. The termination plan was approved by the Army Acquisition Executive on September 27, 2012. Termination activities are ongoing.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	MIPR	PM Soldier Weapons:Picatinny Arsenal, NJ	0.290	0.250	Jul 2012	-		-		-		-	Continuing	Continuing	Continuing
Travel	Various	PM Soldier Weapons:Picatinny Arsenal, NJ	0.063	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.353	0.250		0.000		0.000		0.000		0.000			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Primary Hardware	Various	Gen Dyn and Arm Tech Prod.;Burlington, VT	6.515	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			6.515	0.000		0.000		0.000		0.000		0.000			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development (Weapon and Mount)	MIPR	ARDEC:Picatinny Arsenal, NJ	2.102	1.222	Mar 2012	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			2.102	1.222		0.000		0.000		0.000		0.000			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Test/Limited User Test (DT/LUT)	Various	ATC:Aberdeen PG, MD	0.961	-		-		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S58: <i>Soldier Enhancement Program</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S58: <i>Soldier Enhancement Program</i>	-	3.170	3.278	4.125	-	4.125	4.058	4.239	4.310	4.310	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

The Soldier Enhancement Program (SEP) was established in accordance with Congressional language in the National Defense Authorization Act for Fiscal Year 1990 and 1991. The purpose of the SEP is to increase the combat effectiveness of our Soldiers through the test and evaluation of lighter, more lethal infantry weapons and improved equipment. The SEP uses a Buy, Try and Decide methodology to evaluate Commercial Off The Shelf (COTS), Government Off The Shelf (GOTS) and Non-Developmental Items (NDI) that have the potential to enhance Soldier combat effectiveness. The SEP provides accelerated integration, modernization, and capability enhancement efforts of lighter, more lethal weapons and munitions; improved engagement optics; sights, lasers and fire controls; improved lighter more comfortable and versatile Soldier individual equipment; survivability enhancement gear; communications equipment and situational awareness aids. Initiatives are submitted by Soldiers and others via the SEP submission web application and are evaluated twice a year.

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

Title: Soldier Enhancement Program (SEP).	FY 2012	FY 2013	FY 2014
	2.851	2.819	3.666
Articles:	0	0	
Description: Evaluate COTS/GOTS/NDI items with potential to enhance Soldier combat effectiveness.			
FY 2012 Accomplishments: On 18 May the SEP council approved 15 initiatives for evaluation with several others approved after the council meeting. These included Soldier Worn Integrated Power Equipment System (SWIPES), Soldier Power Manager (SPM), Modular Universal Battery Charger (MUBC), JP-8 Generator Set, M320 Grenade Launcher Holster, Squad Common Optic, Ice Cleats, Machine Gun Holographic Sight, Binocular Night Vision Device, general purpose lights, clip on thermal imager, Drop Zone Assembly Navigational Aid, Bunker Defeat Munitions Extended Range Sight, Tactical Communications and Protective System (TCAPS) and others.			
FY 2013 Plans: On 23 October the SEP council approved 6 initiatives for evaluation. These include Quick Release Mount, Thermal Weapon Sight clip-on adapter, Mortarmen Carrying Backpack, All purpose Adhesive light, Radio Super-capacitor adapter, and Hands Free Heads up display. These items are currently undergoing purchase and evaluation. Product evaluations will include safety testing			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p>and confirmation (if needed), purchase of up to a Brigade Combat Team quantity of hardware, and collection and analysis of user feedback/results. Since the last SEP Council over 50 proposals were submitted for consideration. These included stabilized binoculars, machine gun optic recoil rails, machine gun accessory bags, mandible protector for crew personnel, helmet retention system, aviation life support equipment tester, 40mm extended Range munitions, and others. These proposals were screened using the SEP Criteria (COTS/GOTS/NDI, Soldier Worn/Carried) by the SEP Council to determine which proposals merit further evaluation as new SEP initiatives. Product evaluations included safety testing and confirmation (as needed), purchase of up to a Brigade Combat Team quantity of hardware, and collection and analysis of user feedback/results.</p> <p>FY 2014 Plans: Anticipate over 100 proposals to be submitted. Those proposals that meet the SEP criteria will be considered by the SEP council for evaluation as new initiatives. Product evaluations will include safety testing and confirmation (if needed), purchase of up to a Brigade Combat Team quantity of hardware, and collection and analysis of user feedback/results. Anticipate approving and evaluating 21 initiatives.</p> <p>Title: Systems Engineering and Program Management.</p> <p>Description: Systems Engineering and Program Management.</p> <p>FY 2012 Accomplishments: Provided technical evaluation of incoming SEP proposals received via the SEP submission web application. New proposals were screened to ensure that they met the basic SEP criteria of being COTS/GOTS/NDI that are worn or carried by Soldiers, as well as meeting user capability needs. Coordination with proponent schools and acquiring activities was conducted to support the May 2012 SEP Council meeting and post-SEP council product evaluations. Monitored prior year initiative execution such as the Modular Weapons Case, 5.56mm Dim Tracer, Army Emergency Bailout Parachute, AN/PEQ-16B Light Emitting Diode Mini-Integrated Illuminator Module and others to ensure adequate resourcing for completion and closeout.</p> <p>FY 2013 Plans: The SEP team monitors incoming proposals submitted via the SEP web application. To date proposals received include stabilized binoculars, machine guns optic recoil rails, machine gun accessory bags, mandible protector for crew personnel, helmet retention system, aviation life support equipment tester, 40mm extended Range munitions, and others. The SEP team coordinates with industry and the field to ensure that proposals submitted satisfy user needs and that the materiel alternatives are COTS/GTS/NDI solutions that can be readily purchased and evaluated. The SEP team performs analysis of incoming proposals in preparation for the FY13 SEP Council meetings to determine which proposals will be evaluated as SEP initiatives. Initiatives completing evaluations received recommendations to either transition the capability to the field or terminate the effort. The SEP team</p>				
		0.319 0	0.459 0	0.459
		Articles:		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
conducts coordination with proponent schools as part of the proposal screening process to ensure that SEP initiative evaluations inform the requirements process.			
<i>FY 2014 Plans:</i> The SEP team will monitor incoming proposals that are submitted via the SEP web application. Additionally, coordination will be performed with industry and the field to ensure that proposals submitted can satisfy user needs and that the materiel alternatives are COTS/GOTS/NDI solutions that can be readily purchased and evaluated. Analysis of incoming proposals will be performed in preparation for the FY14 SEP Council meetings to determine which proposals will be evaluated as SEP initiatives. Ongoing initiatives completing evaluations will receive recommendations as to whether the capability should transition to become an eventual fielded capability or the effort should be terminated. Coordination with proponent schools will also be conducted as part of the proposal screening process as well as to help ensure that SEP initiative evaluations inform the requirements process.			
Accomplishments/Planned Programs Subtotals	3.170	3.278	4.125

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPA3 MA6800: <i>Soldier Enhancement - Other Support Equipment - MA6800</i>	1.421	1.444	1.468		1.468	1.698	0.324	0.330	0.500	Continuing	Continuing
• OPA2 BA5300: <i>Soldier Enhancement - Comms & Electronics Equipment - BA5300</i>	1.843	1.843	1.030		1.030	2.223	2.141	1.893	2.000	Continuing	Continuing
• WTCV GC0076: <i>Soldier Enhancement - Small Arms Weapons - GC0076</i>	2.453	2.378	1.267		1.267	3.173	3.016	2.572	2.800	Continuing	Continuing

Remarks

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 limited 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 Weapons and Tracked Combat Vehicles (WTCV).

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
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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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	11.146	0.319	Dec 2011	0.459	Mar 2013	0.459	Mar 2014	-		0.459	Continuing	Continuing	Continuing
Subtotal			11.146	0.319		0.459		0.459		0.000		0.459			

Remarks
Systems Engineering and Program Management includes in-house engineering support and integration services, conducting technical evaluations, market research and program reviews.

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	35.887	1.911	Dec 2011	1.879	Jun 2013	2.484	Jun 2014	-		2.484	Continuing	Continuing	Continuing
Subtotal			35.887	1.911		1.879		2.484		0.000		2.484			

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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	6.424	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			6.424	0.000		0.000		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various	MIPR	PEO Soldier:Ft. Belvoir, VA	11.806	0.940	Dec 2011	0.940	Aug 2013	1.182	Aug 2014	-		1.182	Continuing	Continuing	Continuing
Subtotal			11.806	0.940		0.940		1.182		0.000		1.182			

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

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.263	3.170	3.278	4.125	0.000	4.125			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
SEP council proposal approval/prioritization 3Q FY12			■																									
SEP council proposal approval/prioritization 1Q FY13							■																					
Purchase and Test approved proposals 1-2Q FY13							■	■																				
SEP council proposal approval/prioritization 3Q FY13											■																	
Purchase and Test approved proposals 3-4Q FY13							■	■	■	■																		
SEP council proposal approval/prioritization 4QFY13											■																	
Purchase and Test approved proposals 1-2Q FY14											■	■	■	■														
SEP council proposal approval/prioritization 3Q FY14															■													
Purchase and Test approved proposals 3-4Q FY14											■	■	■	■														
SEP council proposal approval/prioritization 4QFY14															■													
Purchase and Test approved proposals 1-2Q FY15											■	■	■	■														
SEP council proposal approval/prioritization 3Q FY15															■													
Purchase and Test approved proposals 3-4Q FY15											■	■	■	■														
SEP council proposal approval/prioritization 4QFY15																			■									

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Purchase and Test approved proposals 1-2Q FY16																												
SEP council proposal approval/prioritization 3Q FY16																												
Purchase and Test approved proposals 3-4Q FY16																												
SEP council proposal approval/prioritization 4QFY16																												
Purchase and Test approved proposals 1-2Q FY17																												
SEP council proposal approval/prioritization 3Q FY17																												
Purchase and Test approved proposals 3-4Q FY17																												
SEP council proposal approval/prioritization 4QFY17																												
Purchase and Test approved proposals 1-2Q FY18																												
SEP council proposal approval/prioritization 3Q FY18																												
Purchase and Test approved proposals 3-4Q FY18																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S58: <i>Soldier Enhancement Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SEP council proposal approval/prioritization 3Q FY12	3	2012	3	2012
SEP council proposal approval/prioritization 1Q FY13	1	2013	1	2013
Purchase and Test approved proposals 1-2Q FY13	1	2013	2	2013
SEP council proposal approval/prioritization 3Q FY13	3	2013	3	2013
Purchase and Test approved proposals 3-4Q FY13	3	2013	1	2014
SEP council proposal approval/prioritization 4QFY13	4	2013	4	2013
Purchase and Test approved proposals 1-2Q FY14	4	2013	2	2014
SEP council proposal approval/prioritization 3Q FY14	3	2014	3	2014
Purchase and Test approved proposals 3-4Q FY14	3	2014	1	2015
SEP council proposal approval/prioritization 4QFY14	4	2014	4	2014
Purchase and Test approved proposals 1-2Q FY15	4	2014	2	2015
SEP council proposal approval/prioritization 3Q FY15	3	2015	3	2015
Purchase and Test approved proposals 3-4Q FY15	3	2015	1	2016
SEP council proposal approval/prioritization 4QFY15	1	2016	1	2016
Purchase and Test approved proposals 1-2Q FY16	1	2016	2	2016
SEP council proposal approval/prioritization 3Q FY16	3	2016	3	2016
Purchase and Test approved proposals 3-4Q FY16	3	2016	1	2017
SEP council proposal approval/prioritization 4QFY16	4	2016	4	2016
Purchase and Test approved proposals 1-2Q FY17	4	2016	2	2017
SEP council proposal approval/prioritization 3Q FY17	3	2017	3	2017
Purchase and Test approved proposals 3-4Q FY17	3	2017	1	2018
SEP council proposal approval/prioritization 4QFY17	4	2017	4	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Events	Start		End	
	Quarter	Year	Quarter	Year
Purchase and Test approved proposals 1-2Q FY18	4	2017	2	2018
SEP council proposal approval/prioritization 3Q FY18	3	2018	3	2018
Purchase and Test approved proposals 3-4Q FY18	3	2018	4	2018

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S60: <i>Clothing & Equipment</i>	-	6.119	5.537	5.450	-	5.450	4.563	3.683	6.065	10.965	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 survivability, mobility and quality of life of the individual Soldier. It funds system integration and formal Developmental Testing/Operational Testing of preproduction and production representative systems leveraging advancements in materials, 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 2012	FY 2013	FY 2014
Title: Soldier Uniforms and Clothing	3.134	3.537	3.659
Articles:	0	0	
Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment.			
FY 2012 Accomplishments: Environmental Clothing and Equipment. Conducted user evaluation for Extended Cold Weather Clothing System (ECWCS) Generation (GEN) III product improvement to incorporate flame resistant (FR) capabilities. Developed Memorandum of Agreement (MOA) with Users on Flame Resistant Environmental Ensemble (FREE) requirements, conducted final pattern prove out of Program of Record material solution and obtained Milestone C decision. Conducted user evaluation of the Hot Weather Mountain Combat Boot. Downselected Program of Record Mountain Combat Boot.			
FY 2013 Plans: Environmental Clothing and Equipment: Environmental Clothing and Equipment. Will conduct efforts to improve components of the Extended Cold Weather Clothing System (ECWCS) to provide protection to Military Free Fall (MFF) parachutists due to increased altitudes and duration of MFF flights. Test alternate flame resistant fabrics for use in ECWCS Layer 5.			
Flame Resistant Clothing. Will complete technical development of printing and color shade standards required for all uniform fabrics and findings to potentially implement a family of camouflage patterns to replace the current Universal Camouflage Pattern.			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>		PROJECT S60: <i>Clothing & Equipment</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Will complete testing to support transition of Rapid Fielding Initiative Army Combat Pant (ACP) and Army Combat Shirt (ACS) to Programs of Record. Will test improvements to Army Aircrew Combat Uniform (A2CU) to include collar height to clear skin gap, replacing velcro on pockets to eliminate foreign objects/debris hazards. Evaluating A2CU female variant.</p> <p>Clothing Bag. Will continue to refine designs and incorporate new materials into the clothing bag, including the Army Service Uniform (ASU), following results of the FY12/13 web survey. Conduct user evaluation of the Improved Physical Fitness Uniform (IPFU) ensemble. Will initiate development of an improved garrison Food Service Uniform that incorporates commercial standards for burn protection, stain resistance and professional appearance.</p> <p>FY 2014 Plans: Environmental Clothing and Equipment. Conduct market survey, technical testing, procure prototypes and user evaluation garments, conduct user evaluation, conduct Cold Chamber tests, and procure user evaluation items for the Intermediate Cold Wet Boot (ICWB) to resolve sole traction concerns at the lower end of its performance range to prevent slippage. Finalize production specifications for the Mountain Combat Boot, Hot Weather and Temperate Weather variants.</p> <p>Flame Resistant Clothing. Will conduct market survey, technical testing, procure prototypes and user evaluation garments, conduct user evaluation, conduct Pyroman burn tests, and develop patterns for the Enhanced Combat Vehicle Crewmember Coveralls (eCVC). Will conduct market survey, technical testing, procure prototypes and user evaluation garments, conduct user evaluation, conduct Pyroman burn tests, and develop patterns for the Army Aircrew Combat Uniform–Alternate (A2CU-A); and transfer to sustainment in 4Q FY14. Optimize performance of selected Phase IV camouflage family across Near Infrared spectrum.</p> <p>Clothing Bag. Will continue to refine designs and incorporate new materials and designs into clothing bag items. Will finalize patterns and Technical Data Package for the next Generation Physical Fitness Uniform providing improved fit, moisture wicking and antimicrobial capabilities. Will develop patterns, obtain fit test of Army Service Uniform (ASU) garments and conduct fit test to address women's concerns in fit and function of the ASU. Will procure prototypes garments of the Garrison Food Service Uniform. Conduct technical testing and user evaluation that incorporates commercial standards for burn protection, stain resistance and professional appearance.</p>				
<p>Title: Individual Equipment</p> <p align="right">Articles:</p> <p>Description: Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment.</p> <p>FY 2012 Accomplishments:</p>		2.985 0	2.000 0	1.791

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Load Carriage/NBC/Hydration. Conducted limited user evaluation of Modular Lightweight Load-carrying Equipment (MOLLE) components, including improved medic set, various pouches, and hydration carrier, for transition to sustainment in 3Q FY13. Completed a Family of Camouflage testing for use on Organizational Clothing and Individual Equipment.</p> <p>Personnel Airdrop. Completed developmental testing of the Advanced RAM Air Parachute System (ARAPS).</p> <p>FY 2013 Plans: Load Carriage/NBC/Hydration. 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 complete technical development of the Army Mountaineering Kit (AMK) with MS C planned for 3Q FY13. Will conduct limited user evaluation of Improved MOLLE medic bag with incorporated changes for user community and plan to transition to sustainment in 3Q FY13. Will complete technical development of the Individual Water treatment Device (Phase I, Filtration) with transition with MS C in 1Q FY14.</p> <p>Personnel Airdrop. Will conduct testing to evaluate the minimum opening altitude for the Advanced Emergency Bailout Parachute. Will Complete Operational Testing (OT) of the Military Free Fall (MFF) Advanced Ram Air Parachute (ARAPS), which significantly increase MFF altitude and flight duration, increasing range of MFF operations achieve MS C in 1Q FY14.</p> <p>FY 2014 Plans: Load Carriage/NBC/Hydration. Will continue to refine design and incorporate new material/technology that pertain to form, fit, and function of load bearing equipment with intent to lighten the load. Will conduct market survey, conduct technical testing, and procure prototypes and conduct limited user evaluation of the Airborne Medium Rucksack to provide a riggable rucksack to enhance the mobility of all airborne Soldiers immediately upon landing on drop zones.</p> <p>Personnel Airdrop. Will develop and test alternate solutions to improve reliability of the curve pin used on T-11 and MC-6 parachutes to hold the parachute into pack tray assembly. Will procure assets and conduct Developmental testing (DT) and down select the Parachutist Navigational System (PARANAVSYS) which provides Global Positioning System (GPS) navigation capability to MFF Parachutists. Will procure DT assets and conduct DT on MC-6 Control Lines to improve durability and reduce control line breakages under High Performance turns by MFF Parachutists.</p>				
Accomplishments/Planned Programs Subtotals		6.119	5.537	5.450

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Clothing and Individual Eqp S53: <i>RDTE, 0603827.S53, Clothing and Equipment</i>	11.307	7.189	5.637		5.637	7.836	5.548	5.096	7.153	Continuing	Continuing
• Central Funding and Fielding: <i>OMA, 121017, Central Funding and Fielding</i>	67.248	73.639	103.484		103.484	161.773	165.014	217.679	205.582	Continuing	Continuing
• Advanced Tactical Parachute System: <i>OPA, MA7801, Advanced Tactical Parachute System</i>	52.185	46.130	46.650		46.650	44.939	42.656	40.859	12.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

Acquisition strategies for these programs vary in methods to include the following: (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 2014 Army **DATE:** April 2013

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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
In-House Support	Various	PM SPIE:Various	6.825	0.750		0.478		0.400		-		0.400	Continuing	Continuing	Continuing
Subtotal			6.825	0.750		0.478		0.400		0.000		0.400			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Support	Various	NSRDEC:Natick, MA	12.169	0.878		1.000		1.000		-		1.000	Continuing	Continuing	Continuing
Development Contracts	Various	Various:Various	34.814	2.098		2.000		2.000		-		2.000	Continuing	Continuing	Continuing
Subtotal			46.983	2.976		3.000		3.000		0.000		3.000			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Misc Support Costs	Various	Various:Various	13.723	0.973		0.859		0.850		-		0.850	Continuing	Continuing	Continuing
Subtotal			13.723	0.973		0.859		0.850		0.000		0.850			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Testing	Various	Various:Various	13.638	1.420		1.200		1.200		-		1.200	Continuing	Continuing	Continuing
Subtotal			13.638	1.420		1.200		1.200		0.000		1.200			

			All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			81.169	6.119	5.537	5.450	0.000	5.450			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S60: <i>Clothing & Equipment</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Camo Decision								■																				
Transition FREE to Production			■																									
Garrison Food Service Uniform Improvements												■																
Garrison Food Service Uniform Milestone C																				■								
Transition A2CU improvements to DLA Troop Support															■													
Mountain Combat Boot MS C & transition to sustainment												■																
Military Free Fall Environmental Protection Improvements																												■
ARAPS DV Testing			■																									
ARAPS Operational Testing							■																					
ARAPS MS-C												■																
MOLLE Upgrades							■																					
Mountaineering Kit User Eval							■																					
Mountaineering Kit MS-C								■																				
Improved Medic Bag Transition to DLA Troop Support								■																				
Next Gen MOLLE												■																
IWTD Incr I Tech Development							■																					
IWTD Incr 1 Milestone C												■																
IWTD II Product Prove Out																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
Camo Decision	3	2013	3	2013
Transition FREE to Production	3	2012	3	2012
Garrison Food Service Uniform Improvements	1	2014	4	2015
Garrison Food Service Uniform Milestone C	1	2016	1	2016
Transition A2CU improvements to DLA Troop Support	3	2015	3	2015
Mountain Combat Boot MS C & transition to sustainment	2	2014	2	2014
Military Free Fall Environmental Protection Improvements	1	2017	4	2018
ARAPS DV Testing	2	2012	4	2012
ARAPS Operational Testing	1	2013	3	2013
ARAPS MS-C	1	2014	1	2014
MOLLE Upgrades	1	2013	4	2013
Mountaineering Kit User Eval	1	2013	3	2013
Mountaineering Kit MS-C	3	2013	3	2013
Improved Medic Bag Transition to DLA Troop Support	3	2013	3	2013
Next Gen MOLLE	1	2014	2	2015
IWTD Incr I Tech Development	1	2013	4	2013
IWTD Incr 1 Milestone C	1	2014	1	2014
IWTD II Product Prove Out	1	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S61: <i>Acis Engineering Development</i>	-	10.705	17.175	14.057	-	14.057	20.073	11.334	9.883	15.948	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project conducts Engineering and Manufacturing Development (EMD) for improved Army aircrew safety, survivability, and human performance capabilities. These funds 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; provide modern heads-up display technologies that increase the Soldier's ability to operate safely in degraded visual environments; and provide the capability to perform missions up to 11.0 hours in extreme environmental and 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 System 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 2012	FY 2013	FY 2014
Title: Aircrew Integrated Systems (ACIS) Engineering Development	10.705	17.175	14.057
Articles:	0	0	
Description: Integration, evaluation, testing, and qualification of Air Soldier System multi-phased capabilities as technologies mature.			
FY 2012 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continued development of initial Air SS sub-increment 1a capabilities including the integration and evaluation of improved cooling and integrated Soldier and power data system. Began head tracking, Soldier display, aircraft-mounted mission display, Soldier computer module integration and evaluation, integrated layered clothing system, and aircraft integration. Primary activities included the finalization of subsystem and component specifications and interface control documents, manufacture and evaluation of early design prototypes, and the development and delivery of initial technical and logistics documentation.			
FY 2013 Plans: Continues 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. Primary activities include completion of detail design, manufacture of production representative prototypes and laboratory qualification test activities.			
FY 2014 Plans: Will develop Air Soldier System sub increment 1b capabilities and will complete development of Air Soldier System sub increment 1a capabilities including the manufacture and delivery of additional production representative prototypes, completion of system level qualification activities, and the final delivery of technical, programmatic, and logistics support documentation. System level tests will include the formal developmental and operational flight test activities and formal logistics/maintenance demonstrations.			
Accomplishments/Planned Programs Subtotals	10.705	17.175	14.057

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Aircrew Integrated Sys Adv Dev: <i>RDTE, A PE 0603827A, PROJ S51</i> <i>- Adv Dev</i>	0.150	0.141	0.164		0.164	0.164	0.157	0.160	2.157	Continuing	Continuing
• Aircrew Integrated Systems: <i>Aircraft Procurement, Army SSN</i> <i>AZ3110 - ACIS</i>	62.746	77.381	45.841		45.841	16.347	14.080	0.008	2.920	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Engineering and Manufacturing Development (EMD) phase efforts for the Aircrew Integrated Systems program includes integration, evaluation, testing, and qualification of select Air Soldier System subsystems and components as technologies mature. 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

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army DATE: April 2013

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

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, and enhanced laser eye protection against multiple wavelengths of laser threats will be integrated 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. Contracts with industry include competed CPFF and FFP designed to appropriately share risk between industry and the government.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM Administration	Allot	Various Government:Huntsville, Alabama	1.503	0.359		0.278		0.712		-		0.712	Continuing	Continuing	Continuing
Subtotal			1.503	0.359		0.278		0.712		0.000		0.712			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Warrior and Air Soldier System Development	C/TBD	Various Government:Various Locations	29.983	9.399		14.329		9.967		-		9.967	Continuing	Continuing	Continuing
Subtotal			29.983	9.399		14.329		9.967		0.000		9.967			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Matrix Support	RO	Various Government:Various Locations	1.137	0.947		0.754		0.626		-		0.626	Continuing	Continuing	Continuing
Subtotal			1.137	0.947		0.754		0.626		0.000		0.626			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental and Operational Testing	RO	Various Activities:Various Locations	6.035	-		1.814		2.752		-		2.752	Continuing	Continuing	Continuing
Subtotal			6.035	0.000		1.814		2.752		0.000		2.752			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013						
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>			PROJECT S61: <i>Acis Engineering Development</i>						
	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	38.658	10.705		17.175		14.057		0.000		14.057			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S61: <i>Acis Engineering Development</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Air SS Prelim Design Review (PDR), Sub-increment 1a				■																								
Air SS Critical Design Review (CDR), Sub-increment 1a								■																				
Air SS Developmental Testing (DT), Sub-increment 1a												■																
Air SS Operational Test (OT), Sub-increment 1a												■																
Air SS Milestone C/Full Rate Product (FRP), Sub-increment 1a												■																
Air SS Prelim Design Review (PDR), Sub-increment 1b																■												
Air SS Critical Design Review (CDR), Sub-increment 1b																■												
Air SS Develop Testing Sub-increment 1b																■												
Air SS Milestone C/Low Rate Initial Product, Sub-increment 1b																				■								
Air SS Initial Operat Test & Eval, Sub-increment 1b																								■				

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 SS Prelim Design Review (PDR), Sub-increment 1a	1	2013	1	2013
Air SS Critical Design Review (CDR), Sub-increment 1a	4	2013	4	2013
Air SS Developmental Testing (DT), Sub-increment 1a	2	2014	2	2014
Air SS Operational Test (OT), Sub-increment 1a	2	2014	3	2014
Air SS Milestone C/Full Rate Product (FRP), Sub-increment 1a	3	2014	3	2014
Air SS Prelim Design Review (PDR), Sub-increment 1b	1	2015	1	2015
Air SS Critical Design Review (CDR), Sub-increment 1b	3	2015	3	2015
Air SS Develop Testing Sub-increment 1b	4	2015	1	2016
Air SS Milestone C/Low Rate Initial Product, Sub-increment 1b	3	2016	3	2016
Air SS Initial Operat Test & Eval, Sub-increment 1b	1	2017	3	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S62: <i>Counter-Defilade Target Engagement - SDD</i>	-	34.859	34.412	1.983	-	1.983	2.060	2.130	2.200	2.470	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 (hidden) targets from 15-500m) is the XM25. The XM25 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 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, and internal display. The XM25 has a 500-meter point target range and a 700-meter area target range capable of defeating defilade targets.

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

	FY 2012	FY 2013	FY 2014
Title: Engineering and Manufacturing Development/Fabricate	26.769	23.120	0.000
Articles:	0	0	
Description: Description: Engineering Development and Fabrication			
FY 2012 Accomplishments: Completed producibility design improvements specific to weight reduction, reliability and survivability of the weapon system, ammunition, the weapon system battery, target acquisition/fire control (TA/FC), and the ammunition magazine based on user feedback of the early prototypes in Afghanistan's Forward Operational Assessment (FOA) 1B. Initiated prototype manufacturing tooling. Built ten (10) weapon prototypes to support contractor weapon system assessments and verification testing. Initiated build of twenty-five (25) additional weapon prototypes for government qualification testing. Finalized weapon system design for Critical Design Review (CDR).			
FY 2013 Plans: Fabricate and integrate design enhancements to the weapons system and subsystems, target acquisition/fire control (TA/FC) and ammunition identified through contractor subsystem testing and the Forward Operational Assessment (FOA). Assemble prototype			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>		PROJECT S62: <i>Counter-Defilade Target Engagement - SDD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
systems to include weapon, TA/FC and ammunition for additional government testing. Complete build of thirty-six (36) weapon system for the second Forward Operational Assessment (FOA) 2.				
Title: Engineering and Training Development		2.300	2.500	0.100
		Articles: 0	0	
Description: Description: Engineering and Training Development				
FY 2012 Accomplishments: Provided engineering support required for producibility design improvements specific to reliability and survivability of the weapon system battery, ammunition, target acquisition/fire control (TA/FC) and ammunition magazine. Engineering support was necessary for all testing to meet Army performance objectives. Prepared documentation to perform technical design, performance and safety reviews.				
FY 2013 Plans: 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 verification reviews, and production readiness review to update system engineering master plans and integrate technical design efforts. Conduct training efforts for Limited User Test (LUT). Development of new equipment training (NET) and training materials.				
FY 2014 Plans: Will continue to provide engineering support for engineering changes and pre-planned product improvements to the weapon system.				
Title: Development / Operational Test and Evaluation Activities		5.481	8.000	1.633
		Articles: 0	0	
Description: Description: Test and Evaluate				
FY 2012 Accomplishments: Contractor conducted weapon system and subsystem performance testing for reliability, simulated natural environments (hot, cold, sand, and rain), electromagnetic environmental effects (E3) testing, human factors and rough handling tests. Weapon also sustained various prequalification testing. The target acquisition/fire control (TA/FC) and all ammunition variants completed developmental and safety testing and evaluation.				
FY 2013 Plans: Conduct Government and contractor test efforts of weapon system including the target acquisition/fire control (TA/FC) and ammunition that include the following: Enhancements to address safety risks, Pre-Production Qualification tests, Electromagnetic				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Environmental Effects (E3) testing, Simulated Natural Environment Test, Limited User Testing (LUT). Plan, coordinate, and resource Initial Operational Test and Evaluation (IOT&E) and Live Fire Test and Evaluation (LFT&E).			
FY 2014 Plans: Will continue to conduct Government test efforts to evaluate engineering changes and pre-planned product improvements to the weapons system.			
Title: Program Management	0.309	0.792	0.250
Articles:	0	0	
Description: Description: Program Management			
FY 2012 Accomplishments: The Program Management office provided oversight of all engineering support and test activities throughout the fiscal year. Managed the life cycle mission of the program to include future acquisition and sustainment plans. Provided oversight of design improvements, weapon system assessments, developmental, verification and prequalification testing. Prepared documentation to perform technical design, performance and safety reviews.			
FY 2013 Plans: Continue Program Management oversight to achieve Milestone C and transition to Low Rate Initial Production (LRIP).			
FY 2014 Plans: Will continue to provide Program Management oversight post Milestone C required to test and evaluate engineering changes and pre-planned product improvements to weapon system.			
Accomplishments/Planned Programs Subtotals	34.859	34.412	1.983

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• G16101: <i>(G16101) Integrated Air Burst Weapon System Family</i>		0.506	69.147		69.147	71.208	71.196	72.387	87.784	Continuing	Continuing
• E92500: <i>(E92500) CTG, 25MM, XM1083 High Explosive Air Burst (HEAB)</i>		4.506	8.801		8.801	14.392	31.108	31.663		0.000	90.470
• E92510: <i>(E92510) CTG, 24MM, XM1081 Target Practice (TP)</i>			1.500		1.500	1.500	1.500	1.500		0.000	6.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
Remarks											

D. Acquisition Strategy

The XM25 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 and verifies training solutions for the Milestone C approval in FY 2014. Research and Development acquisition strategy is to use sole source contracting with ATK (formerly known as Alliant Techsystems), Plymouth, MN. RDT&E initiatives will continue post Milestone C for engineering changes and pre-planned product improvements to include family of munitions and target acquisition/fire control development.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	Various	Performed by Government:Various Activities	1.906	0.309	Feb 2012	0.792	Feb 2013	0.250	Feb 2014	-		0.250	Continuing	Continuing	Continuing
Subtotal			1.906	0.309		0.792		0.250		0.000		0.250			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Design, Develop & Fabricate	SS/CPFF	ATK:Plymouth, MN	38.566	26.769	Feb 2012	23.120	Feb 2013	-		-		-	Continuing	Continuing	Continuing
Subtotal			38.566	26.769		23.120		0.000		0.000		0.000			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Support	Various	Various:Multiple	4.130	2.100	Feb 2012	2.300	Feb 2013	0.100	Feb 2014	-		0.100	Continuing	Continuing	Continuing
Training Development Support	MIPR	PEO STRI:PEO STRI	0.400	0.200	Feb 2012	0.200	Feb 2013	-		-		-	Continuing	Continuing	Continuing
Subtotal			4.530	2.300		2.500		0.100		0.000		0.100			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental/System Tests and Articles	SS/CPFF	Performed by Contractor:ATK, Plymouth, MN	14.854	-		-		-		-		-	0.000	14.854	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental/Operational Tests	Various	Performed by Government: Various Activities	0.000	5.481	Feb 2012	8.000	Feb 2013	1.633	Feb 2014	-		1.633	Continuing	Continuing	Continuing
Subtotal			14.854	5.481		8.000		1.633		0.000		1.633			

Remarks
 In FY 2014, funding will be used to continue target acquisition/fire control and family of munitions development and operational test efforts on engineering changes to weapon systems.

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	59.856	34.859	34.412	1.983	0.000	1.983			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Forward Operational Assessment (FOA) 2																												
MS C/Type Classification-Limited Procurement																												
Production Qualification Test (PQT)																												
Initial Operational Test & Evaluation (IOT&E)																												
Low Rate Initial Production (LRIP)																												
Type Classification - Standard																												
Full Rate Production (FRP)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
Forward Operational Assessment (FOA) 2	2	2013	3	2013
MS C/Type Classification-Limited Procurement	1	2014	2	2014
Production Qualification Test (PQT)	2	2014	2	2014
Initial Operational Test & Evaluation (IOT&E)	2	2014	1	2015
Low Rate Initial Production (LRIP)	1	2014	1	2015
Type Classification - Standard	1	2015	1	2015
Full Rate Production (FRP)	2	2015	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S63: <i>Small Arms Improvement</i>	-	17.759	19.617	18.201	-	18.201	14.479	14.494	14.608	14.691	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

New starts in FY 2014 include M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS), Squad Designated Marksman Rifle (SDM), Gain Twist Rifling, Powered Rail, Mounted Machine Gun Optic, Advanced Coatings, XM1116 12 Gauge Non-Lethal Extended Range and transitions Squad Common Optic and Integrated Fire Control for Small Arms from Advanced Component Development and Prototypes, Project S54, Program Element 0603827A Project S54.

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.

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

	FY 2012	FY 2013	FY 2014
Title: New Weapons	10.687	9.545	6.289
Articles:	0	0	
Description: Description: Development of new weapons			
FY 2012 Accomplishments: Individual Carbine Competition (ICC): Completed Phase I and initiated Phase II of competitive test and inspection program. Conducted scoring conferences of test data for source selection process. Precision Sniper Rifle (PSR): Evaluated PSR acquisition options and strategies.			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p>Modular Handgun System (MHS): Conducted meetings to discuss, plan and prepare program documentation; initiated integrated product team charter and acquisition plan; planned and conducted terminal effects test; released Request for Information (RFI) to industry, received and sorted all responses to RFI.</p> <p>FY 2013 Plans: ICC: Down select individual carbine competitors from competitive evaluation/testing phase to conduct system testing and user evaluation of remaining weapons. Perform down-selection of most qualified vendors and award three competitive contracts. PSR: Evaluate on-going initiatives of the Precision Sniper Rifle. Initiate development and engineering testing efforts to support new Capability Development Documents.</p> <p>FY 2014 Plans: ICC: Complete the source selection efforts, down selecting to a single Individual Carbine. Complete the cost benefit analysis in support of Milestone C and initiate low rate initial production. Will complete Production Qualification Testing and Initial Operational Test & Evaluation and transition program to Full Rate Production. PSR: Will continue development and engineering testing efforts to support new Capability Development Documents. FY2014 New Start Squad Designated Marksman Rifle (SDM) supports requirement definition and analysis process. MHS: Will select commercially available Modular Handgun System (MHS) for the Army. Will conduct Developmental and Operational Testing on the selected MHS. Will review and reduce test data. Will prepare and plan for transition from research, development, test and evaluation (RDT&E) to low rate initial production (LRIP). Will update Acquisition Plan and Systems Engineering Plan as required. FY2014 New Start M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Will conduct testing, evaluation, and documentation required for Type Classification Standard.</p>				
<p>Title: Small Arms Weapons Enhancements</p> <p align="right">Articles:</p> <p>Description: Description: Enhancements and developments of small arms weapons</p> <p>FY 2012 Accomplishments: M4 Carbine Product Improvement Program (PIP): Completed technical testing and evaluation of the rail system hardware bid samples. Completed testing of new bolt bid samples and based upon the cost/performance findings the bolt initiative was cancelled. Suppressors: Completed Test Operational Procedures for measurement of suppressor performances. Developed draft operational relevant human perception (detection and localization) model for suppressor performances. Developed draft Capability Development Document.</p>		4.622 0	7.597 0	4.512

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012
<p>Improved Cleaning Kits: Divided cleaning kits components into two separate kits for the individual and team to reduce size and cost.</p> <p>Sniper Upgrades: Conducted system testing and evaluation of components enhancements of the M110 Semi-Automatic Sniper System. Initiated characterization testing of the Compact Semi-Automatic Sniper System. Conducted technical and operational testing of XM2010 Enhanced Sniper Rifle.</p> <p>XM205 Tripod: Submitted final report for Milestone C and transitioned program to production.</p> <p>Shock Reduction: Developed and finalized scope of work to measure recoil.</p> <p>FY 2013 Plans:</p> <p>M4 Carbine Product Improvement Program: Award hardware delivery orders to conduct final test and evaluation of the rail system.</p> <p>Weapons Reliability Program: Transition initiative from Small Arms Improvement, Project S54, Program Element 0603827A (Budget Activity 4).</p> <p>Suppressors: Complete test plan of small arms suppressors.</p> <p>Improved Cleaning Kits: Award competitive contract for the updated cleaning kits.</p> <p>Sniper Upgrades: Continue system testing and evaluation of components enhancements of the M110 Semi-Automatic Sniper System, M110E1 Compact Semi-Automatic Sniper Systems and XM2010 Enhanced Sniper Rifle.</p> <p>Shock Reduction: Complete assessment of 3D recoil and shock spectrum measurement techniques to determine viability of introducing new standard for testing small arms weapons for felt recoil and weapon device shock survivability.</p> <p>FY 2014 Plans:</p> <p>M4 Carbine PIP: Will transition M4 Carbine Product Improvements initiatives to M4 Carbine Modification procurement program.</p> <p>Suppressors: Will conduct test and evaluation of small arms suppressors.</p> <p>Sniper Upgrades: Will perform, evaluate and analyze engineering, development and testing of sniper upgrades.</p> <p>Weapons Reliability Program: Will complete design of experiments test cycle to determine root cause of weapon reliability. Initiate modeling, prototyping and assessment of component upgrades. Will conduct performance verification testing of proposed weapon system modifications.</p> <p>Will implement new test standard of measuring small arms felt recoil. Will continue studies and evaluate increased barrel life/ chrome replacement, protective coatings, reduced recoil, 3D/Additive manufacturing methods. Will assess weapons reliability testing of functional impact with the introduction of enhanced performance ammunition on current small caliber weapon designs. Areas of potential impact include weapon system reliability, durability, and maintainability. Will transition barrel twist optimization from Small Arms Improvement, Project S54, Program Element 0603827A (Budget Activity 4).</p> <p>FY2014 New Start Powered Rail, Gain Twist Rifling and Advanced Coatings.</p>				FY 2013
Title: Ammunition				FY 2014
				1.600
				1.632
				0.200

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Articles:		0	0	
Description: Description: Improvement of small arms ammunition				
FY 2012 Accomplishments: Completed root cause analysis testing for Indiana Ordnance incident of the XM1112 40mm Low Velocity Airburst Non-Lethal Munitions (ANLM). Transitioned Micro Electro-Mechanical System (MEMS) safe and arm mechanisms to Program Executive Office Ammunition.				
FY 2013 Plans: Build hardware and complete developmental testing and evaluation of the XM1112 ANLM. Transition the ANLM program to Program Executive Office Ammunition. FY2014 New Start XM1116 12 Gauge Non-Lethal Extended Range.				
FY 2014 Plans: Will evaluate effect of new ammunition on small arms weapons.				
Title: Combat Optics		0.100	0.100	0.700
Articles:		0	0	
Description: Description: Improvement of combat optics				
FY 2012 Accomplishments: Conducted market research of optics industry. Initiated engineering support and evaluation of weapon optics performance requirements. Developed test plans and scheduled human factors testing of continuous variable systems in support of Squad Common Optic Capability Development Document.				
FY 2013 Plans: Transition Squad Common Optic from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4). Draft acquisition plan and operational assessment of commercial of the shelf optics to validate a common power optic across weapon platforms.				
FY 2014 Plans: Will continue engineering support and services to include engineering evaluations, verification and validation of weapon optics performance requirements to include protective and anti-reflective coatings. Will obtain and test bid samples of a Squad Common Optic. FY2014 New Start Mounted Machine Gun Optic. Transition Squad Common Optic from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4).				
Title: Fire Control		0.750	0.743	6.500

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p align="right"><i>Articles:</i></p> <p>Description: Description: Improvement of small arms fire control</p> <p>FY 2012 Accomplishments: M320 Grenade Launcher: Completed market survey and documentation to initiate a new Grenadier Sighting System (GSS). Completed market survey to evaluate industrail base for a Build to Print capability for M320 production.</p> <p>FY 2013 Plans: M320 Grenade Launcher: Complete acquisition plan and strategy of a new Grenadier Sighting System (GSS).</p> <p>FY 2014 Plans: M320 Grenade Launcher: Will complete bid sample test of GSS and award competitive contract. Integrated Fire Control for Small Arms: Will complete transition of 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. Will evaluate hyperspectral tracking of targets.</p>	0	0	
Accomplishments/Planned Programs Subtotals	17.759	19.617	18.201

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Small Arms Improvement: <i>RDTE S54, Program Element 0603827A - Soldier Systems - Advanced Development</i>	4.362	4.690	4.690		4.690	6.172	5.569	5.186	5.700	Continuing	Continuing
• M4 Carbine MODS: <i>WTCV, GB3007, M4 Carbine MODS</i>	41.892	27.243	10.300		10.300	16.128	16.152	8.800	18.491	Continuing	Continuing
• M16 Rifle Mods: <i>WTCV, GZ2800, M16 Rifle MODS</i>	3.476	18.728	2.136		2.136	3.974	3.798	3.394	3.500	Continuing	Continuing
• Sniper Rifle MODS: <i>WTCV, GZ1500, Sniper Rifle MODS</i>	1.994	14.113	7.017		7.017	2.018	2.019	2.053	3.986	Continuing	Continuing
• M249 SAW MODS: <i>WTCV, GZ1290, M249 Squad Automatic Weapon (SAW) MODS</i>	8.480	4.996	7.608		7.608	7.607	6.201	6.368	5.800	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• M240 Medium Machine Gun MODS: <i>WTCV, GZ1300, M240</i> <i>Medium Machine Gun MODS</i>	15.718	6.806	2.719		2.719	5.885	5.568	4.847	5.000	Continuing	Continuing
• M2 .50 CAL Heavy Machine Gun MODS: <i>WTCV, GB4000, M2 .50</i> <i>CAL Heavy Machine Gun MODS</i>	48.856	39.974	33.691		33.691	48.553	59.199	63.570	53.961	Continuing	Continuing
• Modification Less Than \$5.0M: <i>WTCV, GC0925, Modifications</i> <i>Less Than \$5.0M</i>	2.973	3.072	1.569		1.569	4.048	3.796	3.232	3.548	Continuing	Continuing

Remarks

In support of Small Arms Requirements, components or prototypes developed in Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) is transitioned to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon production or modification program.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	Allot	PM Soldier Weapons,:Picatinny Arsenal	4.042	2.475	Jan 2012	2.904	Apr 2013	0.500	Mar 2014	-		0.500	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Weapons,:Picatinny Arsenal	0.579	0.205	Jan 2012	0.250	May 2013	0.139	Mar 2014	-		0.139	Continuing	Continuing	Continuing
Subtotal			4.621	2.680		3.154		0.639		0.000		0.639			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fabrication	C/CPPF	Various,:Multiple	0.000	-		0.300	May 2013	1.200	Mar 2014	-		1.200	Continuing	Continuing	Continuing
Hardware Development	MIPR	Army Research Development Engineering Centers,:Multiple	6.741	0.388	Feb 2012	0.100	Feb 2013	0.750	Mar 2014	-		0.750	Continuing	Continuing	Continuing
Subtotal			6.741	0.388		0.400		1.950		0.000		1.950			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering	MIPR	Army Research Development Engineering Centers,:Multiple	18.934	7.888	Jan 2012	8.380	Apr 2013	8.412	Mar 2014	-		8.412	Continuing	Continuing	Continuing
Logistics	MIPR	TACOM,:Warren	1.304	1.291	Jan 2012	1.383	Apr 2013	1.200	Mar 2014	-		1.200	Continuing	Continuing	Continuing
Human Research and Engineering	MIPR	Army Research Laboratory,:Aberdeen Proving Ground	1.724	0.598	Dec 2011	0.600	Apr 2013	0.500	Mar 2014	-		0.500	Continuing	Continuing	Continuing
Subtotal			21.962	9.777		10.363		10.112		0.000		10.112			

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S63: <i>Small Arms Improvement</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)																												
Squad Designated Marksman Rifle (SDM)																												
Sub-Compact Weapon																												
Lightweight Machine Gun																												
Gain Twist Rifling																												
Powered Rail																												
Squad Common Optic																												
Mounted Machine Gun Optic																												
Integrated Fire Control for Small Arms																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)	1	2014	4	2016
Squad Designated Marksman Rifle (SDM)	1	2014	4	2017
Sub-Compact Weapon	1	2015	4	2017
Lightweight Machine Gun	1	2015	4	2018
Gain Twist Rifling	1	2014	4	2014
Powered Rail	1	2014	4	2017
Squad Common Optic	1	2014	4	2015
Mounted Machine Gun Optic	1	2014	4	2016
Integrated Fire Control for Small Arms	1	2014	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>	-	0.173	0.000	14.864	-	14.864	15.000	15.000	10.000	12.191	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Project S64 is a new start in FY 2014.

A. Mission Description and Budget Item Justification

The Maneuver Support Center of Excellence (MSCoE) at FT Leonard Wood, MO (user community) has identified development of the next increment of the Common Remotely Operated Weapon Station (CROWS) as a critical improvement for the Soldier in the combat environment. By addressing the capability gap of non-turreted, lightly armored vehicles where the gunner is exposed to enemy fire, the current CROWS system provides the ability to rapidly and accurately locate and engage the enemy while allowing platform gunners to remain under armor, thereby providing greater protection and increasing overall lethality. Additional capabilities pursued in Increment Two (2) include: increased accuracy of weapons fire; improved system survivability from direct fire and fragmentation weapons; vehicle commander display and firing override ability; laser designator; future generation Forward Looking Infrared (FLIR); auto-zoom; auto-tracking; auto-detection and targeting; net-ready capabilities; integration of future weapon systems; additional sensors for simultaneous 360-degree situational awareness; through-sight video recording; increased elevation and depression of weapon muzzle limits; fixed-site emplacement capability; gunshot detection sensors; an objective requirement for wireless remote operation of the CROWS and the application of external targeting data for precision engagement. In addition to these capabilities, parallel development efforts will be pursued for the current increment, to include improvements to component reliability that will extend system life and value engineering design changes that will limit the cost and quantity of parts and reduce the system's logistics footprint. New start in FY 2014.

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

	FY 2012	FY 2013	FY 2014
Title: Design, Develop & Fabricate CROWS Increment II	0.000	0.000	9.867
Description: Description: Design, Develop & Fabricate			
FY 2014 Plans: As a prerequisite to developing improvements involving enhanced sensors, infrared sights, video capabilities and situational awareness, the contractor will design and fabricate an improved fire control unit (FCU) processor, to include ethernet channels in the system's slip ring, in order to facilitate the greater data through-put required.			
Title: Engineering Support	0.103	0.000	2.150
Articles:	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>		PROJECT S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2012
				FY 2013
				FY 2014
<p>Description: Description: Government Engineering Support.</p> <p>FY 2012 Accomplishments: Provided engineering support and oversight of design improvements; preparation of the performance specifications for increased elevation and other system improvements.</p> <p>FY 2014 Plans: Will provide engineering support and oversight of design improvements; preparation of the performance specifications for the contractor; development of new processor and slip-ring that facilitates target acquisition and designation, command override, infrared and video capabilities.</p>				
<p>Title: Development Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: Description: Test and Evaluation</p> <p>FY 2012 Accomplishments: Conducted human research and engineering development testing and evaluation of increased elevation and other system improvement.</p> <p>FY 2014 Plans: Will develop testing and evaluation criteria and documentation, to include a Test and Evaluation Master Plan (TEMP). Will conduct initial developmental testing and evaluation of improvements.</p>				0.017 0
				0.000
				0.852
<p>Title: Program Management</p> <p align="right">Articles:</p> <p>Description: Description: Program Management.</p> <p>FY 2012 Accomplishments: Provided management oversight of increased elevation design and development, to include engineering support, contract actions and test activities throughout the fiscal year.</p> <p>FY 2014 Plans: The program management office and the proponents in the user community at the Maneuver Support Center will provide oversight of product design and development, to include engineering support, contract actions and test activities throughout the fiscal year. Will facilitate approximately six test events at various government laboratories to test prototype units of the improved fire control</p>				0.053 0
				0.000
				1.995

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
unit processor and system slip ring, in order to quantify performance with the most current sensors and effectors. Will manage the life cycle of the program to include future acquisition and sustainment plans.			
Accomplishments/Planned Programs Subtotals	0.173	0.000	14.864

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• CROWS (G04700, W&TCV): <i>W&TCV, G04700, CROWS</i>	14.890	56.725	56.580		56.580	56.911	56.945	57.898	59.250	0.000	359.199

Remarks

D. Acquisition Strategy

The Common Remotely Operated Weapon Station (CROWS) uses a single-step acquisition approach in its strategy. The CROWS achieved Type Classification Standard in 3QFY11, Full Materiel Release in 3QFY12, with Full Rate Production scheduled 4QFY12, in accordance with the Capability Production Document (CPD) Increment One (1), as clarified in June 2009.

The program objective is to continue developing, improving and fielding the CROWS on Up-Armored High Mobility Multipurpose Wheeled Vehicles (UA-HMMWV), M1A2 Abrams Main Battle Tank and other combat vehicles to the Army Acquisition Objective (AAO) in accordance with the Basis of Issue Plan (BOIP). In addition, the program supports new and emerging urgent requirements like the integration of the Mine Resistant Ambush Protected (MRAP) family of vehicles, Ground Combat Vehicles, Joint Lightweight Tactical Vehicles (JLTV) and fixed site mounting 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	MIPR	PM Soldier Weapons:Picatinny Arsenal, NJ	0.000	0.053	Sep 2012	-		1.012	Jan 2014	-		1.012	Continuing	Continuing	0.000
User Community/ Proponency	MIPR	Maneuver Support Center of Excellence (MSCoE):FT Leonard Wood, MO	0.000	-		-		0.983	Jan 2014	-		0.983	Continuing	Continuing	0.000
Subtotal			0.000	0.053		0.000		1.995		0.000		1.995			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Design, Develop and Fabricate	SS/ FFPLOE	TBD Contractor:TBD	0.000	-		-		9.867	Jun 2014	-		9.867	Continuing	Continuing	0.000
Subtotal			0.000	0.000		0.000		9.867		0.000		9.867			0.000

Remarks
Contractor for this effort will be the winner of the full and open competitive contract, scheduled for award 4QFY2012 for production and sustainment.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Support	MIPR	ARDEC:Picatinny Arsenal, NJ	0.000	0.103	Sep 2012	-		2.150	Jan 2014	-		2.150	Continuing	Continuing	0.000
Subtotal			0.000	0.103		0.000		2.150		0.000		2.150			0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>				PROJECT S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>								
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Test Planning and Execution	Various	Various:Multiple	0.000	0.017	Oct 2012	-		0.852	Jan 2014	-		0.852	Continuing	Continuing	0.000	
Subtotal			0.000	0.017		0.000		0.852		0.000		0.852			0.000	
			All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract					
Project Cost Totals			0.000	0.173	0.000	14.864	0.000	14.864			0.000					

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Design, Develop & Fabricate																												
Engineering Development																												
Engineering Development - Increased Elevation																												
Development Test & Evaluation																												
Development Test & Evaluation - Increased Elevation																												
Program Management																												
Program Management - Increased Elevation																												
Milestone C																												
Low Rate Initial Production																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>	PROJECT S64: <i>Common Remotely Operated Wpn Sys (CROWS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design, Develop & Fabricate	3	2014	2	2018
Engineering Development	2	2014	2	2018
Engineering Development - Increased Elevation	4	2012	2	2013
Development Test & Evaluation	2	2014	2	2018
Development Test & Evaluation - Increased Elevation	1	2013	1	2013
Program Management	2	2014	4	2018
Program Management - Increased Elevation	4	2012	2	2013
Milestone C	2	2018	2	2018
Low Rate Initial Production	2	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
S70: <i>Personnel Recovery Support System (PRSS)</i>	-	2.965	4.517	1.132	-	1.132	1.104	1.141	1.193	1.193	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

Note
Not applicable for this item.

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 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 encrypted Personal Reporting Device (PRD) that operates over a secure architecture.

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

	FY 2012	FY 2013	FY 2014
Title: Development of Personnel Recovery Support System (PRSS)	2.965	4.517	1.132
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 2012 Accomplishments: Successfully completed developmental, operational, and OCONUS testing and validated PRSS system enhancements. Developed next-generation PRSS 1b software, firmware, and waveform and began developmental testing of prototype PRD and receiver.			
FY 2013 Plans: Complete development of prototype PRD and receiver and conduct PRSS 1b system level test and evaluation, including system integration.			
FY 2014 Plans: Complete PRSS 1b system level test and evaluation, to include end-to-end network testing and operational testing.			
Accomplishments/Planned Programs Subtotals	2.965	4.517	1.132

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</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>	8.509	11.222	26.526		26.526	25.938	17.369	11.793	9.187	Continuing	Continuing
• Aircrew Integrated Systems APA: <i>Aircraft Procurement, Army AZ3110-ACIS includes funding of Personnel Recovery Support Equipment aircraft mods</i>	62.746	77.381	45.841		45.841					0.000	185.968

Remarks

Aircraft Procurement, Army SSN of AZ3110 - ACIS primarily includes the funding of traditional Aircrew Integrated Systems efforts including Air Warrior and Air Soldier System requirements as well as support Personnel Recovery Support System (PRSS) platform interoperability production program.

D. Acquisition Strategy

Execute PRSS program development effort for performance optimization through contracts with industry and Military Interdepartmental Purchase Requests to other Governmental agencies. Perform continuing development and test of new waveforms on an annual basis to mitigate potential security compromises to the PRSS system.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PM Administration	Allot	Various Government:Huntsville, Alabama	0.243	0.338		0.343		0.285		-		0.285	Continuing	Continuing	Continuing
Subtotal			0.243	0.338		0.343		0.285		0.000		0.285			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Personnel Recovery Support System Development Systems Engineering	SS/FP	Various:Product Development	1.451	1.844		3.347		0.310		-		0.310	Continuing	Continuing	Continuing
Subtotal			1.451	1.844		3.347		0.310		0.000		0.310			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Matrix Support	RO	Various Organizations:Various Locations	0.389	0.583		0.452		0.337		-		0.337	Continuing	Continuing	Continuing
Subtotal			0.389	0.583		0.452		0.337		0.000		0.337			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Testing	RO	Various Organizations:Various Locations	0.400	0.200		0.375		0.200		-		0.200	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604601A: <i>Infantry Support Weapons</i>					PROJECT S70: <i>Personnel Recovery Support System (PRSS)</i>						
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
Subtotal			0.400	0.200		0.375		0.200		0.000		0.200				
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			2.483	2.965		4.517		1.132		0.000		1.132				

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
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



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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PRSS Upgrades & Adaptations to New Platforms	1	2015	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VS5: <i>Soldier Protective Equipment</i>	-	3.859	11.942	20.043	-	20.043	13.173	11.682	8.806	7.806	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This funding supports the System Development and Demonstration (SDD) phase of Engineering and Manufacturing Development (EMD) tasks related to Individual Soldier Ballistic Protection. It funds system integration and formal Developmental Testing/Operational Testing (DT/OT) of 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. It also funds effort to increase eyewear ballistic/blast protection, and transition products to production.

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

	FY 2012	FY 2013	FY 2014
Title: Soldier Protective Equipment	3.859	11.942	20.043
Articles:	0	0	
Description: Funding line established in FY12. 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 Accomplishments: Completed incremental enhancements to the Improved Outer Tactical Vest (IOTV) (soft armor subsystem) of Interceptor Body Armor (IBA) system and transitioned to production in FY12. Design enhancements included a more robust quick-release technology for improved functionality. Additionally the IOTV (Gen III) included other design features to improve comfort, mobility and functionality, especially to female and small statured Soldiers. Continued efforts to evaluate and test Family of Concealable Body Armor (FoCBA) system. Awarded FoCBA Increment 1 prototype contracts in March 12, and completed Limited User Evaluations and initiated system characterization testing in August 12. Initiated eyewear characterization testing (laser testing, penetration testing, fielding of view/area of coverage testing) to support FY13 Authorized Protective Eyewear List (APEL) and Qualified Products List (QPL) requalification. Initiated and completed the protective eyewear head form development. Head form will support ballistic testing of eyewear development and production acceptance testing. Initiated and completed the Enhanced Combat Helmet (ECH) qualification testing. Obtained a Type Classified Limited Procurement decision and transitioned the ECH			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
to production (OMA, 121017, Central Funding & Fielding) in June 12. Initiated and conducted Soldier Protection Benchmark Evaluation (SPBE), Phase I.			
FY 2013 Plans: Complete System Capability & Manufacturing Process Demonstration (SC&MPD) phase for the Family of Concealable Body Armor (FoCBA) in 1Q FY13. Obtain a Milestone C Decision Type Classification Standard and transition to production (OMA, 121017, Central Funding & Fielding) for the FOCBA in 2Q FY13. Obtain 1QFY13 Materiel Development Decision (MDD) and initiate System Capability & Manufacturing Process Demonstration (SC&MPD) phase for the Soldier Protective System (SPS). FY13 efforts will focus on contract awards to support the integration of SPS Vital Torso, Extremity, Torso and Integrated head, face and eye protective subsystems. Additional FY13 efforts will concentrate the integration of more mature Vital Torso, soft armor (torso and extremities) subsystems to enhance SPS form, fit and comfort for female and small statured Soldiers. Will award SPS prototyping contracts, conduct preliminary design reviews, and initiate Characterization Testing including the Phase II Soldier Protective Benchmark Evaluation and Soldier System Integration Exercise through 1Q FY14. Initiate APEL/QPL requalification program (including Universal Prescription Lens Carrier) in 1Q FY13 and complete APEL/QPL requalification by 1Q FY14			
FY 2014 Plans: Initiate and complete Phase II Soldier Protective Benchmark Evaluation and Soldier System Integration Exercises in 1Q FY14. Complete APEL/QPL requalification program (including Universal Prescription Lens Carrier) by 1Q FY14. Continue Soldier Protective System (SPS) System Capability & Manufacturing Process Demonstration (SC&MPD) efforts. FY14 efforts will focus on the completion of Characterization Testing by 1QFY14, and awarding contract options to support continued refinement and integration (build-test-fix-build) of the SPS subsystems (Vital Torso, Torso Protection, Head Protection, Extremity Protection and Integrated Soldier Sensor Suite transitioned from Integrated System Design/VS 4). Conduct Critical Design Reviews and award contract options for formal Developmental Test (DT) hardware, Human Factors and System-Level test items. Conduct DT in 4Q FY14 through 1Q FY15. Support development of the SPS Capability Production Document and prepare for a Milestone C Decision (Type Classification - Low Rate Initial Production (OMA, 121017, Central Funding and Fielding)) by 2Q FY15.			
Accomplishments/Planned Programs Subtotals	3.859	11.942	20.043

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• VS4 6.4 RDTE: <i>RDTE, 0603827A.VS4, Soldier Protective Equipment</i>	1.786	14.984	3.688		3.688	7.243	4.756	6.270	7.150	0.000	45.877

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OMA: <i>OMA, 121017, Central Funding & Fielding</i>	67.248	73.639	103.484		103.484	161.773	165.014	217.679	205.582	0.000	994.419

Remarks

D. Acquisition Strategy

Acquisition strategies vary in methods to include the following: (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 2014 Army												DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT								
2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)				PE 0604601A: Infantry Support Weapons				VS5: Soldier Protective Equipment								
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	0.200		0.300		0.400		-		0.400	Continuing	Continuing	0.000	
Subtotal			0.000	0.200		0.300		0.400		0.000		0.400			0.000	
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	1.276		8.714		15.197		-		15.197	Continuing	Continuing	0.000	
Prod Sys Engineering Spt	MIPR	various:various	0.000	0.669		0.928		1.096		-		1.096	Continuing	Continuing	0.000	
Subtotal			0.000	1.945		9.642		16.293		0.000		16.293			0.000	
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	0.600		0.600		0.600		-		0.600	0.000	1.800	0.000	
Subtotal			0.000	0.600		0.600		0.600		0.000		0.600	0.000	1.800	0.000	
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	1.114		1.400		2.750		-		2.750	Continuing	Continuing	0.000	
Subtotal			0.000	1.114		1.400		2.750		0.000		2.750			0.000	
Project Cost Totals			0.000	3.859		11.942		20.043		0.000		20.043			0.000	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks	
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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 development of Family of Concealable Body Army (FoCBA)				■																								
FoCBA Milestone C Decision					■																							
Initiate/complete APEL/QPL requalification Program				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Soldier Protection Bench Mark Evaluation & Sldr Sys Integr Exercise								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Soldier Protection System (SPS) Material Development Decision (MDD)					■																							
SPS Milestone B Decision					■																							
SPS System Capability & Manufacturing Process Dev (SC&MPD) phase of EMD					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Award SPS component/subsystem contracts													■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
SPS Critical Design Review (CDR)												■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Conduct Initial Characterization Testing (ballistic & non-dest eval)												■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Award SPS components/subsystem contract options															■	■	■	■	■	■	■	■	■	■	■	■	■	
Conduct Developmental Test (ballistic & non dest eval)																												
SPS Milestone C Decision																												
Initiate SPS Incr/SC&MPD Improvements thru FY19																												
SPS system testing (ballistic & non ballistic; IOT&E) thru FY19																												
SPS CDRs/PRRs - Transition mature subsystems to production FY15																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018							
	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				
SPS CDRs/PRRs - Transition mature subsystems to production FY16																																
SPS CDRs/PRRs - Transition mature subsystems to production FY17																																
SPS CDRs/PRRs - Transition mature subsystems to production FY18																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 development of Family of Concealable Body Army (FoCBA)	1	2013	1	2013
FoCBA Milestone C Decision	2	2013	2	2013
Initiate/complete APEL/QPL requalification Program	1	2013	1	2014
Soldier Protection Bench Mark Evaluation & Sldr Sys Integr Exercise	4	2013	1	2014
Soldier Protection System (SPS) Material Development Decision (MDD)	2	2013	2	2013
SPS Milestone B Decision	2	2013	2	2013
SPS System Capability & Manufacturing Process Dev (SC&MPD) phase of EMD	2	2013	1	2015
Award SPS component/subsystem contracts	3	2014	3	2014
SPS Critical Design Review (CDR)	2	2014	2	2014
Conduct Initial Characterization Testing (ballistic & non-dest eval)	1	2014	1	2015
Award SPS components/subsystem contract options	3	2014	3	2014
Conduct Developmental Test (ballistic & non dest eval)	4	2014	1	2015
SPS Milestone C Decision	2	2015	2	2015
Initiate SPS Incr/SC&MPD Improvements thru FY19	3	2015	4	2018
SPS system testing (ballistic & non ballistic; IOT&E) thru FY19	1	2016	4	2018
SPS CDRs/PRRs - Transition mature subsystems to production FY15	3	2015	3	2015
SPS CDRs/PRRs - Transition mature subsystems to production FY16	3	2016	3	2016
SPS CDRs/PRRs - Transition mature subsystems to production FY17	3	2017	3	2017
SPS CDRs/PRRs - Transition mature subsystems to production FY18	3	2018	3	2018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604A: <i>MEDIUM TACTICAL VEHICLES</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	3.835	3.006	2.140	-	2.140	0.428	0.286	0.000	0.000	Continuing	Continuing
H07: <i>FAMILY OF MED TAC VEH</i>	-	3.835	3.006	2.140	-	2.140	0.428	0.286	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY14 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.

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. FY14 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604604A: <i>MEDIUM TACTICAL VEHICLES</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	3.957	3.006	2.854	-	2.854
Current President's Budget	3.835	3.006	2.140	-	2.140
Total Adjustments	-0.122	0.000	-0.714	-	-0.714
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.122	-	-0.714	-	-0.714

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
H07: <i>FAMILY OF MED TAC VEH</i>	-	3.835	3.006	2.140	-	2.140	0.428	0.286	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

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.

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. FY14-16 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 2012	FY 2013	FY 2014
Title: Automotive Technological Evaluation, Testing & Insertion	0.894	1.044	0.749
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2012 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Will continue to fund FMTV Automotive Technological Evaluation, Testing, & Insertion FY 2013 Plans: Continuation with FMTV Automotive Technological Evaluation, Testing, & Insertion FY 2014 Plans: Continuation with FMTV Automotive Technological Evaluation, Testing, & Insertion				
Title: Armor Spiral Development Description: Funding is provided for the following effort FY 2012 Accomplishments: Continued Armor Spiral Development FY 2013 Plans: Improvements to occupant survivability. FY 2014 Plans: Improvements to occupant survivability.		Articles: 0.916 0	0.960 0	0.685
Title: Fuel Economy Description: Funding is provided for the following effort FY 2012 Accomplishments: Will provide funding for FMTV Fuel Economy Research. FY 2013 Plans: Continued Fuel Economy Improvements. FY 2014 Plans: Continued Fuel Economy Improvements.		Articles: 0.916 0	1.002 0	0.706
Title: Government System Test and Evaluation Description: Funding is provided for the following effort		Articles: 0.989 0	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<i>FY 2012 Accomplishments:</i> Will fund Government System Test and Evaluation			
<i>Title:</i> SBIR/STTR	0.120	0.000	0.000
<i>Articles:</i>	0		
<i>Description:</i> Funding is provided for the following effort			
<i>FY 2012 Accomplishments:</i> Small Business Innovative Research/Small Business Technical Transfer Program			
Accomplishments/Planned Programs Subtotals	3.835	3.006	2.140

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u> <u>Continuing</u>
• OPA 1 D15500: <i>Family of Medium Tactical Vehicles D15500</i>	434.030	388.485	223.910		223.910					Continuing	Continuing
Remarks											

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FMTV Automotive Technological Evaluation and Insertion	C/CPFF	Oshkosh Truck Corporation:Oshkosh, WI	8.518	0.934	Sep 2012	1.044	Mar 2013	0.749	Dec 2013	-		0.749	Continuing	Continuing	Continuing
FMTV Armor Spiral Development	C/CPFF	Oshkosh Truck Corporation:Oshkosh, WI	2.965	0.956	Sep 2012	0.960	Mar 2013	0.685	Dec 2013	-		0.685	Continuing	Continuing	Continuing
FMTV Fuel Economy	C/CPFF	Oshkosh Truck Corporation:Oshkosh, WI	0.000	0.956	Sep 2012	1.002	Mar 2013	0.706	Dec 2013	-		0.706	Continuing	Continuing	Continuing
ASV Mission Enhancement Package (MEP)	TBD	TBD:TBD	1.844	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			13.327	2.846		3.006		2.140		0.000		2.140			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FMTV Automotive Technological Evaluation and Insertion	Various	Various:Various	0.000	0.351	Sep 2012	-		-		-		-	Continuing	Continuing	Continuing
FMTV Armor Spiral Development Testing	MIPR	TARDEC:Warren, MI	0.000	0.319	Sep 2012	-		-		-		-	Continuing	Continuing	Continuing
FMTV Fuel Economy Testing	MIPR	TARDEC:Warren, MI	0.000	0.319	Sep 2012	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	0.989		0.000		0.000		0.000		0.000			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		13.327	3.835	3.006	2.140	0.000	2.140		

Remarks

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	9.655	5.040	5.002	-	5.002	0.000	0.000	0.000	0.000	Continuing	Continuing
499: <i>JAVELIN (AAWS-M)</i>	-	9.655	5.040	5.002	-	5.002	0.000	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

FY14 RDTE funding will support system qualification and live fire testing of the multi-purpose warhead (MPWH). The MPWH will be integrated into the Javelin Block I missile resulting in an improved capability against a broader range of threats being encountered in current military operations while maintaining lethality against traditional armored threats. FY14 RDTE funding will also support the Command Launch Unit (CLU) Far Target Locator (FTL) demonstrations and user evaluation. These improvements to the missile and CLU are a direct result of lessons learned from firing 2,074 Javelin missiles (Army and USMC) in Iraq and Afghanistan through 30 November 2012.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	9.930	5.040	5.026	-	5.026
Current President's Budget	9.655	5.040	5.002	-	5.002
Total Adjustments	-0.275	0.000	-0.024	-	-0.024
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.269	-			
• Adjustments to Budget Years	-	-	-0.024	-	-0.024
• Other Adjustments 1	-0.006	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
499: <i>JAVELIN (AAWS-M)</i>	-	9.655	5.040	5.002	-	5.002	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

FY14 RDTE funding will support system qualification and live fire testing of the multi-purpose warhead (MPWH). The MPWH will be integrated into the Javelin Block I missile resulting in an improved capability against a broader range of threats being encountered in current military operations while maintaining lethality against traditional armored threats. FY14 RDTE funding will also support the Command Launch Unit (CLU) Far Target Locator (FTL) demonstrations and user evaluation. These improvements to the missile and CLU are a direct result of lessons learned from firing 2,074 Javelin missiles (Army and USMC) in Iraq and Afghanistan through 30 November 2012.

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

	FY 2012	FY 2013	FY 2014
Title: Javelin Block I System Improvements	9.655	5.040	5.002
Articles:	0	0	
Description: Improve the current Javelin missile with multi-purpose warhead (MPWH)			
FY 2012 Accomplishments: Continue development of Javelin MPWH modernization technologies.			
FY 2013 Plans: Planned activities include Javelin MPWH component qualification testing, final design review, and system level integration (non-flight) testing to prepare for system qualification.			
FY 2014 Plans: Planned activities include Javelin MPWH system qualification (flight), live fire testing for integration into Javelin Block I missile, CLU FTL demonstrations and user evaluations.			
Accomplishments/Planned Programs Subtotals	9.655	5.040	5.002

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SSN CC0007: <i>Javelin (AAWS-M)</i> <i>Procurement</i>	172.502	81.121	110.510		110.510	115.444	112.847	116.277	104.547	0.000	813.248

Remarks

Procurement of Javelin Block I missiles with the multi-purpose warhead will provide warfighters with improved capability against a broader target set.

D. Acquisition Strategy

The Under Secretary of the Army signed the Javelin FY13-17 procurement contract Justification and Approval for sole source to the Javelin Joint Venture on 10 Jun 12. FY14 RDTE funds continue development of MPWH via the engineering services contract with the Javelin Joint Venture as an improvement to the Javelin Block I missile. The Javelin MPWH is planned to be integrated into FY15 Javelin missile procurement via Engineering Change Proposal, enabling improved capability across a broader 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering/ Program Management, Govt	Allot	Close Combat Weapon Systems Project Office:Redstone Arsenal, AL	0.000	0.400		0.400		0.450		-		0.450	0.000	1.250	0.000
Subtotal			0.000	0.400		0.400		0.450		0.000		0.450	0.000	1.250	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Multi-purpose Warhead Development	SS/CPFF	JV/Raytheon/ Lockheed Martin:Orlando, FL/ Tucson, AZ	0.000	9.255	Feb 2012	1.250	Jan 2013	1.275	Jan 2014	-		1.275	0.000	11.780	0.000
Trade Studies and Demonstrations	MIPR	AMRDEC Test & Evaluation:Redstone Arsenal, AL	0.000	-		0.250		0.325		-		0.325	0.000	0.575	0.000
Subtotal			0.000	9.255		1.500		1.600		0.000		1.600	0.000	12.355	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
 MIPR - Military Interdepartmental Purchase Request

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army			DATE: April 2013					
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604611A: <i>JAVELIN (AAWS-M)</i>			PROJECT 499: <i>JAVELIN (AAWS-M)</i>		

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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	■																											
MPWH Development, Component Qualification					■	■	■	■																				
Exercise FY13 Contract Options					■																							
Systems Integration and Test (Non-Flight)					■	■	■	■																				
Exercise FY14 Contract Options									■																			
System Qualification/ Live Fire (Flight Testing)									■	■	■	■																
Engineering Change Proposal Approval													■															

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
MPWH Development, Component Qualification	2	2013	4	2013
Exercise FY13 Contract Options	2	2013	2	2013
Systems Integration and Test (Non-Flight)	2	2013	1	2014
Exercise FY14 Contract Options	2	2014	2	2014
System Qualification/ Live Fire (Flight Testing)	1	2014	4	2014
Engineering Change Proposal Approval	4	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	5.239	3.077	21.321	-	21.321	14.511	4.741	4.034	0.000	Continuing	Continuing
659: <i>Family Of Hvy Tac Veh</i>	-	0.000	0.050	19.272	-	19.272	9.464	0.000	0.000	0.000	Continuing	Continuing
65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>	-	1.455	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
E50: <i>TRAILER DEVELOPMENT</i>	-	1.930	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
VR5: <i>TWV Protection Kits</i>	-	1.854	3.027	2.049	-	2.049	5.047	4.741	4.034	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 trucks, as part of the Army's Tactical Wheeled Vehicle Modernization Strategy. Funding in Project 659 supports the Family of Heavy Trucks (FHTV) Heavy Dump Truck (HDT). 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)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	5.477	3.077	22.373	-	22.373
Current President's Budget	5.239	3.077	21.321	-	21.321
Total Adjustments	-0.238	0.000	-1.052	-	-1.052
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.064	-			
• Adjustments to Budget Years	-0.174	-	-1.052	-	-1.052

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
659: <i>Family Of Hvy Tac Veh</i>	-	0.000	0.050	19.272	-	19.272	9.464	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

Note
 Family of Heavy Tactical Vehicles (FHTV) Heavy Dump Truck (HDT)

A. Mission Description and Budget Item Justification
 The Heavy Dump Truck (HDT) supports construction projects by loading, transporting and dumping payloads of sand and gravel aggregates, crushed rock, hot asphalt mixes, earth, clay, rubble, large boulders and other materials up to gross vehicle weight rating to job sites under worldwide climatic conditions. The HDT also serves as a quarry truck for the quick transport of bulk raw earth material to and from the crushing screening and washing plant and the asphalt mixing plant and the HDT also serves as a transportation asset for organizational equipment.

The HDT is required to replace the M917 and F5070 HDT.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Heavy Dump Truck Description: Truck Test Assets FY 2014 Plans: Truck Test Assets	0.000	0.000	5.410
Title: Test and Evaluation Description: Test and Evaluation FY 2014 Plans: Test and Evaluation	0.000	0.000	3.545
Title: Program Support Description: Program support.	0.000	0.050 0	0.150

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<i>FY 2013 Plans:</i> Funds will provide program support to the Heavy Tactical Vehicles family.			
<i>FY 2014 Plans:</i> Funds will provide program support to the Heavy Tactical Vehicles family.			
<i>Title:</i> Prototype Design and Integration	0.000	0.000	10.167
<i>Description:</i> Prototype Design and Integration			
<i>FY 2014 Plans:</i> Prototype Design and Integration			
Accomplishments/Planned Programs Subtotals	0.000	0.050	19.272

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Family of Heavy Tactical Vehicles: <i>Family of Heavy Tactical Vehicles (FHTV) DA0500</i>	645.008	54.983	28.731		28.731	20.351	28.069	30.998	7.262	Continuing	Continuing
• Truck, Dump: <i>Truck, Dump, 20T D16001</i>							26.077	26.084	37.088	Continuing	Continuing

Remarks

D. Acquisition Strategy
Funds will provide for test assets, design and integration of Military specific requirements; test and evaluation; and program management in support of FHTV - Heavy Dump Truck (HDT).

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototype Design and Integration	C/CPFF	TBD:TBD	0.000	-		-		10.167	Jan 2014	-		10.167	0.000	10.167	0.000
Subtotal			0.000	0.000		0.000		10.167		0.000		10.167	0.000	10.167	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Heavy Dump Truck (HDT) Test Assets	C/FFP	TBD:TBD	0.000	-		-		5.410	Jan 2014	-		5.410	0.000	5.410	0.000
Subtotal			0.000	0.000		0.000		5.410		0.000		5.410	0.000	5.410	0.000

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support	MIPR	TACOM:Warren, MI	0.000	-		0.050	Dec 2012	0.150	Dec 2013	-		0.150	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.050		0.150		0.000		0.150			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	MIPR	TBD:TBD	0.000	-		-		3.545	Jun 2014	-		3.545	0.000	3.545	0.000
Subtotal			0.000	0.000		0.000		3.545		0.000		3.545	0.000	3.545	0.000

			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		0.050		19.272		0.000		19.272			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks	
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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Heavy Dump Truck (HDT) Test Assets																												
Program Management Support																												
Prototype Design and Integration																												
Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Heavy Dump Truck (HDT) Test Assets	2	2014	2	2014
Program Management Support	1	2013	4	2015
Prototype Design and Integration	2	2014	4	2014
Testing	3	2014	1	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
65A: <i>MOVEMENT TRACKING SYSTEM (MTS)</i>	-	1.455	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 FY14 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 2012	FY 2013	FY 2014
<p>Title: Movement Tracking System (MTS)</p> <p align="right">Articles:</p>	0.845 0	0.000	0.000
<p>Description: Funding is provided for the following effort</p> <p>FY 2012 Accomplishments: Will continue to provide improvements to the system</p>			
<p>Title: System Testing</p> <p align="right">Articles:</p>	0.610 0	0.000	0.000
<p>Description: Funding is provided for the following effort</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<i>FY 2012 Accomplishments:</i> Testing includes Information Assurance (IAVA) testing, penetration testing, etc.			
Accomplishments/Planned Programs Subtotals	1.455	0.000	0.000

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u> <u>Continuing</u>
• D16103: <i>Movement Tracking System (MTS)</i>	52.554										

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software development, engineering, testing, program management	C/FP	Comtech Mobile Datacom Corp:Germantown, MD	14.751	1.305		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			14.751	1.305		0.000		0.000		0.000		0.000			

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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Testing	TBD	TBD:TBD	3.238	0.150		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			3.238	0.150		0.000		0.000		0.000		0.000			

Remarks
 Prototype testing.

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.989	1.455	0.000	0.000	0.000	0.000			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
E50: <i>TRAILER DEVELOPMENT</i>	-	1.930	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 2012	FY 2013	FY 2014
<p>Title: Tire Improvement and Next Generation Trailer Study.</p> <p align="right">Articles:</p>	1.869 0	0.000	0.000
<p>Description: Funding is provided for the following efforts.</p> <p>FY 2012 Accomplishments: The tire improvement effort is to improve wear and identify aging characteristics that 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>			
<p>Title: SBIR/STTR</p> <p align="right">Articles:</p>	0.061 0	0.000	0.000
<p>Description: SBIR/STTR</p> <p>FY 2012 Accomplishments: SBIR/STTR</p>			
Accomplishments/Planned Programs Subtotals	1.930	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Semi-Trailer Flatbed 40T	0.596	7.097	7.111		7.111					Continuing	Continuing
M870A1: <i>Semi-Trailer Flatbed 40T</i>											
M870A1 SSN D00700											

Remarks

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

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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	[REDACTED]																											
Next Generation Heavy Trailer Study	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
VR5: <i>TWV Protection Kits</i>	-	1.854	3.027	2.049	-	2.049	5.047	4.741	4.034	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

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 2012	FY 2013	FY 2014
<p>Title: Design and Build Armor Kits.</p> <p style="text-align: right;">Articles:</p> <p>Description: Design and build prototype kits for the Heavy Tactical Vehicle systems.</p> <p>FY 2012 Accomplishments: 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> <p>FY 2014 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>	0.973 0	0.000	0.850
<p>Title: Armor Analysis of Alternatives</p> <p style="text-align: right;">Articles:</p> <p>Description: Armor Analysis of Alternatives</p> <p>FY 2012 Accomplishments: Perform engineering analysis and present design concepts for an armor solution.</p>	0.173 0	0.000	0.000
<p>Title: Vulnerability Modeling and Simulation</p> <p style="text-align: right;">Articles:</p>	0.120 0	0.000	0.120

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>		PROJECT VR5: <i>TWV Protection Kits</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: Vulnerability Modeling and Simulation</p> <p>FY 2012 Accomplishments: Vulnerability analysis will provide the AEC evaluator with potential vulnerabilities in armor design. Will support a safety confirmation and materiel release.</p> <p>FY 2014 Plans: Vulnerability Model & Simulation/ Army Materiel Systems Analysis Activity (AMSAA) Model & Simulation</p>				
<p>Title: Survivability Modeling and Simulation</p> <p>Description: Modeling and Simulation to predict survivability performance of the armor design.</p> <p>FY 2012 Accomplishments: Modeling and Simulation to predict survivability performance of the armor design.</p> <p>FY 2014 Plans: Modeling and Simulation to predict survivability performance of the armor design.</p>		Articles: 0.250 0	0.000	0.159
<p>Title: Test and Evaluation.</p> <p>Description: Funding is provided for the following effort.</p> <p>FY 2013 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> <p>FY 2014 Plans: Continuation of test and evaluation of Tactical Wheel Vehicle protection kits.</p>		Articles: 0.000	2.427 0	0.750
<p>Title: Program Management</p> <p>Description: Funding is provided for program management heavy tactical office support.</p> <p>FY 2012 Accomplishments:</p>		Articles: 0.280 0	0.600 0	0.170

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Program Management support			
<i>FY 2013 Plans:</i> Program Management support			
<i>FY 2014 Plans:</i> Program Management support			
<i>Title:</i> SBIR/STTR	0.058	0.000	0.000
<i>Articles:</i>	0		
<i>Description:</i> SBIR/STTR			
<i>FY 2012 Accomplishments:</i> SBIR/STTR			
Accomplishments/Planned Programs Subtotals	1.854	3.027	2.049

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 005: <i>Family of Heavy Tactical Vehicles (FHTV) (DA0500)</i>	654.008	54.983	14.731		14.731	28.751	33.669	30.998	7.262	0.000	824.402
• 003: <i>Family of Medium Tactical Vehicles (FMTV) (D15500)</i>	434.030	388.485	273.910		273.910					0.000	1,096.425
• 000: <i>Tactical Wheeled Protection Kits - D04003</i>	39.908	69.163	51.258		51.258	89.245	84.507	75.000	87.000	0.000	496.081

Remarks

D. Acquisition Strategy
 FY12 funds were executed via Military Interdepartmental Purchase Request (MIPR) to Army Research Laboratory (ARL). Armor kit design contract to be determined.

 FY13 funds are expected to be executed via Military Interdepartmental Purchase Requests (MIPRs) to US Army Tank-Automotive Research, Development and Engineering Center (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.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	PE 0604622A: <i>Family of Heavy Tactical Vehicles</i>	VR5: <i>TWV Protection Kits</i>

FY14 funds are expected to be executed via Military Interdepartmental Purchase Requests (MIPRs) to US Army Tank-Automotive Research, Development and Engineering Center (TARDEC) and government test centers, such as, Army Evaluation Center (AEC), Operational Test Center (OTC), and Army Test Eval Center (ATEC).

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SBIR/STTR	C/TBD	WARREN, MI:TBD	0.000	0.058		-		-		-		-	0.000	0.058	0.000
Subtotal			0.000	0.058		0.000		0.000		0.000		0.000	0.000	0.058	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Analysis of Alternatives/ Design and Build Armor Kits	SS/CPFF	OshKosh Truck Corporation:OshKosh, WI	0.000	0.173	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Design and Build	MIPR	TBD:TBD	0.000	0.973	May 2012	-		0.850	Oct 2013	-		0.850	0.000	1.823	0.000
Vulnerability Modeling and Simulation	MIPR	Army Research Lab:Adelphi, MD	0.000	0.120	Aug 2012	-		0.120	Aug 2014	-		0.120	Continuing	Continuing	Continuing
Survivability Modeling & Simulation	MIPR	TARDEC:Warren, MI	0.000	0.250	Aug 2012	-		0.159	Aug 2014	-		0.159	0.000	0.409	0.000
Subtotal			0.000	1.516		0.000		1.129		0.000		1.129			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support	MIPR	TARDEC:Warren, MI	0.000	0.280	Feb 2012	0.600		0.170	Jul 2014	-		0.170	0.000	1.050	0.000
Subtotal			0.000	0.280		0.600		0.170		0.000		0.170	0.000	1.050	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	MIPR	Various Locations:Various Locations	0.000	-		2.427		0.750	Aug 2014	-		0.750	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		2.427		0.750		0.000		0.750			
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	1.854		3.027		2.049		0.000		2.049			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 (HET)																												
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 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 (HET)	2	2012	4	2012
Design and Build Armor Kits	2	2012	2	2015
Vulnerability Model & Simulation	4	2012	3	2017
Survivability Model & Simulation	2	2012	3	2017
Test and Evaluation	1	2013	3	2017
Program Support	2	2012	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	22.218	9.769	0.514	-	0.514	12.164	10.494	5.197	7.339	Continuing	Continuing
586: <i>AIR TRAFFIC CONTROL</i>	-	22.218	9.769	0.514	-	0.514	12.164	10.494	5.197	7.339	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 an ATC Tactical Network, the Tactical Airspace Integration System (TAIS) Web Based Architecture and Airspace Improvements Initiative, Advanced Surveillance, and Air Traffic Navigation Integration and Coordination System (ATNAVICS) modernization. ATNAVICS provides all weather instrument flight capabilities to include enroute, terminal, radar precision approach and landing services to all Army, Joint, and allied aircraft. 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.

Funded improvements to ATC systems, including TAIS, ATNAVICS, MOTS, and TTCS 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). This includes development of an ATC tactical network with individual data interfaces between any two ATC systems. The ATC Tactical Network is complete when TAIS, MOTS, ATNAVICS, and TTCS are all interconnected and share data and information between one another. This program element includes funding for development of each interface in a sequential manner with work allocated among four developers. 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 incorporated in the Advanced Surveillance program. Advanced Surveillance allows ATC reception of 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 radar picture and advanced surveillance data (Mode 5 and Mode S) to aviation and joint network nodes through TAIS. TAIS, the Airspace Management System of the Army Mission Command System (AMCS), 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). This will be accomplished through advanced surveillance interfaces, mission planning interfaces, and providing TAIS dynamic airspace updates to the cockpit. TAIS efforts also include developing and testing improvements

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>
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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.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	22.900	9.769	9.913	-	9.913
Current President's Budget	22.218	9.769	0.514	-	0.514
Total Adjustments	-0.682	0.000	-9.399	-	-9.399
• Congressional General Reductions	-0.014	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.668	-			
• Adjustments to Budget Years	-	-	-9.399	-	-9.399

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
586: <i>AIR TRAFFIC CONTROL</i>	-	22.218	9.769	0.514	-	0.514	12.164	10.494	5.197	7.339	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 an ATC Tactical Network, the Tactical Airspace Integration System (TAIS) Web Based Architecture and Airspace Improvements Initiative, Advanced Surveillance, and Air Traffic Navigation Integration and Coordination System (ATNAVICS) modernization. ATNAVICS provides all weather instrument flight capabilities to include enroute, terminal, radar precision approach and landing services to all Army, Joint, and allied aircraft. 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.

Funded improvements to ATC systems, including TAIS, ATNAVICS, MOTS, and TTCS 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). This includes development of an ATC tactical network with individual data interfaces between any two ATC systems. The ATC Tactical Network is complete when TAIS, MOTS, ATNAVICS, and TTCS are all interconnected and share data and information between one another. This program element includes funding for development of each interface in a sequential manner with work allocated among four developers. 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 incorporated in the Advanced Surveillance program. Advanced Surveillance allows ATC reception of 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 radar picture and advanced surveillance data (Mode 5 and Mode S) to aviation and joint network nodes through TAIS. TAIS, the Airspace Management System of the Army Mission Command System (AMCS), 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). This will be accomplished through advanced surveillance interfaces, mission planning interfaces, and providing TAIS dynamic airspace updates to the cockpit. TAIS efforts also include developing and testing improvements

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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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.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Tactical Airspace Integration System (TAIS)</p> <p align="right">Articles:</p> <p>Description: TAIS Block Upgrade: Airspace Information Center (AIC) and Airspace Integration Improvements Initiative (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 Accomplishments: Designed and developed TAIS service oriented architecture and web services in support of Airspace Command and Control (AC2) and AIC missions. Continued development of airspace deconfliction, flight information/advisory, situational awareness, and rapid clearance of fires capabilities. Continued development of AI3 initiatives to support dynamic AC2 capabilities and real-time situational awareness. Continued development of TAIS system interfaces to external data sources. Productized Phase III of Air Ground Modernization web services. Developed 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. Continued development of situational awareness to the cockpit capabilities. Continued 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>	<p>8.099</p> <p>0</p>	<p>6.758</p> <p>0</p>	<p>0.000</p>
<p>Title: Air Traffic Navigation Integration and Coordination System (ATNAVICS) Modernization</p> <p align="right">Articles:</p> <p>Description: ATNAVICS is a highly mobile tactical area surveillance and precision approach air traffic control radar system. It provides the Joint Force Commander, or Combatant Commander, with a mobile, self-contained, and reliable Airport Surveillance</p>	<p>11.500</p> <p>0</p>	<p>0.000</p>	<p>0.000</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Radar, Precision Approach Radar, and a Secondary Surveillance Radar capability. Product modernizations include radar interrogator modernization and radio upgrades.				
FY 2012 Accomplishments: Began integration of the TPX-57 transponder permitting international standard Mode 5 and Mode S compatibility of the ATNAVICS system.				
Title: Advanced Surveillance		0.806	1.750	0.000
		0	0	
Articles:				
Description: Advanced Surveillance technologies integration supports the non-recurring engineering, integration and test tasks required to incorporate the passive reception of self reporting technologies into Air Traffic Control programs. These Advanced Surveillance technologies include Automatic Dependent Surveillance-Broadcast (ADS-B), Mode 5 Level 2, Mode S and similar aircraft self reporting technologies.				
FY 2012 Accomplishments: Supported 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, Mode 5 Level 2, Mode S and similar self reporting technologies. Supported the continued software development to utilize these technologies. Tested these related technologies in a live fly field experiment and developed the associated documentation, analysis and integration data in order to accelerate the technology maturation process leveraged to support future block upgrade activities.				
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.				
Title: Common Tactical Simulator		0.791	0.000	0.000
		0		
Articles:				
Description: The ATC simulator can simulate a start to finish ATC scenario, meaning MOTS simulation at the airfield for take-off/landing under Visual Flight Rules, 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.				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> Completed the System Specification for the ATC Common Simulator.</p> <p><i>Title:</i> Tech and Log Support</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Technical and logistics services in support of PM ATC.</p> <p><i>FY 2012 Accomplishments:</i> Continued technical and logistic services in support of PM ATC.</p> <p><i>FY 2013 Plans:</i> Continue technical and logistics services in support of PM ATC.</p> <p><i>FY 2014 Plans:</i> Continue technical and logistic services in support of PM ATC.</p>	0.912 0	1.154 0	0.394
<p><i>Title:</i> Program Management Support</p> <p><i>Description:</i> Program Management Support of PM ATC.</p> <p><i>FY 2012 Accomplishments:</i> Continued program management in support of PM ATC.</p> <p><i>FY 2013 Plans:</i> Continue program management in support of PM ATC.</p> <p><i>FY 2014 Plans:</i> Continue program management in support of PM ATC.</p>	0.110 0	0.107 0	0.120
Accomplishments/Planned Programs Subtotals	22.218	9.769	0.514

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 <u>Base</u>	FY 2014 <u>OCO</u>	FY 2014 <u>Total</u>	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Air Traffic Control (AA0050): <i>Air Traffic Control</i>	114.844	47.235	79.692		79.692	116.026	100.999	101.629	114.227	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

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 and 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604633A: AIR TRAFFIC CONTROL	PROJECT 586: AIR TRAFFIC CONTROL
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support	Various	PM ATC:Redstone Arsenal, AL	0.116	0.110	Dec 2011	0.107	Dec 2012	0.120	Dec 2013	-		0.120	Continuing	Continuing	Continuing
Subtotal			0.116	0.110		0.107		0.120		0.000		0.120			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TAIS (Includes P3I/Native New Web Services Dev)	SS/T&M	General Dynamics C4S:Huntsville, AL	0.000	8.099	Dec 2011	6.758	Dec 2012	-		-		-	Continuing	Continuing	Continuing
ATNAVICs Modernization	SS/CPFF	Raytheon:Marlboro, Mass	0.500	11.500	Dec 2011	-		-		-		-	0.000	12.000	0.000
Advanced Surveillance	Various	Various:Various	0.621	0.806	Dec 2011	1.750	Feb 2013	-		-		-	Continuing	Continuing	Continuing
Common Tactical Simulator	Various	RDEC and:Various	0.000	0.791	Dec 2011	-		-		-		-	0.000	0.791	0.000
Tech and Log Development Support	Various	PM ATC:Huntsville, AL	0.763	0.912	Dec 2011	1.154	Dec 2012	0.394	Dec 2013	-		0.394	Continuing	Continuing	Continuing
Subtotal			1.884	22.108		9.662		0.394		0.000		0.394			

Project Cost Totals	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
	2.000	22.218	9.769	0.514	0.000	0.514			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604633A: <i>AIR TRAFFIC CONTROL</i>	PROJECT 586: <i>AIR TRAFFIC CONTROL</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
TAIS Continued Development																												
Adv Surv Continuation																												
Common Tactical Simulator																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
TAIS Continued Development	1	2015	4	2018
Adv Surv Continuation	1	2015	4	2017
Common Tactical Simulator	2	2012	4	2012

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	0.000	13.141	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
DV7: <i>Small Unmanned Ground Vehicle</i>	-	0.000	13.141	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

The Small Unmanned Ground Vehicle (SUGV) Engineering and Manufacturing Development (EMD) effort will continue under an alternate contract. Funding in FY12 is in Unmanned Ground Vehicles Program Element 0604663A Project FC4.

A. Mission Description and Budget Item Justification

One program is covered by the Tactical Unmanned Ground Vehicle (TUGV) 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, direct current 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, and 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 Planned Product Improvements (Increment 1 Follow on) designated as the XM1216E1: The SUGV configuration for a competitive Low Rate Initial Production (LRIP) moving to Full Rate Production (FRP) is based on the SUGV IBCT Capability Production Document 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, a 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).

The POM/BES 2014-2018 removed all funding for SUGV OPA and RDTE. The Program Manager briefed the Army Acquisition Executive on 10 Aug 12 and 04 Oct 12 resulting in a decision that the Army would cease work on the SUGV RDTE program and close out all efforts by May 2013.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	0.000	13.141	0.000	-	0.000
Current President's Budget	0.000	13.141	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DV7: <i>Small Unmanned Ground Vehicle</i>	-	0.000	13.141	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

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The POM/BES 2014-2018 removed all funding for SUGV OPA and RDTE. The Program Manager briefed the Army Acquisition Execution on 10 Aug 12 and 04 Oct 12 resulting in a decision that the Army would cease work on the SUGV RDTE program and close out all efforts by May 2013.

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

	FY 2012	FY 2013	FY 2014
Title: SUGV Product Improvement	0.000	13.141	0.000
Articles:		0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Description: Funding is provided for the following effort</p> <p>FY 2013 Plans: Complete the build, integration and delivery of seven SUGV production prototypes and payloads. Complete Engineering and Manufacturing Development (EMD) by 1QFY14. Technical Testing/Force Development Testing and Experimentation/Limited User Testing (TT/FDTE/LUT) will be conducted in the April-August 2013 timeframe leading up to a Milestone C competitive LRIP Decision in 1QFY14. The competitive LRIP will utilize the Technical Data Package (TDP) procured under the EMD contract. The EMD effort will integrate and test SUGV product improvements that utilize a point-to-point datalink, provide increased Intelligence, Surveillance and Reconnaissance (ISR) capability with the integrated militarized Electro Optical/Infrared (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 Embedded-Tactical Engagement Simulation System (E-TESS). Conduct Contractor and Government testing on the seven SUGV Production prototypes to evaluate performance: environments, platform mobility, radio performance for latency and range, EO/IR performance for personnel detection, payloads, shock/vibration, Reliability, Availability and Maintainability (RAM), Logistics and Training. Conduct LUT to assess operational utility and performance of the SUGV. The Informal Qualification Test and LUT testing will provide data to support the production decision that the fully integrated SUGV meets CPD 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	0.000	13.141	0.000

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• F00001: <i>OPA BCT Unmanned Ground Vehicle</i>	24.805	83.937								Continuing	Continuing
• 0604641A Project FC4: <i>RDTE FCS Unmanned Ground Vehicles</i>	35.966									Continuing	Continuing

Remarks

D. Acquisition Strategy
Funding continues engineering, manufacturing development follow-on ECP efforts leading to seven production prototypes.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604641A: <i>TACTICAL UNMANNED GROUND VEHICLE</i>	PROJECT DV7: <i>Small Unmanned Ground Vehicle</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 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 (Brigade 2)																												
SUGV Prototype Build/Delivery																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 (Brigade 2)	1	2013	1	2013
SUGV Prototype Build/Delivery	1	2013	2	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	68.442	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
E40: <i>LTV Prototype</i>	-	68.442	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

The High Mobility Multipurpose Wheeled Vehicle (HMMWV) is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. RDT&E efforts support Phase 1 of the Modernized Expanded Capacity Vehicle (MECV) Program, which will assess current light tactical vehicle survivability technologies through vehicle testing and modeling and simulation efforts. RDT&E efforts also support automotive improvements as a risk mitigation strategy for Diminishing Manufacturing Sources and material shortages due to halting new HMMWV production, and reductions to HMMWV Recapitalization and spares.

B. Program Change Summary (\$ in Millions)	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	69.981	0.000	0.000	-	0.000
Current President's Budget	68.442	0.000	0.000	-	0.000
Total Adjustments	-1.539	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.539	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
E40: <i>LTV Prototype</i>	-	68.442	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

The High Mobility Multipurpose Wheeled Vehicle (HMMWV) is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. RDT&E efforts support Phase 1 of the Modernized Expanded Capacity Vehicle (MECV) Program, which will assess current light tactical vehicle survivability technologies through vehicle testing and modeling and simulation efforts. RDT&E efforts also support automotive improvements as a risk mitigation strategy for Diminishing Manufacturing Sources and material shortages due to halting new HMMWV production, and reductions to HMMWV Recapitalization and spares.

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

	FY 2012	FY 2013	FY 2014
<p>Title: MECV-S (Survivability) Program</p> <p align="right">Articles:</p> <p>Description: MECV-S Planning and Development</p> <p>FY 2012 Accomplishments: Funding was provided for MECV-S</p>	20.000 0	0.000	0.000
<p>Title: MECV-A (Automotive and Mobility Improvements)</p> <p align="right">Articles:</p> <p>Description: To provide an approved sustainment alternatives to the current High Mobility Multipurpose Wheeled Vehicle (HMMWV) Expanded Capacity Vehicle (ECV)</p> <p>FY 2012 Accomplishments: Government technical data package</p>	20.000 0	0.000	0.000
<p>Title: The remaining is excess to the program</p> <p align="right">Articles:</p> <p>Description: The remaining is excess to the program</p>	28.442 0	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<i>FY 2012 Accomplishments:</i> The remaining is excess to the program			
Accomplishments/Planned Programs Subtotals	68.442	0.000	0.000

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• DV0230: <i>HMMWV</i>	4.313	271.000								0.000	275.313
<i>RECAPITALIZATION PROGRAM</i>											
<i>DV0230 OPA</i>											

Remarks

D. Acquisition Strategy

MECV-S: The acquisition strategy for Phase 1 of the Modernized Expanded Capacity Vehicle (MECV) Program is to assess current light tactical vehicle survivability technologies through vehicle testing and modeling and simulation efforts. The strategy involves a best value acquisition that will evaluate proposals and test rolling chassis' per Mine Resistant Ambush Protected (MRAP) Capabilities Production Document (CPD) 1.0 blast thresholds and objectives, and current theater threats. The effort will be conducted under a full and open competition Request for Proposal (RFP), resulting in up to six Firm Fixed Price (FFP) contracts. Vendors shall also provide models to be used for modeling and simulation excursions at higher threats and different soil conditions. The output of the contracts will be advancement on Army knowledge of technologies and techniques available, and their respective unit cost impacts which are critical to a successful protection system that may be applied to future Army Program of Records.

MECV-A: The acquisition strategy for the automotive improvements is to provide an approved sustainment alternative to the current High Mobility Multipurpose Wheeled Vehicle (HMMWV) Expanded Capacity Vehicle (ECV) engine as risk mitigation strategy for Diminishing Manufacturing Sources and material shortages due to halting new HMMWV production, and reductions to HMMWV Recapitalization and spares. The acquisition strategy is a phased approach utilizing trade studies, prototyping, and automotive performance testing. The end state is a Government Performance Specification package to support future procurement as desired. The effort is a non-developmental approach to incrementally update and improve the HMMWV.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MECV-S Prototype Vehicle Contract	C/FFP	TBD:TBD	0.000	13.000	May 2013	-		-		-		-	0.000	13.000	0.000
MECV-A HMMWV Sustainment Modification Initiative	MIPR	USMC:Quantico, VA	0.000	10.743	Oct 2012	-		-		-		-	0.000	10.743	0.000
Subtotal			0.000	23.743		0.000		0.000		0.000		0.000	0.000	23.743	0.000

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MECV-S Program Support and SSEB	MIPR	PM LTV:TACOM Warren, MI	0.101	0.200	Sep 2012	-		-		-		-	0.000	0.301	0.000
MECV-S Program Engineering Support	MIPR	TARDEC and PM LTV:TACOM Warren, MI	1.176	2.514	Sep 2012	-		-		-		-	0.000	3.690	0.000
Program Support for MECV-A HMMWV Mobility and Sustainment Initiative	MIPR	PD, LTV, TACOM:Warren, MI	0.000	1.296	Oct 2012	-		-		-		-	0.000	1.296	0.000
HMMWV STS Transmission Work Directive	SS/FFPLOE	AM General:Livonia, MI	0.000	2.276	Mar 2013	-		-		-		-	0.000	2.276	0.000
Requested funding to be reprogrammed for other Army requirements	TBD	TBD:TBD	0.000	28.442		-		-		-		-	0.000	28.442	0.000
Subtotal			1.277	34.728		0.000		0.000		0.000		0.000	0.000	36.005	0.000

Remarks
Not applicable

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>	PROJECT E40: <i>LTV Prototype</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
MECV RFP / Source Selection Evaluation Board (SSEB)																												
MECV Contract Award																												
Prototype Build																												
MECV Blast Testing																												
HMMWV Sustainment/Mobility Improvements Initiative Contract Award																												
Concept Prototype Build																												
HMMWV Sustainment/Mobility Improvements Testing																												
HMMWV Sustainment/Mobility Improvements NATO Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604642A: <i>LIGHT TACTICAL WHEELED VEHICLES</i>	PROJECT E40: <i>LTV Prototype</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MECV RFP / Source Selection Evaluation Board (SSEB)	2	2013	3	2013
MECV Contract Award	3	2013	3	2013
Prototype Build	3	2013	3	2013
MECV Blast Testing	4	2013	4	2013
HMMWV Sustainment/Mobility Improvements Initiative Contract Award	1	2013	1	2013
Concept Prototype Build	1	2013	4	2013
HMMWV Sustainment/Mobility Improvements Testing	1	2013	4	2013
HMMWV Sustainment/Mobility Improvements NATO Testing	4	2013	4	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems Engr & Program Mgmt</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	257.513	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
FC2: <i>BCT Equipping Evaluation</i>	-	257.513	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY13: Program was restructured to meet emerging requirements.

A. Mission Description and Budget Item Justification

This PE has no FY 2014 Base or OCO request.

B. Program Change Summary (\$ in Millions)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	298.589	0.000	0.000	-	0.000
Current President's Budget	257.513	0.000	0.000	-	0.000
Total Adjustments	-41.076	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-32.970	-			
• SBIR/STTR Transfer	-8.106	-			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
FC2: <i>BCT Equipping Evaluation</i>	-	257.513	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Several Acquisition Decision Memorandums (ADM), over a two year period from June 2009 to July 2011, incrementally terminated the FCS program and the associated Boeing contractual effort and replaced it with government led System of System Engineering and Analysis Efforts that resulted in the development of Agile Network Integration and Evaluation process.

A. Mission Description and Budget Item Justification

This program has no FY 2014 Base or OCO request.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Government Contract Close Out</p> <p align="right">Articles:</p>	0.579 0	0.000	0.000
<p>Description: Government's activities to terminate the Boeing FCS Production and RDTE contract.</p> <p>FY 2012 Accomplishments: In support of the Termination efforts of the Boeing contracts the following major activities were accomplished: - Conducted definitization proposals evaluations, audits, position development and negotiations on Engineering and Manufacturing Development (EMD) Contract. Base contract definitized in Dec 2012 - Provide Terminating Contractor Office (TCO) historical earned value analysis to support negotiation positions for both Prod and RDTE contracts - Worked with Contracting Office to provide historical data to resolve disputes, which involved effort Boeing believed to be directed contract changes eligible for equitable fee increases, and which the Government believed to be in-scope cost overruns not subject to additional fee - Continued to support the Termination settlements for all partial and total T4Cs, to include Other Termination Cost, Special Termination Cost, and lagging contract performance costs invoiced after 30 September 2011, are being negotiated by Defense Contract Management Agency (DCMA) Terminations Division - St. Louis - Worked with contracting office to resolve Data Rights resolution in governments best interest - Worked with DCMA to dispose of all EMD Property to other government agencies when possible.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
-Negotiate Contract de-obligations reducing Boeing contract value by almost \$300M.				
Title: Systems Under Evaluation (SUE) Integration 12.2 / 13.1		94.358	0.000	0.000
		0		
Articles:				
Description: Funds were provided to support integration of both industry and DOD emerging and existing technologies into the current Army force structure. This included Field Service Representative support for integration and test efforts for 12.2 & 13.1& 13.2. This included support of LOADEXs, COMMEs, PILOTs and execution of the Network Integration Evaluation (NIE) event.				
FY 2012 Accomplishments: Provided funding to support integration and evaluation of 43 SUEs during the Army's NIE 12.2 and 30 SUEs during NIE 13.1 and 3 SUEs for NIE 13.2. 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 prototype items 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. It also includes costs to support the NIE onsite preparation period to include support of Load-Exercise (LOADEX) followed by a Communication Exercise (COMME) conducted at FT Bliss TX (FTBX). The participating units and associated support FSRs were 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.				
Title: TEST/EXPERIMENTATION for NIE 12.2 / 13.1		38.988	0.000	0.000
		0		
Articles:				
Description: Funding was provided for the following effort: Planning and conducting detailed experiments, tests, and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system.				
FY 2012 Accomplishments: Planned and conducted detailed experiments, tests and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system. Completed test planning, coordination of requirements, assets planning, range planning and soldier planning. 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; 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, and REDFORCE systems. Conducted experimentations, tests, and evaluations and coordinating and procuring range resources which included range time, range				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>personnel, test engineering support, operators and subject matter experts on systems under evaluation. Included costs for the management of the test/experiment and support of all demonstrations experiments and tests. Included costs for the distributed networking capability (i.e. Defense Research and Engineering Network (DREN), I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between Aberdeen Proving Ground (APG), Electronic Proving Ground (EPG), FT Bliss and White Sands Missile Range. Completed coordination with Army Evaluation command (AEC) on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR) and maintained all data bases of evaluation analysis.</p>				
<p>Title: INTEGRATION: Dir SoS Integration</p> <p>Description: Provided for Dir SoS Integration staff and facilities that supported the following three main operations: Planning for future NIE events to include eventual Tactical Capability Set Fieldings, planning and execution of current NIE events. Headquarters management and oversight of the complete Agile process. Funding for FY12 supported three NIE events.</p> <p>FY 2012 Accomplishments: Government and contract personnel developed the overarching plans for NIEs 12.2 and 13.1 and 13.2. Completed Capability Package (CP) development which included; defining what is affordable and defining what could be realistically accomplished within the NIE window. Conducted requirements traces across both NIE portfolios by conducting current requirements analysis, identifying gaps and overlaps, and identifying solution sets. Conducted Network Analysis for both NIEs by completing initial and high level fidelity reviews. In support of these NIEs; the team conducted sources sought procedures, Request for Proposal (RFP), completed evaluation of submissions, planned vignettes, completed architecture analysis, developed and published which systems would participate in each NIE as either a System Under Test (SUT) or a System Under Evaluation (SUE) and defined what the Tech Base capabilities would be included in the evaluation. Conducted data and configuration management. Conducted vehicle integration and Size, Weight, and Power (SWaP) analysis in support of both NIEs. Completed the development of the standards for hardware and software optimization, integration and interoperability. Developed Network Operations (NETOPS) by defining communications settings, interfaces, and configuration which included; Traffic Engineering (Shared Networks) for Software Services & Communications in order to maximize the use of bandwidth. Developed and managed an Integrated Master Schedule (IMS). Developed and managed budget execution. Developed Knowledge Management plans and procedures and incorporated them in to the NIE procedures. Conducted security planning and technology services. Conducted logistics development and planning in support of both NIEs. Coordinated with ASAALT as they assigned PMs to be Non-Program of Record (POR) SUE sponsors and as they determined which POR/SUEs were selected for participation in each NIE. Conducted daily operations and the execution of the NIE 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. For both NIEs, developed a brigade level architecture utilizing the top level plan provided</p>		<p>42.712</p> <p>Articles: 0</p>	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>by SoSE&I NIE Planning Division 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. It also conducted detailed planning and development of the architecture and vignettes, and Information Assurance (IA). It established metrics and measures across the SUTs/SUEs, and identified and implemented tools, data points and data collection measures for the NIE process improvement. It completed analysis and assessments of the selected integrated experimental systems to determine optimal brigade configuration and the best solutions to fill the known requirements gaps. It conducted IA efforts, which included; plan/execute C4ISR/vehicle/platform integration, system checkouts, and the coordination of system support between training and logistics assets. Coordinated effectors between 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 included; establishing/maintaining & tracking communications during both NIEs within a 7,600 square mile footprint, maintained IT and equipment support within buildings disbursed over 7,600 square miles. Setup and maintained security access for over 7,000 soldiers, government, contracted and industry personnel during each NIE. Conducted IA, accreditation and certification which included; test but verify, coordinating for Designated Approval Authority (DAA) approvals, and all technology services. Conducted After Action Reviews (AAR) for both NIEs, which provided Army leadership recommendation for improving operational requirements and enhancing technical specifications. Conducted command and control and staff support throughout the complete agile process which included: Program Management, Administrative, Tech Services, IT, Graphics, Defense Travel System (DTS) support, Facilities Execution, Knowledge Management Execution, Security Execution, Business Management, and Acquisition Management. Developed and supported budget submittals and timely responded to all program inquiries. Conducted personnel management support for the SoSI. Coordinated all higher headquarters, congressional, and media inquiries, questions and audits.</p>				FY 2013
				FY 2014
<p>Title: Architecture Development and System Engineering</p> <p align="right">Articles:</p> <p>Description: Funding was provided for the following effort: Provided government and contractor support staff to Dir SoS Integration to support their technological specialty throughout the Agile Process, NIE Architecture, NIE System Engineering, and NIE Systems Integration.</p> <p>FY 2012 Accomplishments: Funded Subject Matter Expertise from other Army PEOs and PMs that supported the Dir SoS Integration while conducting the following: Assisted in developing and defining what was affordable and could be realistically accomplished within the integration and NIE test window to support future Tactical Capability Packages. Conducted 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, participated in sources sought procedures, completing evaluation of submissions, planning vignettes, and completing architecture analysis. Assisted in the development of the Network Operations (NETOPS) by defining</p>				13.172 0
				0.000
				0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
communications settings, interfaces, and configuration which included; Traffic Engineering (Shared Networks) for Software Services & Communications in order to maximize the use of bandwidth. Supported IA coordination. Participated in System Under Test/System Under Evaluation (SUT/SUE) network integration assessments and analysis for both NIEs. Supported the development of the brigade level network architecture for each NIE event. Supported the detailed planning of the architecture and vignettes, and IA plans. Supported the establishment of metrics and measures across the SUTs/SUEs, and assisted in identifying and implementing tools, data points and data collection measures for the NIE. Assisted in integrating hardware and software from different systems into existing platforms. Supported the development of test tools and instrumentation procedures to support data analysis, and provided detailed recommendations. Supported IA which included; planning/executing the C4ISR/vehicle/platform integration, system checkout, and the coordination of system support between training and logistics assets.				
Title: Infrastructure				
Articles:		7.766	0.000	0.000
Description: Provided for Infrastructure, (facilities, IT support, computers, Black Berries, program IA, etc.) at all SOSI locations.		0		
FY 2012 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), and Washington Capital Region. Included lease and support maintenance of General Services Administration (GSA)/Government Furnished equipment (GFX) vehicles that supported the /NIE mission at FTB/WSMR. These funds also provided for the purchase or lease, integration, and maintenance of telecommunications equipment; e.g. routers, network management software, blackberries, PDAs, computers, Antennas, display screens, radios, and associated mounting hardware and cables to support NIE missions. Purchased and integrated computer software to support scheduling, agile Request For Information (RFI) selection, the evaluation and budget processes, integration analysis, modeling and simulation, network analysis, data collection, and analyzing test results. These funds also included the costs to lease facilities needed to store/maintain/integrate capability sets on to vehicle platforms.				
Title: Common Operating Environment (COE): Dir SoS Integration SYSTEMS ENGINEERING				
Articles:		6.126	0.000	0.000
Description: Provided technical support and coordination between Dir SoS Integration and Chief System Engineering Directorate for Common Operating Environment (COE).		0		
FY 2012 Accomplishments: Established and maintained a software support repository for configuration control and re-distribution of the Tactical COE and COE-based Applications. Established 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,				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>		PROJECT FC2: <i>BCT Equipping Evaluation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
assessment and deployment. Chaired the design forum across the affected PEOs and Software Centers to establish the architectural design rules which enabled proper convergence of a COE across the Army Enterprise. Evaluated existing software components from SOSCOE, JCR, JBC-P, BCS and other agencies for use in a Tactical COE for all computing environments. Provided help desk and integration support to COE application developers across PEOs, reducing the overall integration time and cost to implement. Conducted rapid prototyping and integration of capabilities across legacy and emerging systems which demonstrated military utility in the BCT Integration Events and other appropriate venues. Established design leadership within the AMC Software Centers for the COE and Army Networking by shifting this work from the contractor base into the Army's organic staff and organizations. Defined and governed COE standards and policies which ensured information sharing between tactical systems across the Army Network.				
Title: SoS ENGINEERING: System of Systems INTEGRATION (SoSI)		6.590	0.000	0.000
		Articles: 0		
Description: To provide technical support and coordination between System of Systems Integration (SoSI) and Systems of Systems Engineering for Army level Systems of Systems Architectures.				
FY 2012 Accomplishments: Provided the Army's initial SoS engineering policies, guidelines, and standards for Brigade and Network Brigade TCS Integration. Established and managed a SoS Engineering Baseline within an Integrated Data Environment which evaluates emerging capabilities. Finalized Brigade-level architectures for the Army's agile process to demonstrate required functionality between weapons and support systems within the BCT. Developed and distributed the standards required to improve commonality of integration approaches. Documented current ground/air/lethality/C4ISR systems performance characteristics (i.e. Size, Weight and Performance "Cooling (SWaP-C)) to aid and standardize development and integration approaches. Established and standardized the Modeling and Simulation (M&S)/Analysis tool kit required for evaluation and risk reduction of emerging capability needs (i.e. Operational Needs Statement/Joint Urgent Operational Needs Statement (ONS)/JUONS).				
Title: Army Withhold		47.222	0.000	0.000
		Articles: 0		
Description: Withdrawn for other Army Priorities. (i.e. 13-05 PA Reprogramming Request)				
FY 2012 Accomplishments: - Withdrawn for other Army Priorities. (i.e. 13-05 PA Reprogramming Request) - Army withhold for Sequestration				
Accomplishments/Planned Programs Subtotals		257.513	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Army Withhold	Various	N/A &:N/A	0.001	47.222	Sep 2012	-		-		-		-	0.000	47.223	0.000
Subtotal			0.001	47.222		0.000		0.000		0.000		0.000	0.000	47.223	0.000

Remarks
N/A

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Under Evaluation (SUE) Integration 12.2 / 13.1	Various	Various &:Various	0.000	94.358	Dec 2011	-		-		-		-	0.000	94.358	0.000
Integration - Dir SoS Integration	Various	Various &:Various	0.000	42.712	Dec 2011	-		-		-		-	0.000	42.712	0.000
SoS Engineering: SoS Integration (SOSI)	Various	Various &:Various	0.000	6.590	Dec 2011	-		-		-		-	0.000	6.590	0.000
Common Operating Environment (COE): Dir SoS Integration Sys Eng	Various	Various &:Various	0.000	6.126	Dec 2011	-		-		-		-	0.000	6.126	0.000
Infrastructure	Various	Various &:Various	0.000	7.766	Dec 2011	-		-		-		-	0.000	7.766	0.000
Architecture Development and Sys Eng	Various	Various &:Various	0.000	13.172	Dec 2011	-		-		-		-	0.000	13.172	0.000
Subtotal			0.000	170.724		0.000		0.000		0.000		0.000	0.000	170.724	0.000

Remarks
Note:1
- All funding executed from SoSI (Warren MI)
- Program Activities performed at Ft Bliss (TX), White Sands Missile Range (NM), Aberdeen Proving Ground (MD), TACOM (Warren MI)
- Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Contract Close Out	Various	Various &: Various &	0.000	0.579	Dec 2011	-		-		-		-	0.000	0.579	0.000
Subtotal			0.000	0.579		0.000		0.000		0.000		0.000	0.000	0.579	0.000

Remarks
 Note:1
 - All funding executed from SoSI (Warren MI)
 - Program Activities performed at TACOM (Warren MI)

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Experimentation for NIE 12.2 / 13.1	Various	Various &: Various	0.000	38.988	Dec 2011	-		-		-		-	0.000	38.988	0.000
Subtotal			0.000	38.988		0.000		0.000		0.000		0.000	0.000	38.988	0.000

Remarks
 Note:1
 - All funding executed from SoSI (Warren MI)
 - Program Activities performed at Ft Bliss (TX), White Sands Missile Range (NM), Aberdeen Proving Ground (MD), TACOM (Warren MI)

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.001	257.513	0.000	0.000	0.000	0.000	0.000	257.514	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>
PROJECT FC2: <i>BCT Equipping Evaluation</i>	

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 12.2 Candidate Solution Integration	■	■	■	■																								
NIE 12.2 LoadEx	■	■	■	■																								
NIE 12.2 CommEx (4 days)			■	■																								
NIE 12.2 Pilot (10 days)			■	■																								
NIE 12.2 Event			■	■																								
NIE 12.2 Event Analysis & Summary			■	■																								
NIE 13.1 Planning - Execution	■	■	■	■	■	■	■	■	■																			
NIE 13.1 Industry Day	■	■	■	■																								
NIE 13.1 Decision Point 1	■	■	■	■																								
NIE 13.1 Decision Point 2			■	■																								
NIE 13.1 Lab Integration / Testing	■	■	■	■	■	■	■	■	■																			
NIE 13.1 Candidate Solution Integration			■	■	■	■	■	■	■																			
NIE 13.1 LoadEx			■	■																								
NIE 13.1 CommEx (5 days)					■	■	■	■	■																			
NIE 13.1 Pilot (7 days)					■	■	■	■	■																			
NIE 13,1 Event					■	■	■	■	■																			
NIE 13.1 Event Analysis & Summary					■	■	■	■	■																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604661A: <i>FCS Systems of Systems</i> <i>Engr & Program Mgmt</i>	PROJECT FC2: <i>BCT Equipping Evaluation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 12.2 Candidate Solution Integration	2	2012	3	2012
NIE 12.2 LoadEx	2	2012	3	2012
NIE 12.2 CommEx (4 days)	3	2012	3	2012
NIE 12.2 Pilot (10 days)	3	2012	3	2012
NIE 12.2 Event	3	2012	3	2012
NIE 12.2 Event Analysis & Summary	3	2012	4	2012
NIE 13.1 Planning - Execution	2	2012	1	2013
NIE 13.1 Industry Day	2	2012	2	2012
NIE 13.1 Decision Point 1	2	2012	2	2012
NIE 13.1 Decision Point 2	3	2012	3	2012
NIE 13.1 Lab Integration / Testing	2	2012	4	2012
NIE 13.1 Candidate Solution Integration	3	2012	4	2012
NIE 13.1 LoadEx	4	2012	4	2012
NIE 13.1 CommEx (5 days)	1	2013	1	2013
NIE 13.1 Pilot (7 days)	1	2013	1	2013
NIE 13.1 Event	1	2013	1	2013
NIE 13.1 Event Analysis & Summary	1	2013	1	2013

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	34.845	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
FC4: <i>BCT UNMANNED GROUND VEHICLES</i>	-	34.845	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 (TUGV) Program Element 0604641A Project DV7.

The Small Unmanned Ground Vehicle (SUGV), designated as the XM1216, is a lightweight (32 lbs), man-portable, direct-current powered UGV capable of conducting Military Operations in Urban Terrain (MOUT), including 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, and 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 Planned Product Improvements (Increment 1 Follow on) designated as the XM1216E1: The SUGV configuration for a competitive 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, a 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 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604663A: <i>FCS Unmanned Ground Vehicles</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	35.966	0.000	0.000	-	0.000
Current President's Budget	34.845	0.000	0.000	-	0.000
Total Adjustments	-1.121	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-1.121	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
FC4: <i>BCT UNMANNED GROUND VEHICLES</i>	-	34.845	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

The FY2013 funding continues under Tactical Unmanned Ground Vehicle (TUGV) 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 (TUGV) Program Element 0604641A Project DV7.

The Small Unmanned Ground Vehicle (SUGV), designated as the XM1216, is a lightweight (32 lbs), man-portable, direct-current powered UGV capable of conducting Military Operations in Urban Terrain (MOUT), including 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, and 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 Planned Product Improvements (Increment 1 Follow on) designated as the XM1216E1: The SUGV configuration for a competitive 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, a 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 2012	FY 2013	FY 2014
Title: SUGV Product Improvement	26.755	0.000	0.000
Articles:	0		
Description: Funding is provided for the following effort			
FY 2012 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012
				FY 2013
				FY 2014
<p>FY 2012 Description: Complete the build, integration and delivery of five prototypes and payloads in the September 2011-September 2012 timeframe. Conduct termination of Prime SUGV contractor. Award a follow-on SUGV contract to complete development of SUGV Engineering and Manufacturing Development (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 seven SUGV Production prototypes. Tasks include preparing A Spec, B spec and Statement of Work (SOW). 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 (CDR) to finalize current design and assess that design to the SUGV CPD. Utilize prototypes to assess CDR to meet CPD requirements and operational utility, (Oct11-Sep12) 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 Handheld/Manpack/Small Form Fit (HMS) Soldier Radio Waveform (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 Key Performance Parameters (KPPs) for day and night recognition. Award follow-on contract (Sep 12) to finalize design, build production prototypes and conduct contractor/government testing. Conduct Delta Critical Design Review (CDR) 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: Handheld/Manpack/Small Form Fit (HMS) Soldier Radio Waveform (SRW) radio, Operator Control unit, Software, Payloads: tether, manipulator arm, CBRN detection and E-TESS. Evaluate design to meet CPD requirements. Build seven SUGV Production prototypes (Sep 12-Mar13) with payloads. Conduct integration and contractor checkout of SUGV Production prototypes to include payloads. Prepare for and conduct Developmental Testing (DT) and Operational Testing (OT) in FY13 to complete EMD.</p>				
<p>Title: GOVERNMENT SYSTEMS ENGINEERING/PROGRAM MANAGEMENT</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Accomplishments: 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 Brigade Combat Team Modernization (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. FY12 efforts will involve major initiatives: completing TDP, developing competitive</p>				<p>6.802</p> <p>0</p>
				0.000
				0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
selection criteria for follow-on contract, developing milestone documentation and analysis to support creation of Acquisition Program Baseline (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		1.288	0.000	0.000
		Articles: 0		
Description: Funding is provided for the following effort.				
FY 2012 Accomplishments: 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 Handheld/Manpack/Small Form Fit (HMS) Soldier Radio Waveform (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.				
Accomplishments/Planned Programs Subtotals		34.845	0.000	0.000
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Multifunction Utility/ Logistics Equipment Vehicle (MULE-CM & MULE-T) SPECIAL TERMINATION	Various	The Boeing Company:Various	2.500	-		-		-		-		-	0.000	2.500	2.500
Subtotal			2.500	0.000		0.000		0.000		0.000		0.000	0.000	2.500	2.500

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Small Unmanned Ground Vehicle (SUGV)	Various	The Boeing Company:St Louis, MO	43.150	19.905	Jul 2012	-		-		-		-	0.000	63.055	57.350
Small Unmanned Ground Vehicle (SUGV)	SS/CPIF	i Robot Corporation:Burlington, MA	0.000	9.000		-		-		-		-	0.000	9.000	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	28.905		0.000		0.000		0.000		0.000	0.000	348.673	346.968

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GOVERNMENT SEPM	Various	PEO GCS:Warren, MI	0.150	4.652		-		-		-		-	0.000	4.802	7.628
Subtotal			0.150	4.652		0.000		0.000		0.000		0.000	0.000	4.802	7.628

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GOVERNMENT TEST & EVALUATION M&S	Various	PEO GCS:Warren, MI	0.000	1.288		-		-		-		-	0.000	1.288	1.288
Subtotal			0.000	1.288		0.000		0.000		0.000		0.000	0.000	1.288	1.288

Project Cost Totals	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
	322.418	34.845	0.000	0.000	0.000	0.000	0.000	357.263	358.384

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 - 3)			■																									
SUGV EMD Follow On Contract Award				■																								
SUGV Prototype Build/Delivery							■																					
Incr 1 Production Delivery (Brigades 4-5)								■																				
SUGV Testing (IQT)							■																					
SUGV Testing (LUT)												■																
Milestone C Low Rate Initial Production Review (MSC/LRIP REV)												■																

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 - 3)	3	2012	3	2012
SUGV EMD Follow On Contract Award	4	2012	4	2012
SUGV Prototype Build/Delivery	1	2013	2	2013
Incr 1 Production Delivery (Brigades 4-5)	2	2013	4	2013
SUGV Testing (IQT)	2	2013	3	2013
SUGV Testing (LUT)	4	2013	4	2013
Milestone C Low Rate Initial Production Review (MSC/LRIP REV)	1	2014	1	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	55.412	32.621	43.405	-	43.405	37.581	24.084	15.581	22.585	Continuing	Continuing
L67: <i>Soldier Night Vision Devices</i>	-	23.268	0.000	11.271	-	11.271	16.987	13.880	12.773	19.729	Continuing	Continuing
L70: <i>Night Vision Dev Ed</i>	-	9.900	11.116	6.669	-	6.669	5.819	0.812	0.000	0.000	Continuing	Continuing
L75: <i>Profiler</i>	-	2.512	0.000	2.759	-	2.759	3.605	0.936	0.000	0.000	Continuing	Continuing
L76: <i>Dismounted Fire Support Laser Targeting Systems</i>	-	0.000	0.000	1.100	-	1.100	1.119	1.138	1.157	1.177	Continuing	Continuing
L79: <i>Joint Effects Targeting Systems (JETS)</i>	-	19.732	21.505	21.606	-	21.606	10.051	7.318	1.651	1.679	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Program Change Summary Explanation:

Fiscal Year 2012: Program decreases of \$2.389 million to Project L70, \$.081 million to Project L75, \$0.678 million to Project L67 and \$0.635 million to Project L79 which were realigned to higher priority Army efforts.

Fiscal Year 2014: Program increases of \$6.669 million to Project L70 for Next Generation FLIR B Kit and sensor development, program increase of \$2.759 million to Project L75 for Profiler development activities and program increase of \$1.100 million to Project L76 for Dismounted Fire Support Targeting System development efforts. Program decreases of -\$3.504 million to Project L67 and \$6.584 million to Project L79 realigned to higher priority Army efforts.

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 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-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>
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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.

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; 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).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	59.195	32.621	42.965	-	42.965
Current President's Budget	55.412	32.621	43.405	-	43.405
Total Adjustments	-3.783	0.000	0.440	-	0.440
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-3.783	-	0.440	-	0.440

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
L67: <i>Soldier Night Vision Devices</i>	-	23.268	0.000	11.271	-	11.271	16.987	13.880	12.773	19.729	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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. Further, this funding supports the development, test, and evaluation of Preemptive Threat Detection (PTD) through EMD. 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 2012	FY 2013	FY 2014
<p>Title: Enhanced Night Vision Goggle (ENVG)</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 2012 Accomplishments: Completed Production Qualification Testing (PQT) for multiple sources of AN/PSQ-20 (Enhanced Night Vision Goggle).</p> <p>FY 2014 Plans: Initiate production qualification testing for multiple (AN/PSQ-20) new contracts.</p>	1.901 0	0.000	1.735
<p>Title: Sense Through The Wall (STTW)</p> <p align="right">Articles:</p> <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 2012 Accomplishments:</p>	5.747 0	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Completed software modifications to enhance sensors performance and completed operational test activities.				
<p>Title: Family of Weapons Sights (FWS)</p> <p>Articles:</p> <p>Description: FWS is a family of weapon sights that utilize advances in thermal and image intensified technologies to produce Individual (I) , Crew-Served (CS), and Sniper (S) 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 2012 Accomplishments: In FY 2012, accelerated delivery of FWS I prototypes, developed technical requirements for wireless Rapid Target Acquisition (RTA) and used modeling and simulation efforts to identify capability increases provided by the FWS-I. Additionally, continued development of High Definition (HD) thermal sensor and Electron Bombarded Active Pixel Sensor (EBAPS) for use in the FWS-CS prototypes.</p> <p>FY 2014 Plans: Will initiate and perform Engineering and Manufacturing Development (EMD) for the FWS Individual (FWS-I) variant. EMD tasks include refining the FWS-I design and producing production representative hardware that will enable an FY 2015 Limited User Test (LUT) and Milestone C.</p>		15.418 0	0.000	9.536
<p>Title: Small Tactical Optical Rifle Mounted</p> <p>Articles:</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 2012 Accomplishments: Completed production qualification testing for second source.</p>		0.202 0	0.000	0.000
Accomplishments/Planned Programs Subtotals		23.268	0.000	11.271

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 603774A VT7: <i>603774A - Night Vision Systems Advanced Development (VT7)</i>		10.715	9.066		9.066	6.208	5.260	5.193	5.000	Continuing	Continuing
• <i>Helmet Mounted Enhanced Vision Devi: Helmet Mounted Enhanced Vision Devices (HMEVD) (SSN K36400)</i>	119.078	125.917	167.379		167.379	174.861	183.695	121.581	64.238	Continuing	Continuing
• <i>Thermal Weapon Sight (TWS): Thermal Weapon Sight (TWS) (SSN K22900)</i>	176.972	82.162	14.074		14.074	95.920	141.121	143.565	154.000	Continuing	Continuing
• <i>Sniper Night Sight (SNS): Sniper Night Sight (SNS) (SSN K41500)</i>	0.661	11.660						11.240	19.838	Continuing	Continuing
• <i>Sense Through The Wall (STTW): Sense Through The Wall (STTW) (SSN KA2300)</i>	10.000	6.212	0.142		0.142					0.000	16.354
• <i>Small Tactical Optical Rifle Mounte: Small Tactical Optical Rifle Mounted (STORM) (SSN K35110)</i>	10.227	20.717	22.300		22.300	20.319	15.305	15.025	21.611	Continuing	Continuing

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PROGRAM MGMT	MIPR	Various:Various	0.000	0.946	Apr 2012	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	0.946		0.000		0.000		0.000		0.000			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sense Through The Wall (STTW)	MIPR	Various:Various	1.963	4.542	Dec 2011	-		-		-		-	0.000	6.505	0.000
Family of Weapon Sights (FWS)	MIPR	Various:Various	5.939	9.965	Feb 2012	-		9.304	Mar 2013	-		9.304	Continuing	Continuing	Continuing
Advanced Weapon Sight Technologies (AWST)	MIPR	Various:Various	0.000	4.714	May 2012	-		-		-		-	0.000	4.714	0.000
Subtotal			7.902	19.221		0.000		9.304		0.000		9.304			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Matrix Support	Various	NVESD:Ft Belvoir, VA	0.363	1.323	Feb 2012	-		0.232	Dec 2014	-		0.232	Continuing	Continuing	0.000
Matrix Support	Various	TACOM:Warren, MI	0.789	-		-		-		-		-	0.000	0.789	0.000
Subtotal			1.152	1.323		0.000		0.232		0.000		0.232			0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Test Support Activity	Various	Army Test and Evaluation Command:Various	39.782	1.778	Dec 2011	-		1.735		-		1.735	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			39.782	1.778		0.000		1.735		0.000		1.735			
Project Cost Totals			48.836	23.268		0.000		11.271		0.000		11.271			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
ENVG Production Qualification Testing																												
FWS-I MS B																												
FWS-I Engineering and Manufacturing Development																												
FWS-I MS C																												
FWS-I Development/Operational Testing																												
FWS-CREW SERVED (CS) MS B																												
FWS-CS Engineering and Manufacturing Development																												
FWS- SNIPER (S)																												
FWS- S Engineering and Manufacturing Development																												
PTD MS B																												
PTD Engineering and Manufacturing Development																												
PTD MS C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
ENVG Production Qualification Testing	3	2014	3	2015
FWS-I MS B	2	2014	2	2014
FWS-I Engineering and Manufacturing Development	2	2014	4	2015
FWS-I MS C	2	2015	2	2015
FWS-I Development/Operational Testing	3	2015	4	2016
FWS-CREW SERVED (CS) MS B	2	2015	2	2015
FWS-CS Engineering and Manufacturing Development	2	2015	4	2016
FWS- SNIPER (S)	1	2016	1	2016
FWS- S Engineering and Manufacturing Development	2	2016	3	2017
PTD MS B	1	2016	1	2016
PTD Engineering and Manufacturing Development	2	2016	4	2017
PTD MS C	1	2018	1	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
L70: <i>Night Vision Dev Ed</i>	-	9.900	11.116	6.669	-	6.669	5.819	0.812	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 will leverage critical technologies from the Advanced Thermal Imaging EMD effort and Combat Vehicle Advanced Sensor Technology (CVASt) to develop a common Improved-Forward Looking Infrared (I-FLIR) B-Kit for integration into US Army FLIR sensor systems including emerging requirements of I-FLIR Army Combat and reconnaissance sensor systems to the Ground Combat Vehicle Infantry Fighting Vehicle (GCV IFV), Abrams, and Bradley. The I-FLIR B-Kit provides Mid Wave Infrared and Long Wave Infrared digital video and the electronic interfaces required to integrate the Next Generation FLIR (NGF) technology with the host platform sensor. 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 I-FLIR B-Kit will also be used to enhance mobility by maintaining current range performance in significantly smaller and lighter sensor packages.

This project also supports the Army Sensor Computing Environment effort in support of the Common Operating Environment (COE) vision. It focuses on the improving the network interoperability requirement and improving the soldier - machine interface. Resultant improvements would be implemented through upgrades to fielded systems, or informing future programs.

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 also supports development efforts for the I-FLIR B-Kit, to include specification development, integration analysis, milestone and solicitation preparation activities, and continues development and implementation of Block II Electro Optic Counter-Counter Measures (EOCCM). In addition, this project also supports the development of meeting the Army's network interoperability requirements and improving the soldier - machine interface.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>
<p>FY 2014 Base Funding in the amount of \$6.669 Million supports I-FLIR B-Kit component and sensor integration assessments, milestone and solicitation preparation activities, and also supports the continued activities associated with meeting network interoperability requirements and improving the soldier - machine interface in support of the Army's vision of the Common Operating Environment (COE).</p>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<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 2012 Accomplishments: FY 2012 Base Funding supported completion of qualification testing, System Verification Review, and contract closeout activities.</p>		1.379 0	0.000	0.000
<p>Title: Improved-Forward Looking Infrared (I-FLIR) B-Kit</p> <p align="right">Articles:</p> <p>Description: Development of the I-FLIR B-Kit. The I-FLIR 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 2012 Accomplishments: FY 2012 Base Funding supported I-FLIR B-Kit performance spec & interface control document development, platform requirements decomposition, and maturation of critical technologies.</p> <p>FY 2013 Plans: Following FY12 approval of the I-FLIR CDD and Platform ECP/Sensor Upgrade programs, funding supports I-FLIR B-Kit specification development and I-FLIR B-Kit MS B preparation activities.</p> <p>FY 2014 Plans: FY 2014 Base Funding will support I-FLIR B-Kit component and platform sensor integration assessments. Funding will also support milestone and solicitation preparation activities.</p>		5.790 0	6.909 0	6.069
<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>		2.731 0	4.207 0	0.600

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> FY 2012 Base Funding supports Developed Systems Engineering plan and path forward to meet the network interoperability requirement and improving the soldier - machine interfaces for COE execution plan.</p> <p><i>FY 2013 Plans:</i> 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> <p><i>FY 2014 Plans:</i> FY 2014 Base Funding supports continued development of meeting the network interoperability requirement and improving the soldier - machine interface. Resultant improvements would be implemented through upgrades to fielded systems, or informing future programs. This effort continues the Army Sensor Computing Environment (CE) effort in support of the Common Operating Environment (COE) vision.</p>			
Accomplishments/Planned Programs Subtotals	9.900	11.116	6.669

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• GCV (PE 0605625A FC8): <i>Ground Combat Vehicle (PE 0605625A FC8)</i>	434.977	639.874	592.201		592.201	953.081	948.718	718.000	550.037	Continuing	Continuing
• ABRAMS Tank Improvement Program: <i>Abrams Tank Improvement Program (PE 0203735A)</i>	9.347	97.278	101.319		101.319	135.228	110.917	90.042	34.115	Continuing	Continuing
• BRADLEY Improvement Program: <i>Bradley Improvement Program (PE 0203735A)</i>	11.858	82.586	76.213		76.213	84.709	59.010	40.539		0.000	354.915
• LRAS3 (K38300): <i>Long Range Advanced Scout Surveillance System (LRAS3) (K38300) OPA2</i>	102.334		5.183		5.183					0.000	107.517

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

Comment: Above figures reflect PB14 budget.

D. Acquisition Strategy

The development programs in this project are currently based on competitive awards and under cost reimbursement type contracts. Following approval of the I-FLIR CDD planned activities include I-FLIR B-Kit component and sensor integration assessments, as well as milestone and solicitation preparation activities. Additional activities include continued development of meeting the network interoperability requirement and improving the soldier - machine interface in support of the Army's vision of the Common Operating Environment (COE).

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Management	C/FP	PM, NV/RSTA:Ft. Belvoir, VA	8.239	0.216	Apr 2012	0.616	Sep 2013	0.229	Mar 2014	-		0.229	0.000	9.300	9.454
Subtotal			8.239	0.216		0.616		0.229		0.000		0.229	0.000	9.300	9.454

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.000	0.049	Jun 2012	2.918	Mar 2013	-		-		-	0.000	2.967	7.535
Improved-Forward Looking Infrared (I-FLIR) B-Kit	TBD	Various:Various	0.000	4.461	Sep 2012	-		3.249	Mar 14	-		3.249	0.000	7.710	0.000
Gunshot Detection Systems	RO	ARDEC:Aberdeen Proving Grounds (APG)	2.211	-		-		-		-		-	0.000	2.211	2.211
PSS P3I	C/FP	TBD:TBD	0.000	2.244	Sep 2012	3.591	Mar 2013	-		-		-	0.000	5.835	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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Remotely Operated HMDS (Husky Mounted Detection System)	C/CPFF	EOIR:Fredericksburg VA	7.700	-		-		-		-		-	0.000	7.700	7.000
Subtotal			32.163	6.754		6.509		3.249		0.000		3.249	0.000	48.675	47.902

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
I-FLIR Support	Various	Various:Various	22.244	2.658	Sep 2012	3.991	Mar 2013	2.820	Mar 14	-		2.820	0.000	31.713	27.995
COE Support	Various	Various:Various	0.000	0.272	Apr 2012	-		0.371	Mar 14	-		0.371	Continuing	Continuing	0.000
Subtotal			22.244	2.930		3.991		3.191		0.000		3.191			27.995

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Test Support*	MIPR	Various:Various	15.850	-		-		-		-		-	0.000	15.850	15.850
Subtotal			15.850	0.000		0.000		0.000		0.000		0.000	0.000	15.850	15.850

Remarks
* Includes PSDS2, UGS, STTW, 3GF, PSDS2, FCS UGS and other sensor test and evaluation activities.

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		78.496	9.900	11.116	6.669	0.000		6.669	101.201

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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

Thermal Imaging - Develop, Fab and Qual of Ground Platform Engine with BII EOCCM	
PSS P3I effort; Common Operating Environment Development	

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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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
PSS P3I effort; Common Operating Environment Development	2	2012	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
L75: <i>Profiler</i>	-	2.512	0.000	2.759	-	2.759	3.605	0.936	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Profiler provides meteorological(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. The Block I, 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. Block III CMD-P, AN/GMK-2 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.The Profiler Virtual Module (PVM) using the IT Box Construct concept will address emerging requirements and system long-term sustainment challenges. The PVM concept includes the following updates to the Profiler; the software architecture will be redone to create a modular framework, the weather model will be updated from Mesoscale Model version5(MM5) to Weather Research Forecast model(WRF), the weather data format for initiation data and data exchange will be updated to Gridded Binary version2 (GRIB 2), and the Graphical User Interface(GUI) made into a Common Operating Environment(COE)compliant thin client. Along with these changes, a primary goal is to recode the multiple language reuse code pieces into a common development environment. This will also be developed in conjunction with the AFATDS program. This concept is a flexible approach that will be able to support both stand alone application (on a PC), or integrated into the COE (i.e. a Slice in the TOC server).

FY2014 Base funds in the amount of \$2.759M are provided for the Profiler Virtual Module to develop the new MET process and the replacement of the weather model from MM5 to WRF.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Title: Profiler Virtual Module (PVM) development Description: VM provides software architecture to create a modular framework. FY 2014 Plans: Profiler Virtual Module (PVM) development	0.000	0.000	2.759
Title: Block III Limited User Testing and Austere Testing. Description: Conduct Block III Limited User Testing and Austere Testing. FY 2012 Accomplishments: Conduct Block III Limited User Testing and Austere Testing.	2.512 0	0.000	0.000
Articles:			
Accomplishments/Planned Programs Subtotals			
	2.512	0.000	2.759

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Profiler OPA SSN K27900: <i>Profiler</i>	3.312	12.482	3.027		3.027	4.684	5.359			0.000	28.864
Remarks											

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 the Block III software to support eight (8) Profiler Block III Production Representative Prototype Systems (PRPS). The Block III program is on schedule and entered production and fielding in the first quarter of FY13. The revised Profiler Acquisition Strategy was approved by the MDA on 28 March 2012 for a product improvement to the Profiler Block III for a Virtual Module supporting the Command Post Computing Environment of the Common Operating Environment (COE).

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 2014 Army												DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT								
2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)				PE 0604710A: Night Vision Systems - Eng Dev				L75: Profiler								
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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:Various	2.150	0.473		-		0.270		-		0.270	Continuing	Continuing	Continuing	
Subtotal			2.150	0.473		0.000		0.270		0.000		0.270				
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	
Profiler VM SW development and data gathering	MIPR	SEC, FSED:Ft. Sill, Oklahoma	0.000	-		-		1.999		-		1.999	0.000	1.999	0.000	
Subtotal			6.686	0.000		0.000		1.999		0.000		1.999				
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	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	0.671		-		-		-		-	Continuing	Continuing	Continuing	
Conversion from MM5 to WRF for PVM	MIPR	ARL, Various:WSMR, NM	1.089	0.178		-		0.490		-		0.490	Continuing	Continuing	Continuing	
Subtotal			4.851	1.348		0.000		0.490		0.000		0.490				

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604710A: <i>Night Vision Systems - Eng Dev</i>	PROJECT L75: <i>Profiler</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
Austere Testing				■																								
PVM SW development and data gathering																												
Profiler Virtual Module Development Testing/ Formal Qual Test																												
Profiler Virtual Module Limited User Testing																												
Profiler Virtual Module FQT Delta Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
Austere Testing	4	2012	4	2012
PVM SW development and data gathering	1	2014	4	2014
Profiler Virtual Module Development Testing/Formal Qual Test	1	2015	3	2015
Profiler Virtual Module Limited User Testing	4	2015	4	2015
Profiler Virtual Module FQT Delta Testing	1	2016	2	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
L76: <i>Dismounted Fire Support Laser Targeting Systems</i>	-	0.000	0.000	1.100	-	1.100	1.119	1.138	1.157	1.177	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project matures technologies and capabilities which benefit, and may be inserted into, the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1) and other precision targeting systems. These precision targeting systems are 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)

	FY 2012	FY 2013	FY 2014
Title: Azimuth and Vertical Angle Measurement (AVAM) devices	0.000	0.000	0.900
Description: AVAM is a non-magnetic based inertial navigation materiel solution for targeting devices. This AVAM effort improves azimuth accuracy leading to reduced collateral damage and improved engagement efficiency.			
FY 2014 Plans: Will fund the integration and testing of emerging smaller, lightweight, low cost AVAMs that can be inserted into the legacy Lightweight Laser Designator Rangefinder.			
Title: Laser development	0.000	0.000	0.200
Description: Development of lightweight, low cost, multi-spectral, and more efficient lasers.			
FY 2014 Plans: Will investigate the integration of emerging high accuracy capabilities into the current portfolio of laser targeting systems.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.100

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• LLDR (SSN K31100): <i>Lightweight Laser Designator Rangefinder (LLDR) (SSN K31100)</i>	67.929									0.000	67.929
• LLDR Mod-of-In-Service (SSN KA3100): <i>Lightweight Laser Designator Rangefinder (LLDR) MOD-of-In-Service (SSN KA3100)</i>		22.403	26.037		26.037	48.163	49.000	54.600		0.000	200.203
• JETS (SSN K32101): <i>Joint Effects Targeting System (JETS) (SSN K32101)</i>						95.894	91.695	77.443	79.452	905.332	1,249.816
• PE 654710/DL79: <i>Joint Effects Targeting System (JETS) (PE 654710 Project DL79)</i>	20.367	21.505	21.606		21.606	10.051	7.318	1.651	1.679	0.000	84.177

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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

Laser Development	
Azimuth and Vertical Angle Measurement (AVAM) Development and Integration	

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Laser Development	2	2014	4	2018
Azimuth and Vertical Angle Measurement (AVAM) Development and Integration	3	2014	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
L79: <i>Joint Effects Targeting Systems (JETS)</i>	-	19.732	21.505	21.606	-	21.606	10.051	7.318	1.651	1.679	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 individual 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 JETS 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.

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

	FY 2012	FY 2013	FY 2014
Title: Joint Effects Targeting System (JETS)	19.732	21.505	21.606
Articles:	0	0	
Description: JETS 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 Accomplishments: Tested Prototype Systems and Azimuth and Vertical Angle Measurement (AVAM) devices, conducted developmental and early user testing, initiated source selection preparation / process for the Engineering and Manufacturing Development (EMD) phase.			
FY 2013 Plans: Complete Full and Open EMD source selection, award two prime contracts, and begin EMD development of JETS prototype systems from the vendors. The prototypes will include integration with precision AVAM solutions.			
FY 2014 Plans: Will continue EMD phase development. Will complete initial build of up to 30 prototypes and begin early user assessment (EUA) and development testing (DT) of prototypes at White Sands Missile Range (WSMR) and Aberdeen Proving Ground (APG). Will develop supportability products and initiate production planning.			
Accomplishments/Planned Programs Subtotals	19.732	21.505	21.606

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>			<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• Fire Support Laser Targeting Sys: <i>Dismounted Fire Support Laser Targeting Systems (PE 654710 / DL76)</i>			1.100		1.100	1.119	1.138	1.157	1.177	Continuing	Continuing
• Joint Effects Targeting System: <i>Joint Effects Targeting System (SSN K32101)</i>						95.894	91.695	77.443	79.452	905.332	1,249.816

Remarks

DL76 supports technology development and integration efforts applicable to multiple programs (e.g. JETS, Lightweight Laser Designator Rangefinder (LLDR)).

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Completed JETS TLDS Tech Development (TD) prototype development, integration, and test	C/T&M	Various:Various	0.000	3.844	Dec 2011	-		-		-		-	0.000	3.844	0.000
AVAM Development	C/T&M	Various:Various	0.000	7.810	Dec 2011	-		2.600	Mar 2014	-		2.600	0.000	10.410	0.000
JETS TLDS EMD prototype development, integration, and test - Contractor 1 year 2	C/TBD	TBD:TBD	0.000	-		8.122		6.734	Mar 2014	-		6.734	0.000	14.856	0.000
JETS TLDS EMD prototype development, integration, and test - Contractor 2 year 2	C/TBD	TBD:TBD	0.000	-		8.122		6.734	Apr 2014	-		6.734	0.000	14.856	0.000
Subtotal			0.000	11.654		16.244		16.068		0.000		16.068	0.000	43.966	0.000

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JETS TLDS prototype technical maturation	SS/CPFF	Night Vision Electronics Sensors Directorate:Ft Belvoir, VA	0.000	0.500	Jan 2012	-		-		-		-	0.000	0.500	0.000
Functional Support Cost	MIPR	Night Vision Electronics Sensors Directorate:Ft. Belvoir	0.000	1.206	Apr 2012	1.837		1.819	Mar 2014	-		1.819	Continuing	Continuing	0.000
Science and Engineering Support	MIPR	Various:Various	0.000	3.829	May 2012	0.652		0.675	May 2014	-		0.675	Continuing	Continuing	0.000
Program Management Support	TBD	Various:Various	0.000	1.925		1.985		2.044	Apr 2014	-		2.044	Continuing	Continuing	0.000
Subtotal			0.000	7.460		4.474		4.538		0.000		4.538			0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
JETS TLDS prototype development	████████																											
Engineering Characterization	████████																											
Early user assessments			████████																									
Technology Readiness Assessments	████████																											
JETS TLDS MS B					████																							
Engineering & Manufacturing Development					██																							
JETS TLDS MS C													████															
LRIP													██															
FMR																	████											
IOC																					████							

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
JETS TLDS prototype development	2	2012	4	2012
Engineering Characterization	2	2012	4	2012
Early user assessments	3	2012	4	2012
Technology Readiness Assessments	3	2012	4	2012
JETS TLDS MS B	2	2013	2	2013
Engineering & Manufacturing Development	2	2013	3	2015
JETS TLDS MS C	3	2015	3	2015
LRIP	3	2015	1	2017
FMR	1	2017	1	2017
IOC	2	2017	2	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	2.008	2.132	1.939	-	1.939	2.234	2.273	2.239	2.475	Continuing	Continuing
548: <i>Mil Subsistence Sys</i>	-	2.008	2.132	1.939	-	1.939	2.234	2.273	2.239	2.475	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY14: 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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	2.073	2.132	2.117	-	2.117
Current President's Budget	2.008	2.132	1.939	-	1.939
Total Adjustments	-0.065	0.000	-0.178	-	-0.178
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	-0.178	-	-0.178

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
548: <i>Mil Subsistence Sys</i>	-	2.008	2.132	1.939	-	1.939	2.234	2.273	2.239	2.475	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 2012	FY 2013	FY 2014
Title: Containerized Kitchen Modernization (CK)	0.335	0.300	0.000
Articles:	0	0	
Description: New Containerized Kitchen layout with modular, closed combustion, thermostatically controlled appliances that reduce heat stress inside the kitchen			
FY 2012 Accomplishments: Test and evaluate in accordance to Test and Evaluation Master Plan (TEMP). Prepare and approve Engineering Change Proposal (ECP) and transition to RESET program			
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.			
Title: Containerized Ice Making System (CIMS)	0.200	0.100	0.310
Articles:	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012
<p>Description: Develop a containerized ice making system to support a 600 person base camp for cooling drinking water in extreme arid conditions and support other ice requirements for those on the base camp and for soldiers going out on missions/patrols.</p> <p>FY 2012 Accomplishments: 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>FY 2014 Plans: Prepare and approve final performance specification and initiate production contract</p>				FY 2013
<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 2012 Accomplishments: Based on field test results, present recommendations to JSORF (2Q10/2Q11) for continued product improvement of ration components/packaging/ technologies for MRE (2013/2014 DOP). Finalize MRE procurement documents and initiate transition to DSCP. Obtain OTSG approval. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/ field evaluation of new ration components for MRE (2013/2014 DOP) to improve quality, acceptability, nutrition, and expand variety.</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>FY 2014 Plans:</p>				FY 2014
				0.160
				0.143
				0.141
				0
				0

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Based on field test results, present recommendations to Joint Services (2Q14) for continued product improvement of ration components/packaging/technologies for MRE (2017 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 (2017 DOP) to improve quality, acceptability, nutrition and expand variety.				
Title: Assault/Special Purpose Ration Improvement Project (ASPIP)		0.150	0.138	0.140
		Articles: 0	0	
Description: Continuous product improvement of special purpose rations by the insertion of new technologies in nutrition, processing and packaging.				
FY 2012 Accomplishments: Post field test results, present recommendations to JSORF (2Q12) for continued product improvement of ration components/packaging/ technologies for MCW/LRP and, Survival Rations and FSR (3/4). Finalize procurement documents and initiate transition to DSCP. Obtain OTSG approval for menus. Perform cuttings for industry/OGA to ensure consistent ration quality, understand PCR requirements, and resolve vendor/supplier issues. Identify new components based on user feedback, focus groups, emerging products and technologies, and known user requirements. Obtain and assemble selected new items for test. Conduct field testing/field evaluation of new ration components for MCW/LRP, Survival Rations, and FSR (4/5).				
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.				
FY 2014 Plans: Plan and execute field evaluation of new ration components for FSR. Present field test results and recommendations to Joint Services (2Q14) 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)		0.163	0.148	0.150
		Articles: 0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)				
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 2012 Accomplishments: 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.				
FY 2014 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.				
Title: Navy Shipboard Galleys		Articles:	0.130	0.141
			0	0
Description: Provide continuous Research 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				
FY 2012 Accomplishments: Conduct continuous market investigations of Commercial Off The Shelf (COTS) equipment to support Galley operations.				
FY 2013 Plans:				
			0.153	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
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. Integrate products of Navy developmental efforts. FY 2014 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.				
Title: Integrated Thermal Control into Modern Burner Unit (MBU) Articles:		0.175 0	0.139 0	0.000
Description: Imbed a thermostatic control within the MBU to allow the kitchen appliance temperature to be regulated at a set temperature by cycling the MBU on and off automatically FY 2012 Accomplishments: Complete testing and evaluation of integrated thermal control and transition to procurement. 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				
Title: Automated Shipboard Dishwashing System Articles:		0.286 0	0.000	0.000
Description: Provides an automated dishwashing system that alleviates the manual labor involved in dishwashing and reduces manning requirements for future Navy platforms. FY 2012 Accomplishments: Integrate & evaluate Phase III Small Business Innovation Research (SBIR) production model onboard an Aircraft Carrier and transition final system to PEO Carriers for procurement.				
Title: Ration Airdrop Survivability Articles:		0.170 0	0.140 0	0.000
Description: Provides updated high velocity airdrop performance characteristics for current ration configurations/designs, identifies ration survival rates for defined operational conditions critical to mission planning and effectiveness, and offers insight into capability gaps that might warrant revision to use protocol or appropriate product redesign and reengineering. FY 2012 Accomplishments:				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Redesign components/ menus for retest, reassessment and recommendations for transition of improved, more survivable (via airdrop) rations. 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)				
Title: Joint Services Refrigerated Container System 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. FY 2013 Plans: Conduct Developmental Testing at Aberdeen Proving Grounds (APG). Conduct User Evaluations with all Services. FY 2014 Plans: Conduct Developmental Testing at Aberdeen Proving Grounds (APG). Conduct User Evaluations with all Services.		0.000	0.339 0	0.126
Articles:				
Title: Basic Expeditionary Airfield Resources (BEAR) Kitchen System Enhancements (BEAR-KSE) 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. 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. FY 2014 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. Transition data to PM-BEAR		0.000	0.230 0	0.302
Articles:				
Title: Assault Kitchen-Enhancement to Include UGR-A Capability		0.175 0	0.220 0	0.000
Articles:				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<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> <p>FY 2012 Accomplishments: 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 align="right">Articles:</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>		0.000	0.094 0	0.000
<p>Title: Transition of Advanced Appliances for Field Kitchens</p> <p>Description: Perform Engineering and Manufacturing Development (EMD) on appliance and burner technologies transitioned from technology efforts to develop advanced appliances based on JP-8 combustion. The outcome from the EMD effort will be introduced into production and or RESET to the Containerized Kitchen (CK) and/or MKT replacement platform as appropriate.</p> <p>FY 2014 Plans:</p>		0.000	0.000	0.415

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Finalize integration of modular appliances into platforms. Initial units will undergo customer testing with a test/fix cycle. This process will uncover weaknesses prior to the Production Qualification Test (PQT). When prototypes have reached acceptable level of maturity, PQT Prototypes will be designed and fabricated and the PQT will be performed.			
Title: Autonomous Shipboard Cleaning System Description: Provides an automated dishwashing system that alleviates the manual labor involved in dishwashing and reduces manning requirements for future Navy platforms. FY 2014 Plans: Finalize development of prototype developed under Phase II under the Phase III development effort. Document results of FY14 land-based testing at Natick Soldier Research Development and Engineering Center (NSRDEC). Identify if need for additional testing exists. Perform enhanced simulation testing and demonstrations of the upgraded prototypes at Naval Surface Warfare Center's test facilities	0.000	0.000	0.202
Title: SBIR+STTR Description: SBIR+STTR FY 2012 Accomplishments: SBIR+STTR	0.064 0	0.000	0.000
Articles:			
Accomplishments/Planned Programs Subtotals	2.008	2.132	1.939

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• RDT&E 643747.610: <i>Food Adv Dev</i>	3.720	4.014	5.188		5.188	5.213	4.892	4.974	5.574	Continuing	Continuing
• OPA M65803: <i>Kitchen, Containerized, Field</i>			0.200		0.200					0.000	0.200
• OPA M65802: <i>Sanitation Center, Field Feeding</i>			0.100		0.100					0.000	0.100
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>Mil Subsistence Sys</i>

D. Acquisition Strategy

Complete System Development and Demonstration of food items and equipment for transition into competitive procurement contract. Complete advanced research efforts to support Engineer Change Proposals for previously developed equipment.

E. Performance Metrics

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT								
2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)				PE 0604713A: Combat Feeding, Clothing, and Equipment				548: Mil Subsistence Sys								
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
CFP Management	C/FP	RDECOM:Natick, MA	1.795	0.219		0.236		0.234		-		0.234	0.000	2.484	Continuing	
SBIR+STTR	TBD	Various:Various	0.000	0.064		-		-		-		-	0.000	0.064	0.000	
Subtotal			1.795	0.283		0.236		0.234		0.000		0.234	0.000	2.548		
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
Various combat feeding equipment, multi fuel and water equipment	C/FP	RDECOM:Natick, MA	3.369	0.900		1.057		0.872		-		0.872	0.000	6.198	Continuing	
DOD Field Feeding Equipment	C/FP	Various:Various	2.862	0.275		0.280		0.278		-		0.278	0.000	3.695	Continuing	
Army Field Feeding Equipment Development	C/FP	PM Force Sustainment Systems (FSS):Natick, MA	1.914	0.211		0.214		0.212		-		0.212	0.000	2.551	Continuing	
Subtotal			8.145	1.386		1.551		1.362		0.000		1.362	0.000	12.444		
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
Various	Various	TECOM/OEC/ATC:Warren, MI	3.036	0.339		0.345		0.343		-		0.343	0.000	4.063	Continuing	
Subtotal			3.036	0.339		0.345		0.343		0.000		0.343	0.000	4.063		
Project Cost Totals			12.976	2.008		2.132		1.939		0.000		1.939	0.000	19.055		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>			R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>			PROJECT 548: <i>Mil Subsistence Sys</i>				
	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604713A: <i>Combat Feeding, Clothing, and Equipment</i>	PROJECT 548: <i>Mil Subsistence Sys</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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												■				■												
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								■																				
Transition Multi-Functional Secondary Packing to DLA-TS												■																
Conduct DT/OT on Ice Maker Prototype			■	■																								
Transition Ice Maker to Procurement								■																				
Perform shelf life studies utilizing improved modeling algorithms												■				■												
Perform field tests for user evaluation of novel processing technologies																■												
Complete all TDP Changes for BEAR Kitchen Enhancements												■																

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018							
	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				
Initiate modular appliance design upgrades based on customer test																																
Initiate PQT Prototypes for advanced modular appliances																																
Transition Autonomous Shipboard Cleaning System to Navy																																
Perform Critical component testing for diesel electric TCRCS																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
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
Transition Multi-Functional Secondary Packing to DLA-TS	1	2014	1	2014
Conduct DT/OT on Ice Maker Prototype	4	2012	3	2013
Transition Ice Maker to Procurement	4	2013	4	2013
Perform shelf life studies utilizing improved modeling algorithms	1	2014	4	2015
Perform field tests for user evaluation of novel processing technologies	1	2015	3	2015
Complete all TDP Changes for BEAR Kitchen Enhancements	4	2014	4	2014
Initiate modular appliance design upgrades based on customer test	2	2014	3	2014
Initiate PQT Prototypes for advanced modular appliances	4	2014	4	2014
Transition Autonomous Shipboard Cleaning System to Navy	4	2015	4	2015
Perform Critical component testing for diesel electric TCRCS	3	2015	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	29.206	44.787	18.980	-	18.980	32.481	28.392	23.631	21.898	Continuing	Continuing
241: <i>Nstd Combined Arms</i>	-	24.144	39.614	15.940	-	15.940	29.422	25.492	19.729	18.688	Continuing	Continuing
573: <i>Program Executive Office Simulation, Training Spt</i>	-	5.062	5.173	3.040	-	3.040	3.059	2.900	3.902	3.210	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Funds were realigned to higher priority requirements.

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 2014 Project 241 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), Live, Virtual, Constructive Integrating Architecture (LVC-IA), Engagement Skills Trainer 2000 (EST 2000), Medical Simulation Training Center (MSTC), One Tactical Engagement Simulation System (OneTESS), and further implementation of Live Training Transformation (LT2) through development of the Common Training Instrumentation Architecture (CTIA).

FY 2014 Project 573 will provide for minimum PEO STRI core operations supporting development of training devices and simulations by PEO STRI's four Project Management Offices.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	29.981	44.787	33.504	-	33.504
Current President's Budget	29.206	44.787	18.980	-	18.980
Total Adjustments	-0.775	0.000	-14.524	-	-14.524
• Congressional General Reductions	-0.007	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.768	-			
• Adjustments to Budget Years	-	-	-14.524	-	-14.524

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
241: <i>Nstd Combined Arms</i>	-	24.144	39.614	15.940	-	15.940	29.422	25.492	19.729	18.688	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). Also, CTC-IS funds the continued development of the Range Communication System at the NTC and JRTC, 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 Medical Simulation Training Center (MSTC) program provides a standardized, combat medical training capability to sustain and validate Combat Medic skills and to support Combat Lifesaver training for Active, Reserve and the Army National Guard components, using both classroom and simulated battlefield conditions to better prepare Soldiers for the application of medical interventions under combat conditions. Each MSTC system is made up of sub-systems that include the Virtual Patient System (VPS), Instruction Support System (ISS) and facility, Medical Training-Command and Control (MT-C2), and the Medical Training Evaluation System (MTES).

The Engagement Skills Trainer (EST) is a virtual, small arms, marksmanship training simulator for teams and squads with a standard mix of light, heavy and crew-served weapons used in Overseas Contingency Operations (OCO) and support of Unified Land Operations (ULO). The EST provides training for individual marksmanship, small unit collective gunnery skills and tactical training. It incorporates judgmental use of force, including escalation of force and graduated response scenarios. As the only validated and accredited virtual small arms training system, the EST 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 Mission Command Systems (Joint and Army). The LVC-IA defines the "how" information is exchanged among the

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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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.

One Tactical Engagement Simulation System (OneTESS) develops 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. 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. It is interoperable with current and future Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) Line of Sight (LOS) laser based systems.

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 2014 Project 241 funds significant development efforts on the Combat Training Center Instrumentation Systems (CTC-IS), Live, Virtual, Constructive Integrating Architecture (LVC-IA), Engagement Skills Trainer (EST), Medical Simulation Training Center (MSTC), 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 2012	FY 2013	FY 2014
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Training Instrumentation Architecture (CTIA) program.</p> <p align="right">Articles:</p> <p>Description: Continue EMD phase contract activities for the CTIA program to provide the common architecture capabilities.</p> <p>FY 2012 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 2013 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</p>	<p>1.882</p> <p>0</p>	<p>1.681</p> <p>0</p>	<p>0.873</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
Systems (CTC-IS), Integrated Military Operations in Urbanized Terrain Training System (IMTS), Home Station Instrumentation Systems (HITS), Digital Ranges Training System (DRTS) training instrumentation programs and the Live, Virtual, Constructive-Integrated Training Environment (LVC-ITE) interoperability initiatives.				
FY 2014 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.				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Combat Training Center Instrumentation System (CTC-IS).				
Description: Continue EMD phase contract activities for the CTC-IS.				
FY 2012 Accomplishments: 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 used to begin 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.				
FY 2013 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.				
FY 2014 Plans: Combat Training Center Instrumentation System (CTC-IS) will fund 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 will be used to develop a common Range Communications System (RCS) that can be implemented at				
		4.660 0	14.023 0	2.547
Articles:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
all both NTC and JRTC 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>Title: Government Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.</p> <p>Articles:</p> <p>Description: Government Program Management for the CTC IS program.</p> <p>FY 2012 Accomplishments: Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.</p> <p>FY 2013 Plans: Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.</p> <p>FY 2014 Plans: Program Management for the Combat Training Center Instrumentation System (CTC-IS) program.</p>		0.542 0	1.230 0	1.358
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Homestation Instrumentation Training System (HITS) program.</p> <p>Articles:</p> <p>Description: EMD phase contract activities for the HITS program.</p> <p>FY 2012 Accomplishments: Developed, integrated, and tested new and upgraded software capabilities for the Home Station Instrumentation Training System (HITS). These capabilities upgraded 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 was critical to sustaining a training system based on COTS software, and for maintaining Information Assurance accreditation.</p> <p>FY 2013 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>		0.688 0	0.963 0	0.000
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Medical Simulation Training Center (MSTC).</p> <p>Articles:</p>		1.295 0	0.815 0	0.000

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
Description: EMD phase contract activities for the MSTC program.				
FY 2012 Accomplishments: Development within the Virtual Patient System (VPS) of an effective Tetherless Mannequin (TLM). Developed 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. Developed mobile training capability to support remote site training.				
FY 2013 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 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.				
Title: Government Program Management for the Medical Simulation Training Center (MSTC) program.				
Articles:				0.191 0
Description: Government Program Management for the MSTC program.				0.220 0
FY 2012 Accomplishments: Program management costs associated with the FY12 Medical Training Evaluation System (MTES) system.				
FY 2013 Plans: Program management costs associated with the FY13 Medical Simulation Training Center (MSTC) development efforts.				
FY 2014 Plans: Research management costs associated with Instructor Support System (ISS) development efforts for the FY14 Medical Simulation Training Center (MSTC) program.				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Engagement Skills Trainer (EST) program.				0.000
Articles:				0.993 0
Description: EMD phase contract activities for the Engagement Skills Trainer (EST) program.				0.800
FY 2013 Plans:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
Integrate an EST prototype 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 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.				
FY 2014 Plans: Develop EST Dynamic Terrain 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, structures; and develop prior years efforts (weapons, optics, etc). Develop enhanced capabilities in accordance with the capability manager's priorities.				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program.				
Description: Continue EMD phase contract activities for the LVC-IA program.				
FY 2012 Accomplishments: Completed system development, integration and demonstration of Live, Virtual, Constructive Integrated Architecture (LVC-IA) Version 1 capability.				
FY 2013 Plans: Begin system development and perform design, development, integration and demonstration of the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Version 2 capability.				
FY 2014 Plans: Complete system development, integration and demonstration of Live, Virtual, Constructive Integrating Architecture (LVC-IA) Version 2 capability.				
Title: Government Program Management for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program.				
Description: Government Program Management for the LVC-IA program.				
		5.897 0	6.264 0	6.211
		1.068 0	1.127 0	1.240

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2012
				FY 2013
				FY 2014
<i>FY 2012 Accomplishments:</i> The Government Program Management Office for LVC-IA supported the engineering and manufacturing development phase. Funding supported manpower, facilities, training, operations and maintenance and other infrastructure.				
<i>FY 2013 Plans:</i> 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.				
<i>FY 2014 Plans:</i> The Government Program Management Office for LVC-IA will support the engineering and manufacturing development phase of LVC-IA Version 2. Funding supports manpower, facilities, training, operations and maintenance and other infrastructure.				
<i>Title:</i> Government System Test and Evaluation for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program. <i>Articles:</i>				0.923 0
<i>Description:</i> Government System Test and Evaluation for the LVC-IA program.				0.961 0
				1.000
<i>FY 2012 Accomplishments:</i> LVC-IA continued integration testing support on developed components for LVC-IA for inter-operability with TADSS and other Mission Command Systems. Conducted FIE, FV & system measurement of performance (SMP) events for LVC-IA Build 2. Completed Test Readiness Review (TRR) as well as Government Acceptance Testing (GAT).				
<i>FY 2013 Plans:</i> 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.				
<i>FY 2014 Plans:</i> LVC-IA continues integration testing support on developed components for LVC-IA for interoperability with TADSS and other Mission Command Systems. LVC-IA will conduct Federation Integration, Functional Verification and system measurement of performance (SMP) events, complete Test Readiness Review (TRR) and Government Acceptance Testing for Version 2.				
<i>Title:</i> Engineering and Manufacturing Development (EMD) phase contract activity for the Target Modernization program. <i>Articles:</i>				1.586 0
<i>Description:</i> EMD phase contract activities for the Target Modernization program.				1.466 0
<i>FY 2012 Accomplishments:</i>				0.000

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Target Modernization continued development of target system technologies which provided enhanced realism (look and behavior), threat/friend identification, and training performance feedback mechanisms. FY 2013 Plans: Target Modernization continues development of target system technologies which provide enhanced realism (look and behavior), threat/friend identification, and training performance feedback mechanisms.				
Title: Government Program Management for the Target Modernization program. Description: Government Program Management for Target Modernization. FY 2012 Accomplishments: Program Management for the Target Modernization program. FY 2013 Plans: Program Management for the Target Modernization program.		0.178 0	0.262 0	0.000
Articles:				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the One Tactical Engagement Simulation System (OneTESS) program. Description: Continue EMD phase contract activities for the OneTESS program FY 2012 Accomplishments: Continued development of OneTESS capability for Real Time Casualty Assessment (RTCA). Performed Developmental Test (DT) efforts that supported the training and testing communities into systems under development. FY 2013 Plans: Begin development of the Increment 2 effort (Fire Control Platforms for Stryker Brigade Combat Teams (SBCT) and/or Heavy Brigade Combat Teams (HBCT)). FY 2014 Plans: Perfrom Operational Test, complete procurement of Technical Data Package (TDP) in support of a Milestone C Decision.		3.820 0	8.158 0	1.494
Articles:				
Title: Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program. Description: Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program.		1.414 0	0.339 0	0.342
Articles:				

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program.</p> <p><i>FY 2013 Plans:</i> Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program.</p> <p><i>FY 2014 Plans:</i> Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program.</p>			
<p><i>Title:</i> Development Activity for the Integration and Interoperability (I2) Program.</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Development of the I2 Program.</p> <p><i>FY 2013 Plans:</i> 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) that can benefit from and share the cost of systematic re-use of common components.</p>	0.000	0.978 0	0.000
<p><i>Title:</i> Government Program Management for the Integration and Interoperability (I2) Program.</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Government Program Management for the I2 Program.</p> <p><i>FY 2013 Plans:</i> Program management costs associated with the FY13 I2 efforts.</p>	0.000	0.134 0	0.000
Accomplishments/Planned Programs Subtotals	24.144	39.614	15.940

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Training Devices, Non-System: <i>Training Devices, Non-System</i>	180.892	152.501	225.200		225.200	186.955	197.014	164.867	121.829	Continuing	Continuing
• CTC Support: <i>CTC Support</i>	46.117	111.649	121.710		121.710	124.480	82.690	84.523	133.368	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OneTESS Program Management	Various	PEO STRI:Orlando, FL	8.046	-		-		-		-		-	0.000	8.046	8.046
OneTESS Program Management	Various	PEO STRI, :Orlando, FL	0.000	1.414	Dec 2011	0.339	Dec 2012	0.342	Dec 2013	-		0.342	Continuing	Continuing	Continuing
CTC-IS Program Management	Various	PEO STRI:Orlando, FL	0.879	0.542	Dec 2011	1.230	Dec 2012	1.358	Dec 2013	-		1.358	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	Dec 2011	0.220	Dec 2012	0.075	Dec 2013	-		0.075	Continuing	Continuing	Continuing
EST 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	Dec 2011	1.127	Dec 2012	1.240	Dec 2013	-		1.240	Continuing	Continuing	Continuing
Integration and Interoperability	Various	PEO STRI:Orlando, FL	0.000	-		0.134	Oct 2012	-		-		-	Continuing	Continuing	Continuing
Target Modernization	Various	PEO STRI:Orlando, FL	0.273	0.178	Dec 2011	0.262	Dec 2012	-		-		-	0.000	0.713	0.714
ETC-IS Program Management	Various	PEO STRI:Orlando, FL	0.164	-		-		-		-		-	0.000	0.164	0.164
Subtotal			12.265	3.393		3.312		3.015		0.000		3.015			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OneTESS	SS/CPFF	General Dynamics:Fairfax, VA	124.769	-		-		-		-		-	0.000	124.769	124.769
OneTESS	SS/CPFF	General Dynamics C4 Systems:Orlando, FL 32826	0.000	3.278	Dec 2011	8.158	Dec 2012	0.494	Dec 2013	-		0.494	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT							
2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)				PE 0604715A: Non-System Training Devices - Eng Dev				241: Nstd Combined Arms							
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
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 C4 Systems:Orlando, FL	1.661	1.516	Dec 2011	1.288	Dec 2012	0.455	Dec 2013	-		0.455	Continuing	Continuing	Continuing
CTC-IS	C/FFP	Northrop Grumman Technical Services:Herndon, VA	8.806	4.660	May 2012	14.023	May 2013	2.547	May 2014	-		2.547	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	0.000	0.688	May 2012	0.963	May 2013	-		-		-	0.000	1.651	1.651
MSTC Development	C/FP	Multiple:Various	0.732	1.295	May 2012	0.815	Jan 2013	-		-		-	Continuing	Continuing	Continuing
EST Development	SS/FP	TBD:Various	1.528	-		-		-		-		-	Continuing	Continuing	Continuing
EST PEQ-15A	C/FP	TBS:TBD	0.000	-		0.993	Jan 2013	-		-		-	0.000	0.993	0.000
EST Enhanced Capabilities	C/FFP	TBS:TBD	0.000	-		-		0.800	Jan 2014	-		0.800	0.000	0.800	0.000
LVC-IA Development	C/CPAF	Cole Engineering Services, Inc:Various	11.309	5.897	Dec 2011	6.264	Jun 2013	6.211	Jun 2014	-		6.211	Continuing	Continuing	Continuing
Integration and Interoperability	TBD	PEO STRI:Orlando, FL	0.000	-		0.978	Jun 2013	-		-		-	0.000	0.978	0.978
Target Modernization	C/CPFF	General Dynamics C4 Systems:Orlando, FL	2.136	1.532	Dec 2011	1.410	Dec 2012	-		-		-	0.000	5.078	5.078
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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)						PE 0604715A: Non-System Training Devices - Eng Dev				241: Nstd Combined Arms					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			218.828	18.866		34.892		10.507		0.000		10.507			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS	Various	Various:Orlando, FL	6.596	-		-		-		-		-	0.000	6.596	6.596
OneTESS	Various	Various:Various	0.000	0.262	Dec 2011	-		-		-		-	0.000	0.262	0.262
CTIA	Various	Various:Various	11.392	0.366	Dec 2011	0.393	Dec 2012	0.418	Dec 2013	-		0.418	Continuing	Continuing	Continuing
Target Modernization	Various	Various:Various	0.082	0.054	Dec 2011	0.056	Dec 2012	-		-		-	0.000	0.192	0.192
Subtotal			18.070	0.682		0.449		0.418		0.000		0.418			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Development & Test	Various	Multiple:Orlando, FL	4.162	-		-		-		-		-	0.000	4.162	4.162
OneTESS Test Support	Various	Multiple:Orlando, FL	0.000	0.280	Dec 2011	-		1.000	Dec 2013	-		1.000	Continuing	Continuing	Continuing
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	Dec 2011	0.961	Dec 2012	1.000	Dec 2013	-		1.000	Continuing	Continuing	Continuing
IEDES	Various	Multiple:Orlando, FL	0.519	-		-		-		-		-	0.000	0.519	0.519
Subtotal			6.706	1.203		0.961		2.000		0.000		2.000			
Project Cost Totals			255.869	24.144		39.614		15.940		0.000		15.940			
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 MS C																												
HITS Development																												
MSTC MTES Development																												
MSTC System Developments																												
EST PEQ-15A																												
EST Enhanced Capabilities																												
LVC-IA - Version 2																												
LVC-IA - Version 3																												
LVC-1A - Version 4																												
I2 Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 MS C	3	2014	3	2014
HITS Development	3	2012	4	2018
MSTC MTES Development	3	2012	1	2014
MSTC System Developments	2	2013	4	2015
EST PEQ-15A	2	2013	1	2015
EST Enhanced Capabilities	2	2014	4	2018
LVC-IA - Version 2	1	2013	4	2014
LVC-IA - Version 3	1	2015	4	2016
LVC-1A - Version 4	1	2017	4	2018
I2 Development	1	2013	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
573: <i>Program Executive Office Simulation, Training Spt</i>	-	5.062	5.173	3.040	-	3.040	3.059	2.900	3.902	3.210	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 OCO Request will be submitted at a later date

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 2014 funds labor in support of PEO operations.

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

	FY 2012	FY 2013	FY 2014
Title: Government Program Management to support PEO STRI.	5.062	5.173	3.040
Articles:	0	0	
Description: Government Program Management to support PEO STRI.			
FY 2012 Accomplishments: Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation.			
FY 2013 Plans: Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation.			
FY 2014 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	5.062	5.173	3.040

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	PE 0604715A: <i>Non-System Training Devices - Eng Dev</i>	573: <i>Program Executive Office Simulation, Training Spt</i>

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

N/A

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604716A: <i>TERRAIN INFORMATION - ENG DEV</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	1.593	1.008	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
579: <i>FIELD ARMY MAP SYS ED</i>	-	1.593	1.008	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 Force Generation (ARFORGEN) cycle.

The Project Manager Distributed Common Ground System - Army is responsible for developing topographic support systems for the Army. PM DCGS-A 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.

Program has no FY14 Base or OCO requirement.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604716A: <i>TERRAIN INFORMATION - ENG DEV</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	1.594	1.008	0.000	-	0.000
Current President's Budget	1.593	1.008	0.000	-	0.000
Total Adjustments	-0.001	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.001	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
579: <i>FIELD ARMY MAP SYS ED</i>	-	1.593	1.008	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 did 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 Intelligence, Sureveillance, and Reconnaissance (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 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 Conbat Terrain Information Systems (CTIS. 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.

Program has no FY14 Base or OCO requirement.

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

	FY 2012	FY 2013	FY 2014
Title: Continue P3I development for DTSS.	1.593	1.008	0.000
Articles:	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p>Description: Continue P3I development for DTSS - Initiate transition of functionality to DCGS-A, continue investigation of COTS upgrades, continue improvement of coalition/joint interoperability.</p> <p>FY 2012 Accomplishments: Continue P3I development for DTSS - Initiate transition of functionality to DCGS-A, continue investigation of COTS upgrades, continue improvement of coalition/joint interoperability.</p> <p>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.</p>			
Accomplishments/Planned Programs Subtotals	1.593	1.008	0.000

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• DCGS-A MIP RDTE: <i>0305208A</i>	31.401		40.876		40.876	29.924	26.096	26.332	26.765	Continuing	Continuing
• DCGS-A MIP OPA: <i>BZ7316</i>	207.548		267.214		267.214	285.167	322.399	297.200	302.252	Continuing	Continuing

Remarks

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 Production and Deployment 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 was approved by the JROC on 20 Dec 2011.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>
<p>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) was approved by the Defense Acquisition Executive (DAE) on 21 Mar 2012. The DCGS-A Acquisition Program Baseline was approved on 29 Mar 12. The DCGS-A program received a milestone C decision on 29 Feb 2012 and an operational test was completed in Jun 2012. A successful Full Deployment Decision (FDD) for Release 1 Initial Minimum Capability was obtained December 2012.</p> <p>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 it's 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 of software releases which continue to increase capabilities to satisfy the remaining CPD requirements beyond Initial Minimal Capability. As DCGS-A continues the path through Increment 1 and beyond, each release will focus on the COE and continually align the Command Post activities with DCGS-A Cloud and POR migration activities. The program office expects to continue as the DCGS-A System Integrator for software development and hardware integration, and will continue to access multiple vendors by leveraging a variety of competitively awarded contracts.</p>		
<p><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.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	57.050	73.333	18.294	-	18.294	20.898	20.557	18.009	11.015	Continuing	Continuing
126: <i>FAAD C2 ED</i>	-	9.443	3.664	3.408	-	3.408	0.000	0.000	0.000	0.000	Continuing	Continuing
146: <i>Air & Msl Defense Planning Control Sys</i>	-	15.174	15.381	13.310	-	13.310	16.084	16.114	14.409	7.315	Continuing	Continuing
149: <i>Counter-Rockets, Artillery & Mortar</i>	-	32.433	54.288	1.576	-	1.576	4.814	4.443	3.600	3.700	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY12 RDTE reflects a fact-of-life adjustment in the amount of -\$25.882 million.

FY14 Base RDTE reflects a fact-of-life adjustment in the amount of -\$4.714 million.

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 Air and Missile Defense (AMD) 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 and Reporting 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 and 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 Division Headquarters as part of the Army's modularity concept. System software is able to provide target data and engagement commands/status to AMD Battalions. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated Army National Guard AMD 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 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 Brigade

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604741A: <i>Air Defense Command, Control and Intelligence - Eng Dev</i>
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Combat Teams (BCTs), Multi Functional Support Brigades and Divisions/Corps. AMDPCS systems also provide air defense capabilities to Homeland Defense systems. The fielding 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 and AMD Composite 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 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; provide localized warning to 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, warning systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System (LPWS)), with a commercial off-the-shelf (COTS) wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in two theaters of operation, providing correlated air and ground pictures, linking units to the Army Mission Command and the Joint Defense Network, and using various forms of communications to provide situ

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	82.932	73.333	23.008	-	23.008
Current President's Budget	57.050	73.333	18.294	-	18.294
Total Adjustments	-25.882	0.000	-4.714	-	-4.714
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-4.714	-	-4.714
• Other Adjustments 1	-25.882	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
126: <i>FAAD C2 ED</i>	-	9.443	3.664	3.408	-	3.408	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 Air and Missile Defense (AMD) 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 and Reporting 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 AMD Battalions. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated ARNG (Army National Guard) AMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

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 2012	FY 2013	FY 2014
Title: FAAD C2 Software Development	9.443	3.664	3.408
Articles:	0	0	
Description: Support FAAD C2 software development including unique software enhancements in support of Homeland Defense (HLD), software solutions for Host-Based Software Security (HBSS) and Common Operating Environment (COE) mandates, and security accreditation updates. Integrate Improved Sentinel radar. Incorporate IFF modes 1, 2, 3 (active decode), 5/S capabilities, and self-reporting systems.			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> Supported 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. Modified software to integrate Improved Sentinel. Continued development of IFF modes 1, 2, 3 (active decode), 5/S capabilities, and self-reporting systems.</p> <p><i>FY 2013 Plans:</i> Continue FAAD C2 FY2013 software development including unique software enhancements in support of Homeland Defense. Supporting FAAD C2 software development including: 3-D Common Warfighter Machine Interface (CWMI), IBCS Virtualization Development/Environment and Enhance ABM Simulation. Continue to support implementation of HBSS and IPv6 address scheme. Continue to implement evolving COE requirements for real time systems. Continue security accreditation updates.</p> <p><i>FY 2014 Plans:</i> Complete FAAD C2 software requirements for short range air defense capabilities in support of Homeland Defense. Supporting FAAD C2 software development including: Avenger Upgrades for HLD, CWMI 2D/3D Man Machine Interface Enhancements, Enhance the Battlefield Geometries passing between AMDWS & FAAD C2. Continue to support implementation of HBSS and IPv6 address scheme. Continue to implement evolving COE requirements for real time systems. Continue security accreditation updates.</p>			
Accomplishments/Planned Programs Subtotals	9.443	3.664	3.408

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• AD5050: <i>FAAD C2</i>	5.030	5.031	4.607		4.607					0.000	14.668

Remarks

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	Various	Various:Various	39.790	0.661	Dec 2011	0.292	Dec 2012	0.271	Dec 2013	-		0.271	0.000	41.014	0.000
Subtotal			39.790	0.661		0.292		0.271		0.000		0.271	0.000	41.014	0.000

Remarks
Basic Air Defense functionality will be maintained under Counter-Rockets, Artillery & Mortar (C-RAM) Development.

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Development and Engineering	SS/CPIF	Northrop Grumman:Carson, CA	31.226	6.673	Dec 2011	2.554	Feb 2013	2.375	Feb 2014	-		2.375	0.000	42.828	0.000
Software Engineering	Various	Various:Various	22.191	0.654	Dec 2011	0.254	Dec 2012	0.236	Dec 2013	-		0.236	0.000	23.335	0.000
Subtotal			53.417	7.327		2.808		2.611		0.000		2.611	0.000	66.163	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Certification/Testing	Various	YPG:Yuma, AZ	10.239	1.140	Feb 2012	0.442	Feb 2013	0.412	Feb 2014	-		0.412	0.000	12.233	0.000
Interoperability	Various	CTSF:Ft Hood, TX	2.827	0.315	Dec 2011	0.122	Dec 2012	0.114	Dec 2013	-		0.114	0.000	3.378	0.000
Subtotal			13.066	1.455		0.564		0.526		0.000		0.526	0.000	15.611	0.000

			All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			106.273	9.443	3.664	3.408	0.000	3.408	0.000	122.788	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
FAAD Shelter Systems & Hardware Enter Sustainment												■																
V5.5A Full Materiel Release							■																					
V5.5C Full Materiel Release (FMR)								■																				
FAAD V5.5A Army Interoperability Certification (AIC) @ CTSF				■																								
FAAD V5.5C System Certification Test							■																					
NCR-IADS FAAD 5.5B & RES DT (Development Test)			■																									
Ph.3.2 NCR-IADS Upgrade C-RAM/FAAD C2 5.5A and RES Online Test and Cutover				■																								
5-5 ADA Battalion & 2-44 ADA Battalion Integration/Train/Fielding																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FAAD Shelter Systems & Hardware Enter Sustainment	4	2014	4	2014
V5.5A Full Materiel Release	3	2013	3	2013
V5.5C Full Materiel Release (FMR)	4	2013	4	2013
FAAD V5.5A Army Interoperability Certification (AIC) @ CTSF	4	2012	4	2012
FAAD V5.5C System Certification Test	2	2013	2	2013
NCR-IADS FAAD 5.5B & RES DT (Development Test)	3	2012	3	2012
Ph.3.2 NCR-IADS Upgrade C-RAM/FAAD C2 5.5A and RES Online Test and Cutover	1	2013	1	2013
5-5 ADA Battalion & 2-44 ADA Battalion Integration/Train/Fielding	3	2013	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
146: <i>Air & Msl Defense Planning Control Sys</i>	-	15.174	15.381	13.310	-	13.310	16.084	16.114	14.409	7.315	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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. 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.

FY14 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 2012	FY 2013	FY 2014
Title: AMDWS Software Development	10.728	10.870	10.235
Articles:	0	0	
Description: Continue AMDWS development and support of LandWarNet as well as various Common Operating Environments (COEs). 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. Virtualize AMDWS software development and rehost onto IBCS common hardware systems. Continue integration of the PATRIOT Tactical Planner (PTP), Theater High Altitude Air Defense (THAAD) Tactical Planner, Theater Battle Management Core Systems (TBMCS), and Command, Control, Battle			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Management, and Communications (C2BMC) Planner. Support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) System of Systems.				
FY 2012 Accomplishments: Continued to develop AMDWS software consistent with Capability Set 13-14 requirements, to include greater net-centricity and AMD TRADOC requirements. Re-hosted AMDWS system on a new OS (Microsoft Windows 7) and improved hardware platform graphics. Developed software solutions for COE mandates. Continued to support interconnectivity with PATRIOT PBD-7 production. Continued to develop integration with C2BMC (replacing Joint Defense Planner (JDP)) and TBMCS. Continued support of JLENS, as well as the ever evolving developmental work with Integrated Air and Missile Defense (IAMD). Supported Tactical Mission Command system collapse effort with the design of thick and thin clients for hosting Air and Missile Defense planning and Engagement information on the Command Post of the Future (CPOF) client. Begin development efforts for CS 15-16/COE v2.				
FY 2013 Plans: Complete AMDWS software engineering consistent with Capability Set 13-14 requirements, to include COE, greater net-centricity, and AMD TRADOC requirements. Develop software solutions for COE mandates. Support interconnectivity with PATRIOT PDB-7 production. Finalize and test updated interfaces with C2BMC, THAAD, and PATRIOT. Continue support of JLENS. More fully integrated AMDWS and IBCS. Develop track display enhancements and 3 dimensional model views/modeling and simulation. Complete migration to the 64 bit Windows 7 Operating System. Support efforts for an AMDPCS /IBCS C2 Demo in FY14. Continue development efforts for CS 15-16/COE v2.				
FY 2014 Plans: Continue AMDWS software engineering consistent with Capability Set 15-16/COE v2 requirements. Implement evolving COE requirements for Command Post systems, and possibly Real-Time systems. Continue to develop interfaces with IAMD systems. Support AMDPCS / IBCS C2 Demo. Support testing of interfaces with C2BMC and THAAD. Maintain interconnectivity with PATRIOT and JLENS. Complete track display enhancements, 3D model views, and commercial aircraft de-confliction functions. Continue modeling and simulation efforts. Evaluate AMDWS graphics and system performance for the next generation of hardware platforms.				
Title: ADSI Software Engineering and Development		1.366	1.384	0.679
		Articles: 0	0	
Description: Continue ADSI software engineering and development in software versions 15, including testing and certification of capabilities for TacView Situational Awareness, with air control support, scenario generation and 3-dimensional capability, Radio Frequency (RF) Link 16, Joint Range Extension Application Protocol (JREAP) A/B/C, Sat-J, Integrated Broadcast Service (IBS),				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
External Time Reference (ETR), Situational Awareness Datalink (SADL), Link 11B, FAAD Data Link (FDL) and Serial J. The version 15 software upgrades the ADSI OS to use Windows 7 and Red Hat Linux.				
FY 2012 Accomplishments: Continued ADSI software engineering and development in software version 15. Capabilities for version 15 include RF Link 16, JREAP A/B/C, Sat-J, IBS, ETR, SADL, Link 11B, FDL and Serial J. In addition, version 15 software includes TacView, a 3-dimensional situational awareness graphic user interface (GUI). Prepared version 15 software baseline for LandWarNet/COE AIC activities, documentation update activities, and Authority-to-Operate (ATO) activities.				
FY 2013 Plans: Continue ADSI software engineering and development in software version 15. Conduct certification activities of version 15 software, including pursuit of ATO and AIC. Continue development/refinement of software in response to any anomalies discovered during certification. Implement updates and refinement in accordance with MIL-STD updates.				
FY 2014 Plans: Support testing of ADSI version 15 software. Resolve anomalies identified during test. Begin ADSI version 16 software development. Continue to implement updates in the ADSI baseline as a result of changes in interface systems and MIL-STDs.				
Title: Engineering, Development, Test and Evaluation				
Articles:				2.094 0
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.				2.123 0
FY 2012 Accomplishments: Continued engineering, development, test and evaluation of the AMDPCS shelter system Objective configuration; continued evaluation and definitization of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems. Evaluated system modifications to incorporate new Mode 5 level 2 IFF capabilities for correlating aircraft systems.				1.597
FY 2013 Plans: Continue engineering, development, test and evaluation of the AMDPCS shelter system Objective configuration; continue evaluation and definitization of the AMDPCS tactical communications upgrades for fielded systems. Support virtualization				

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
of AMDPCS systems on other architectures. Incorporating some IBCS functions in an ADAM cell to support IAMD FY14 demonstration. Provide support for an ADAM shelter / IBCS C2 demonstration in FY14. FY 2014 Plans: Continue evaluation of AMDPCS shelter system configurations. Assess evolving technologies for providing system power and environmental. Evaluate communications, secure wireless, secure VTC and data processing technologies for potential system applications. Evaluate ADAM shelter / IBCS C2 capabilities during FY14 demo. Develop interfaces for demonstrating capabilities of ADAM / IAMD as a System Under Evaluation (SUE) at Network Integration Evaluation (NIE) 15.1.			
Title: Software System Certification Testing, Accreditation, and Approval of Authority-to-Operate (ATO) Description: Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments. FY 2012 Accomplishments: Continued software system certification testing, accreditation, and approval of ATO for the various software systems; continued Army and Joint integration and interoperability assessments. 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. FY 2014 Plans: Continue software system certification testing, accreditation, and approval of ATO for the various software systems; continue Army and Joint integration and interoperability assessments.	0.986 0	1.004 0	0.799
Articles:			
Accomplishments/Planned Programs Subtotals	15.174	15.381	13.310

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• AD5070: <i>AMDPCS</i>	90.710	64.144	33.090		33.090	37.816	28.802	40.500	13.000	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

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.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	Various	Various:Various	24.876	2.037	Dec 2011	2.081	Dec 2012	1.685	Dec 2013	-		1.685	Continuing	Continuing	0.000
Subtotal			24.876	2.037		2.081		1.685		0.000		1.685			0.000

Remarks
Not Applicable

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AMDWS Software Development and Engineering	SS/CPFF	Northrop Grumman:Huntsville AL	96.247	9.263	Dec 2011	9.347	Dec 2012	10.134	Dec 2013	-		10.134	Continuing	Continuing	Continuing
ADSI Software Development and Engineering	SS/T&M	Ultra Electronics:Austin, TX	6.868	0.211	Feb 2012	0.219	Mar 2013	0.105	Mar 2014	-		0.105	Continuing	Continuing	Continuing
Developmental Engineering	Various	Various:Various	38.328	3.546	Dec 2011	3.615	Dec 2012	1.238	Dec 2013	-		1.238	Continuing	Continuing	Continuing
Subtotal			141.443	13.020		13.181		11.477		0.000		11.477			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Certification/Testing	Various	JITC:Ft Huachuca, AZ	0.964	0.070	Feb 2012	0.071	Feb 2013	0.068	Feb 2014	-		0.068	Continuing	Continuing	Continuing
Interoperability Assessment	Various	CTSF:Ft Hood, TX	1.318	0.047	May 2012	0.048	May 2013	0.080	May 2014	-		0.080	Continuing	Continuing	Continuing
Subtotal			2.282	0.117		0.119		0.148		0.000		0.148			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>				
	All Prior Years	FY 2012	FY 2013		FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	168.601	15.174	15.381		13.310	0.000	13.310			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
AMDWS V6.6 FMR								■																				
V7.0 FMR																■												
15-16																												
17-18																												
19-20																												
ADAM IAMD MWO Development / Application / Test																												
C-RAM Demo		■																										
C-RAM 2012 Summer Demo			■																									
C-RAM 2013 Winter Demo							■																					
IAMD/ADAM/IBCS Demo												■																
NIE 12.2		■																										
NIE 13.1							■																					
NIE 13.2												■																
NIE 14.1&2																												
ADAM IAMD Shelter in NIE 15.1 as System Under Evaluation																												
NIE X.X																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AMDWS V6.6 FMR	4	2013	4	2013
V7.0 FMR	4	2015	4	2015
15-16	1	2013	4	2014
17-18	1	2015	4	2016
19-20	1	2017	4	2018
ADAM IAMD MWO Development / Application / Test	3	2013	3	2014
C-RAM Demo	2	2012	2	2012
C-RAM 2012 Summer Demo	3	2012	4	2012
C-RAM 2013 Winter Demo	2	2013	2	2013
IAMD/ADAM/IBCS Demo	1	2014	1	2014
NIE 12.2	2	2012	3	2012
NIE 13.1	1	2013	1	2013
NIE 13.2	3	2013	3	2013
NIE 14.1&2	1	2014	4	2014
ADAM IAMD Shelter in NIE 15.1 as System Under Evaluation	1	2015	1	2015
NIE X.X	1	2016	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
149: <i>Counter-Rockets, Artillery & Mortar</i>	-	32.433	54.288	1.576	-	1.576	4.814	4.443	3.600	3.700	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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; provide localized warning to 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, warning systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System (LPWS)), with a commercial off-the-shelf (COTS) wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in two theaters of operation, providing correlated air and ground pictures, linking units to the Army Mission Command and the Joint Defense Network, and using various forms of communications to provide situational awareness and exchange of timely and accurate information in order 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 locations in Iraq in support of Department of State (DoS) and Office of Security Cooperation-Iraq (OSC-I) operations and 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, required to meet emerging theater requirements, include C2 software upgrades as well as integration and deployment of Ka and Ku band Multi-Function Radio Frequency System (MFRFS) radars for an enhanced detection capability against stressing threats. Base RDTE funding for FY 2015 and beyond supports maintenance of C2 basic Air Defense functionality. 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 Aircraft Systems (UAS) Universal Ground Control Station (UGCS) for enhanced situational awareness, combat identification, and response options; and dynamic clearance of unplanned fires (DCUF) in conjunction with the Advanced Field Artillery Tactical Data System (AFATDS) for rapid and enhanced response.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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The C-RAM Program Directorate is also the Materiel Developer for the Accelerated Improved Intercept Initiative (AI3), a rapid development effort to provide an Intercept capability to defeat stressing threats. Current C-RAM Intercept assets (i.e., LPWS) are undergoing reset and will be fielded to composite Indirect Fire Protection Capability (IFPC)/Avenger battalions beginning in 1QFY14.

The Rocket, Artillery, Mortar (RAM) Warn program evolved from the C-RAM program and is a horizontal technology insertion, using current C-RAM warning equipment, to provide early, localized warning to all Maneuver Brigade Combat Teams (BCT). Prior year C-RAM RDTE funding was shared to conduct RAM Warn test activities in support of the Milestone C decision.

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

	FY 2012	FY 2013	FY 2014
<p>Title: C-RAM C2 Software Development and Enhancements</p> <p align="right">Articles:</p> <p>Description: Software development effort based on changes in threat, integration of emerging requirements from external PMs (e.g., upgraded sensors), technology insertions (e.g., new missile technologies), and interoperability requirements (e.g., IAMD, comms, and HBSS requirements), to ensure that enhancements to C-RAM C2 software do not negatively impact the performance of the other C-RAM pillars.</p> <p>FY 2012 Accomplishments: C-RAM C2 software development contract efforts.</p> <p>FY 2013 Plans: C-RAM C2 software development contract efforts.</p> <p>FY 2014 Plans: C-RAM C2 software development contract efforts.</p>	<p>12.839</p> <p>0</p>	<p>10.619</p> <p>0</p>	<p>1.576</p>
<p>Title: C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation</p> <p align="right">Articles:</p> <p>Description: Replaces commercial off-the-shelf (COTS) radios that link C-RAM C2 to sensors with Joint Tactical Radio System (JTRS) when available and replaces current Warn radios with military spectrum radios, providing enhanced reliability, sustainability, and supportability. Integrates/tests Warn function into current C-RAM C2, eliminating a COTS box.</p> <p>FY 2012 Accomplishments: C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation</p> <p>FY 2013 Plans:</p>	<p>10.681</p> <p>0</p>	<p>10.768</p> <p>0</p>	<p>0.000</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
C2 & Warn Improvements - Use of Tactical Radio and Integration of Warn into C2 Workstation				
Title: UAS Universal Ground Control Station Integration				
Articles:		4.691 0	3.988 0	0.000
Description: Integrates C-RAM C2 with the Army UAS Universal Ground Control Station, enabling direct tasking of Shadow, Hunter, and Warrior UAS to the indirect fire point of origin.				
FY 2012 Accomplishments: UAS Universal Ground Control Station Integration				
FY 2013 Plans: UAS Universal Ground Control Station Integration				
Title: Dynamic Clearance of Fires				
Articles:		4.222 0	3.988 0	0.000
Description: Provides an automated unplanned fires clearance capability, enabling the safe engagement of targets that would not be possible with current, manual procedures. Provides more rapid clearance of airspace and more effective engagements of unplanned targets.				
FY 2012 Accomplishments: Dynamic Clearance of Fires				
FY 2013 Plans: Dynamic Clearance of Fires				
Title: Interceptor Enhancements				
Articles:		0.000	24.925 0	0.000
Description: Provides directed enhancements to Intercept capability (e.g., improved tactical mobility, upgun for increased lethality/range, and/or alternative options to the current LPWS capability).				
FY 2013 Plans: Provides directed enhancements to Intercept capability (e.g., improved tactical mobility, upgun for increased lethality/range, and/or alternative options to the current LPWS capability).				
Accomplishments/Planned Programs Subtotals		32.433	54.288	1.576

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• BZ0526: <i>Counter-Rocket, Artillery & Mortar (C-RAM)</i>	50.674									0.000	50.674
• H30503: <i>Rocket, Artillery, Mortar (RAM) Warn (Parent program is Indirect Fire Protection Family Of Systems: BZ0501)</i>		29.881	11.929		11.929	41.552	43.655	29.451		0.000	156.468
• H30504: <i>C-RAM Enhancements (Parent program is Indirect Fire Protection Family Of Systems: BZ0501)</i>			43.425		43.425	30.793	2.970			0.000	77.188

Remarks

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 LPWS is currently in Department of the Army 3-star staffing. Upon approval of the CPD, LPWS will transition to fielding and sustainment to Army units.

In parallel, the C-RAM Program Directorate is developing an enhanced interceptor, the AI3, which was initiated in response to a U.S. Forces-Iraq (USF-I) Joint Urgent Operational Needs (JUON) to counter slow moving, close-in, and irregular flight pattern rockets and munitions. On 6 March 2012, the Deputy Chief of Staff, G-3/5/7, approved a Directed Requirement (DR) for AI3, which validated the need to continue development of the AI3 capability to achieve a relatively near-term improved C-RAM intercept capability and provide a risk mitigation course of action to support defeat of the threat contained in the JUON. The approach selected for acquisition of the AI3 is to take full advantage of NDI and COTS items. The use of COTS and NDI allows the Government to realize the maximum advantage of continually evolving technologies.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	Various	Various:Various	18.059	1.386		1.427		1.452		-		1.452	Continuing	Continuing	Continuing
Subtotal			18.059	1.386		1.427		1.452		0.000		1.452			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Northrop Grumman	SS/CPIF	C-RAM C2 Software Development and Enhancements:Carson, CA	34.570	28.577		21.650	Aug 2013	0.124		-		0.124	Continuing	Continuing	Continuing
Raytheon Company	C/CPIF	Improved Interceptor:Tucson, AZ	77.675	-		23.743		-		-		-	0.000	101.418	0.000
Subtotal			112.245	28.577		45.393		0.124		0.000		0.124			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OGA	Various	TBD:TBD	15.170	2.470		7.468		-		-		-	Continuing	Continuing	Continuing
Subtotal			15.170	2.470		7.468		0.000		0.000		0.000			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		145.474	32.433	54.288	1.576	0.000	1.576		

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 Interceptor Live Fire Demo								■																				
C-RAM Intercept CPD							■																					
C-RAM Intercept (LPWS) Prep for Fielding																												
C-RAM Intercept Limited User Test (LUT)								■																				
5-5 ADA Fielding											■																	
2-44 ADA Fielding															■													
LPWS Sustainment																												
Training			■																									
RAM Warn Initial Operational Test (IOT)							■																					
RAM Warn LRIP							■																					
FRP Decision Review											■																	
RAM Warn Production and Fielding																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Enhanced Interceptor Live Fire Demo	4	2013	4	2013
C-RAM Intercept CPD	2	2013	2	2013
C-RAM Intercept (LPWS) Prep for Fielding	2	2012	3	2015
C-RAM Intercept Limited User Test (LUT)	4	2013	4	2013
5-5 ADA Fielding	1	2014	1	2014
2-44 ADA Fielding	1	2015	1	2015
LPWS Sustainment	1	2014	4	2018
Training	3	2012	3	2012
RAM Warn Initial Operational Test (IOT)	1	2013	1	2013
RAM Warn LRIP	1	2013	1	2013
FRP Decision Review	1	2014	1	2014
RAM Warn Production and Fielding	3	2013	4	2018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	27.530	28.937	17.013	-	17.013	19.203	16.894	15.243	15.062	Continuing	Continuing
361: <i>Intelligence Simulation Systems (MIP)</i>	-	8.079	8.171	1.578	-	1.578	1.450	1.805	1.826	1.796	Continuing	Continuing
362: <i>Jnt Land Component Constructive Trng</i>	-	19.451	20.766	15.435	-	15.435	17.753	15.089	13.417	13.266	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Funds were realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

This program element funds the development of constructive and wargame simulations used to realistically train commanders and their battle staffs on today's complex battlefield conditions. Project 361 funds the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) that provides Warfighting Commanders at all echelons the ability to train with Intelligence, Surveillance, and Reconnaissance (ISR) products based on realistic ISR assets, people (including the maneuver commander, G-2, G-3, collection manager, analyst/operator) and processes. IEWTPT provides embedded training capability for Future Army ISR systems. IEWTPT will interface/stimulate ISR systems including Tactical Unmanned Aerial Vehicle (TUAV), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES), Guardrail, Counter Intelligence/Human Intelligence Management Systems (CHIMS), Prophet and Distributed Common Ground Station-Army (DCGS-A). IEWTPT is the only Army Simulation System supporting ISR training from the Warfighter to the Military ISR Analyst/System Operator. Project 362, Joint Land Component Constructive Training Capability (JLCCTC), develops the Army's premier wargame simulation for training leaders and Battle Staffs at Brigade, Division, Corps, and echelons above Corps. JLCCTC will provide functionality not currently available (digital, stability, support and information operations), link to unit organizational 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 2014 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 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	28.274	28.937	23.106	-	23.106
Current President's Budget	27.530	28.937	17.013	-	17.013
Total Adjustments	-0.744	0.000	-6.093	-	-6.093
• Congressional General Reductions	-0.013	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.731	-			
• Adjustments to Budget Years	-	-	-6.093	-	-6.093

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
361: <i>Intelligence Simulation Systems (MIP)</i>	-	8.079	8.171	1.578	-	1.578	1.450	1.805	1.826	1.796	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 sustainment of critical individual and collective tasks/skills and is the core of the United States Army Intelligence Center of Excellence (USAICoEs) MI holistic training strategy and includes both stand-alone and network enabled training capabilities. IEWTPT provides a realistic Intelligence target environment for Multi-Intelligence disciplines (Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), Human Intelligence (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 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 2014 RDT&E funding supports the government program office manning for on-going program activities.

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

	FY 2012	FY 2013	FY 2014
Title: IEWTPT development, integration and support.	6.600	7.034	0.000
Articles:	0	0	
Description: Continue IEWTPT development, integration and support to the user community.			
FY 2012 Accomplishments: Supported Lifestyle Pattern of Life modeling; Target Signature Array (TSA) development; evolved HUMINT, and supported Counter Intelligence capabilities.			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE</i> <i>SIMULATION SYSTEMS DEVELOPMENT</i>		PROJECT 361: <i>Intelligence Simulation Systems (MIP)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>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 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.</p>				
<p>Title: Government Program Management for the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT).</p> <p>Description: Government Program Management for the IEWTPT program.</p> <p>FY 2012 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. Conducted task analysis and engineering development to integrate the HCC into the TCC. Developed and evolved HUMINT scenario and evolved foreign language integration. Supported development of constructive simulation integration.</p> <p>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 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.</p> <p>FY 2014 Plans: Provides for the continuation of program oversight, lifecycle management planning, and Combat Developer support . Enables for configuration control and oversight of interfaces with complementary programs, coordination of integration activities with external programs or continuous participation in planning, integration, and testing of IEWTPT components in a federation (family</p>		<p>1.479</p> <p>0</p>	<p>1.137</p> <p>0</p>	<p>1.578</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	FY 2012	FY 2013	FY 2014
of systems) environment. Covers market surveys, technology insertion studies and reviews of deliverables needed to be ready for openly recompeting the program.			
Accomplishments/Planned Programs Subtotals	8.079	8.171	1.578

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• Appropriation NA0102: <i>Appropriation NA0102; Training Devices, Nonsystem, Intelligence</i>	3.739					2.279	1.472			Continuing	Continuing
• TBWG, OMA 121: <i>TBWG, OMA 121</i>		0.238				0.275	0.330			Continuing	Continuing

Remarks

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Program Management	Various	PEO STRI:Orlando, FL	4.772	1.479	Dec 2011	1.137	Dec 2012	1.578	Oct 2013	-		1.578	Continuing	Continuing	Continuing
Subtotal			4.772	1.479		1.137		1.578		0.000		1.578			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HCC Technology	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	3.427	1.750	Dec 2011	1.530	Dec 2012	-		-		-	Continuing	Continuing	Continuing
Eng & Manufacturing Dev.	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	41.878	4.850	Dec 2011	5.504	Dec 2012	-		-		-	Continuing	Continuing	Continuing
Subtotal			45.305	6.600		7.034		0.000		0.000		0.000			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering & Technical Support	SS/CPFF	General Dynamics C4 Systems:Orlando, FL	2.743	-		-		-		-		-	0.000	2.743	2.743
Subtotal			2.743	0.000		0.000		0.000		0.000		0.000	0.000	2.743	2.743

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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

PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*
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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 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																								■				
Version 11.0 Security Accred.																											■	
Version 11.0 Release																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 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
Version 11.0 Security Accred.	3	2018	3	2018
Version 11.0 Release	4	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
362: <i>Jnt Land Component Constructive Trng</i>	-	19.451	20.766	15.435	-	15.435	17.753	15.089	13.417	13.266	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 2014 funding supports the development, test and integration, verification, and validation of Multi-Resolution Federation-Warfighter's Simulation (MRF-W) and migration to a Unified Constructive Architecture (UCA).

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

	FY 2012	FY 2013	FY 2014
<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 2012 Accomplishments: Verified and validated JLCCTC software models.</p> <p>FY 2013 Plans: Verify and validate JLCCTC software models</p> <p>FY 2014 Plans: Verify and validate JLCCTC software models</p>	1.585 0	1.889 0	1.809
<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>	11.620 0	11.383 0	8.023

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>		PROJECT 362: <i>Jnt Land Component Constructive Trng</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> Continued integration of JLCCTC components for interoperability.</p> <p><i>FY 2013 Plans:</i> Continue integration of JLCCTC components for interoperability (UCA).</p> <p><i>FY 2014 Plans:</i> Continue integration of JLCCTC components for interoperability (UCA).</p>						
<p><i>Title:</i> Engineering and Manufacturing Development (EMD) phase contract activity for User Interface Enhancements.</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Continue EMD phase contract activities for User Interface Enhancements.</p> <p><i>FY 2012 Accomplishments:</i> Developed and integrated user interface enhancements for Army training applications.</p> <p><i>FY 2013 Plans:</i> Develop and integrate user interface enhancements for Army training applications.</p> <p><i>FY 2014 Plans:</i> Develop and integrate user interface enhancements for Army training applications.</p>				3.999 0	4.690 0	4.028
<p><i>Title:</i> Government System Test and Evaluation.</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Government System Test and Evaluation for the Joint Land Component Constructive Training Capability (JLCCTC).</p> <p><i>FY 2012 Accomplishments:</i> Evaluated system performance and conducted system test events.</p> <p><i>FY 2013 Plans:</i> Develop and evaluate system performance and conduct system test events.</p> <p><i>FY 2014 Plans:</i> Develop and evaluate system performance and conduct system test events.</p>				2.247 0	2.804 0	1.575
Accomplishments/Planned Programs Subtotals				19.451	20.766	15.435

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• NSTD Command & Control: <i>OPA, NA0103</i>	17.906	11.788	27.102		27.102	26.594	23.101	22.341	28.504	Continuing	Continuing
• TBWG: <i>OMA, 121</i>	1.183	4.921	7.237		7.237	7.884	7.827	8.297	8.551	Continuing	Continuing

Remarks

D. Acquisition Strategy

Current contracts supporting JLCCTC are extended until the new JLCCTC contract is awarded. Expected award date is scheduled for 2Q 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	Various	PEO STRI:Orlando, FL	37.059	3.616	Dec 2011	5.530	Dec 2012	5.362	Dec 2013	-		5.362	Continuing	Continuing	Continuing
Subtotal			37.059	3.616		5.530		5.362		0.000		5.362			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integration of JLCCTC	SS/FFP	Various:Various	48.606	5.410	Dec 2011	1.416	Dec 2012	1.419	Dec 2013	-		1.419	Continuing	Continuing	Continuing
MRF-W Development of Army Training System	C/CPFF	TBS:TBS	0.000	-		8.366	Dec 2012	4.074	Dec 2013	-		4.074	Continuing	Continuing	Continuing
Development of logistics model	Various	Tapestry:San Diego, CA	19.016	1.599	Dec 2011	-		-		-		-	0.000	20.615	20.615
WARSIM Development of Army Training System	SS/CPFF	Lockheed Martin Info Systems:Orlando, FL	114.305	7.756	Dec 2011	-		-		-		-	0.000	122.061	122.570
Subtotal			181.927	14.765		9.782		5.493		0.000		5.493			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering & Tech Spt	Various	Various:Various	8.000	0.570	Dec 2011	0.207	Dec 2012	1.335	Dec 2013	-		1.335	Continuing	Continuing	Continuing
Subtotal			8.000	0.570		0.207		1.335		0.000		1.335			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Evaluation and Test	Various	Various:Various	13.033	0.092	Dec 2011	3.278	Dec 2012	3.245	Dec 2013	-		3.245	Continuing	Continuing	Continuing

PE 0604742A: *CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT*
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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 V6.1	■																											
JLCCTC V6.2							■																					
JLCCTC V7															■													
JLCCTC V8																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604742A: <i>CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT</i>	PROJECT 362: <i>Jnt Land Component Constructive Trng</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JLCCTC V6.1	2	2012	2	2012
JLCCTC V6.2	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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	13.932	10.815	6.701	-	6.701	15.008	14.397	10.019	10.142	Continuing	Continuing
L59: <i>Diagnost/Expert Sys</i>	-	10.549	8.237	4.683	-	4.683	10.458	10.038	6.228	5.942	Continuing	Continuing
L65: <i>Test Equipment Development</i>	-	3.383	2.578	2.018	-	2.018	4.550	4.359	3.791	4.200	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

FY14, \$5282 reduction to support higher priority projects

A. Mission Description and Budget Item Justification

This program element (PE) provides for development and testing of general-purpose test equipment, state-of-the-art diagnostics and prognostics technologies, and 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, provides 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) that 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.

FY 2014 Base funding for this program continues development of the Army's standard Next Generation Automatic Test System (NGATS) which will improve deployability and mobility of test and diagnostic equipment. The NGATS provides state-of-the-art test and diagnostic capabilities and a means for reducing the Army's test equipment operating and support costs and the costs for supporting a number of the Army's vital warfighting systems. The FY14 funding 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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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	14.361	10.815	11.983	-	11.983
Current President's Budget	13.932	10.815	6.701	-	6.701
Total Adjustments	-0.429	0.000	-5.282	-	-5.282
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.009	-			
• SBIR/STTR Transfer	-0.420	-			
• Adjustments to Budget Years	-	-	-5.282	-	-5.282

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
L59: <i>Diagnost/Expert Sys</i>	-	10.549	8.237	4.683	-	4.683	10.458	10.038	6.228	5.942	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 provides 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 2012	FY 2013	FY 2014
Title: NGATS Logistics Support Products	0.500	0.500	0.500
Articles:	0	0	
Description: Develop NGATS initial logistics support products (including provisioning, technical manuals and calibration)			
FY 2012 Accomplishments: Continue development of initial logistics support products			
FY 2013 Plans: Continue development of initial logistics support products			
FY 2014 Plans: Complete development of initial logistics support products			
Title: Developmental and Operational Follow-on Testing	0.200	0.000	1.000
Articles:	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>		PROJECT L59: <i>Diagnost/Expert Sys</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: Complete Increment 1 developmental and operational follow-on testing activities</p> <p>FY 2012 Accomplishments: Continue developmental and operational testing</p> <p>FY 2014 Plans: Conduct product qualification testing (PQT)</p>				
<p>Title: NGATS Increment 2</p> <p>Description: Develop and test hardware and software for NGATS Increment 2 system</p> <p>FY 2012 Accomplishments: Continue development and testing of Increment 2 hardware and software; initiate development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, Tube-launched Optically-tracked Wire-guided (TOW) Missile System, Paladin and Common Remotely Operated Weapons Station (CROWS) II)</p> <p>FY 2013 Plans: Continue development and testing of Increment 2 hardware and software; initiate development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, Tube-launched Optically-tracked Wire-guided (TOW) Missile System, Paladin and Common Remotely Operated Weapons Station (CROWS) II)</p> <p>FY 2014 Plans: Continue development and testing of Increment 2 hardware and software; continue development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, TOW Missile System, Paladin and CROWS II)</p>		Articles: 3.000 0	1.500 0	1.500
<p>Title: NGATS Electro-Optics Subsystem</p> <p>Description: Develop and test hardware and software for NGATS electro-optics (EO) subsystem (to include the capability to support new ground and aerial sensors for unmanned air and ground vehicles)</p> <p>FY 2012 Accomplishments:</p>		Articles: 2.252 0	2.655 0	0.500

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
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) FY 2014 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 2012 Accomplishments: 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 FY 2014 Plans: Continue development of expanded general-purpose shop replaceable unit diagnostic capability		Articles: 0.500 0	0.500 0	0.250
Title: Abrams/Bradley Test Program Set (TPS) Redesign Description: Redesign, test and evaluate Abrams/Bradley TPSs FY 2012 Accomplishments: Continue redesign, test and evaluation of TPSs FY 2013 Plans: Continue redesign, test and evaluation of TPSs FY 2014 Plans:		Articles: 1.000 0	0.500 0	0.250

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>		PROJECT L59: <i>Diagnost/Expert Sys</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Complete redesign, test and evaluation of TPSs				
Title: Additional Software Capabilities 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 2012 Accomplishments: Continue development of expanded software capabilities FY 2013 Plans: Continue development of expanded software capabilities FY 2014 Plans: Continue development of expanded software capabilities		Articles: 0.800 0	Articles: 0.500 0	Articles: 0.250 0
Title: Smart TPSs Description: Develop enhanced smart TPS hardware and software FY 2012 Accomplishments: Initiate development of enhanced smart TPSs FY 2013 Plans: Continue development of enhanced smart TPSs FY 2014 Plans: Continue development of enhanced smart TPSs		Articles: 0.600 0	Articles: 0.500 0	Articles: 0.100 0
Title: Power and Weight Enhancements Description: Develop power and weight enhancements for NGATS FY 2012 Accomplishments: Initiate development of power and weight enhancements FY 2013 Plans:		Articles: 0.517 0	Articles: 0.500 0	Articles: 0.137 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continue development of power and weight enhancements			
<i>FY 2014 Plans:</i> Continue development of power and weight enhancements			
<i>Title:</i> Abrams/Bradley EO TPS Development	1.180	1.082	0.196
<i>Articles:</i>	0	0	
<i>Description:</i> Develop Abrams/Bradley TPSs for use with NGATS EO asset			
<i>FY 2012 Accomplishments:</i> Initiate development of TPSs			
<i>FY 2013 Plans:</i> Continue development of TPSs			
<i>FY 2014 Plans:</i> Continue development of TPSs			
Accomplishments/Planned Programs Subtotals	10.549	8.237	4.683

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• : OPA3, SSN MB4000, Integrated Family of Test Equipment (IFTE)	36.937	45.508	67.506		67.506	59.106	59.571	56.920	66.966	Continuing	Continuing
Remarks											

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 to satisfy Army depot and field testing requirements for new and existing systems. It will replace existing legacy Army automatic test equipment (ATE) (i.e., Base Shop Test Facility (BSTF)(V)3, BSTF(V)5, and Direct Support Electrical System Test Set) as well as Army depot system specific ATE.

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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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>Diagnost/Expert Sys</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Development/Verification/Validation	Various	Various.:Various	23.271	4.780	Feb 2012	4.737		1.046	Mar 2014	-		1.046	Continuing	Continuing	Continuing
Prototype Development	SS/CPFF	Northrop Grumman, Rolling Meadows, IL.	13.472	2.252	Feb 2012	1.062		-		-		-	Continuing	Continuing	Continuing
Hardware/Support Items Development	Various	Various.:Various	55.129	2.317	Feb 2012	1.438		2.000	Apr 2014	-		2.000	Continuing	Continuing	Continuing
Subtotal			91.872	9.349		7.237		3.046		0.000		3.046			

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Management/Technical Support	Various	Various.:Various	46.691	0.600	Dec 2011	0.600		0.437	Mar 2014	-		0.437	Continuing	Continuing	Continuing
Other Direct	Various	Various.:Various	2.790	0.400	Dec 2011	0.400		0.200	Feb 2014	-		0.200	Continuing	Continuing	Continuing
Subtotal			49.481	1.000		1.000		0.637		0.000		0.637			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Testing	Various	Various.:Various	3.814	0.200		-		0.500	Aug 2014	-		0.500	Continuing	Continuing	Continuing
Developmental Testing	Various	Various.:Various	1.046	-		-		0.500	May 2014	-		0.500	Continuing	Continuing	Continuing
Subtotal			4.860	0.200		0.000		1.000		0.000		1.000			

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 2014 Army							DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>			PROJECT L59: <i>Diagnost/Expert Sys</i>				
	All Prior Years	FY 2012		FY 2013		FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	146.213	10.549		8.237		4.683	0.000	4.683			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>	PROJECT L59: <i>Diagnost/Expert Sys</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 (Increment 1/PQT)																												
NGATS Testing (EO Subsystem)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Full Rate Production Decision Review	2	2013	2	2013
Full Materiel Release	4	2015	4	2015
First Unit Equipped	4	2015	4	2015
NGATS Testing (Increment 1/PQT)	3	2014	3	2015
NGATS Testing (EO Subsystem)	4	2012	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604746A: <i>Automatic Test Equipment Development</i>				PROJECT L65: <i>Test Equipment Development</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
L65: <i>Test Equipment Development</i>	-	3.383	2.578	2.018	-	2.018	4.550	4.359	3.791	4.200	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project supports development and demonstration of state-of-the-art calibration standards and techniques, and upgrades/improvements to existing Army calibration systems. It provides for 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, support of AN/GSM-705 and AN/GSM-421 requirements, improvement of test and measurement equipment performance envelopes via product improvements, and development/evaluation of advance technology and higher reliability calibration systems and general-purpose test, measurement, and diagnostic equipment (TMDE). Product improvements are underway to current test and measurement systems to overcome deficiencies and voids in existing organic capabilities and to ensure 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 2012	FY 2013	FY 2014
Title: AN/GSM-421(V2)	0.050	0.000	0.000
Articles:	0		
Description: Develop and test a tactical, up-armor capable Army calibration system that provides a split-based calibration capability.			
FY 2012 Accomplishments: Complete user testing.			
Title: Calibration Sets (CALSETS) Software Environment and Calibration	1.301	1.126	0.450
Articles:	0	0	
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 2012 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Continue development and evaluation of test and calibration procedures. Conduct development and testing for a calibration software environment. Perform testing efforts for DIACAP issues.</p> <p>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.</p> <p>FY 2014 Plans: Continue development and evaluation of calibration procedures. Perform testing and evaluation to support calibration software environment. Develop and test DIACAP for calibration instrument controllers..</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, small arms gages, pneumatic pressure systems, temperature, etc.</p> <p>FY 2012 Accomplishments: Develop and test calibration standards for optical, radiation and liquid/gas flow calibration test requirements.</p> <p>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.</p> <p>FY 2014 Plans: Develop and test small arms gage calibration standards. Continue development and test of chemical/biological agent detectors and protective equipment testers.</p>		0.743 0	0.427 0	0.702
<p>Title: Electrical Instruments</p> <p align="right">Articles:</p> <p>Description: Research, develop, and test electrical parameter calibration instrumentation to support areas such as deployable recertification set, intrinsic electrical standards, electrical transport standards, etc.</p> <p>FY 2012 Accomplishments:</p>		0.971 0	0.975 0	0.705

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
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 standards. Complete development and initiate testing of a deployable recertification set capability. Continue development and testing of an intrinsic voltage standard. FY 2014 Plans: Perform market research and evaluate commercial equipment and develop performance specifications for acquisition. Complete environmental studies, testing and evaluation of voltage reference standards. Continue development and testing of intrinsic voltage system. Test and evaluate microwave transport standards for automated network analyzers..			
Title: Test Equipment Modernization Description: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition. FY 2012 Accomplishments: 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. FY 2014 Plans: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition.	0.318 0	0.050 0	0.161
Articles:			
Accomplishments/Planned Programs Subtotals	3.383	2.578	2.018

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• SSN N10000: <i>Calibration Sets Equipment</i>	13.618	10.494	8.241		8.241	7.798	7.771	7.136	8.158	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SSN N11000: <i>Test Equipment Modernization</i>	27.451	24.334	18.755		18.755	28.524	28.767	26.778	22.949	Continuing	Continuing

Remarks

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 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
In-house Engineering	SS/LH	Civ Labor:various	2.416	0.600	Apr 2012	0.700		0.715	Oct 2013	-		0.715	Continuing	Continuing	0.000
Subtotal			2.416	0.600		0.700		0.715		0.000		0.715			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AN/GSM-421(V2)	Various	Various:Various	2.346	-		-		-		-		-	Continuing	Continuing	0.000
CALSETS Software Environment and Calibration	Various	Various:Various	4.098	1.009	May 2012	0.600		0.211	Apr 2014	-		0.211	Continuing	Continuing	0.000
Physical Instruments	Various	Various:Various	5.632	0.273	Mar 2012	0.250		0.292	Apr 2014	-		0.292	Continuing	Continuing	0.000
Electrical Instruments	Various	Various:Various	7.287	0.851	Jul 2012	0.578		0.359	Apr 2014	-		0.359	Continuing	Continuing	0.000
Test Equipment Modernization	Various	Various:Various	0.110	0.120	Sep 2012	0.050		-		-		-	Continuing	Continuing	0.000
Subtotal			19.473	2.253		1.478		0.862		0.000		0.862			0.000

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contract Engineering	SS/FFP	University of Alabama, Huntsville:Huntsville, AL	1.837	-		-		0.236	Feb 2014	-		0.236	Continuing	Continuing	0.000
Subtotal			1.837	0.000		0.000		0.236		0.000		0.236			0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AN/GSM-421(V2)	Various	Various:Various	0.570	0.050	Feb 2012	-		-		-		-	Continuing	Continuing	0.000
CALSETS Software Environment and Calibration	Various	Various:Various	0.150	0.150	May 2012	0.200		0.070	Apr 2014	-		0.070	Continuing	Continuing	0.000
Physical Instruments	Various	Various:Various	1.200	0.100	Mar 2012	0.075		0.088	Mar 2014	-		0.088	Continuing	Continuing	0.000
Electrical Instruments	Various	Various:Various	1.263	0.130	Aug 2012	0.075		0.047	Mar 2014	-		0.047	Continuing	Continuing	0.000
Test Equipment Modernization	Various	Various:Various	0.100	0.100	Sep 2012	0.050		-		-		-	Continuing	Continuing	0.000
Subtotal			3.283	0.530		0.400		0.205		0.000		0.205			0.000
Project Cost Totals			27.009	3.383		2.578		2.018		0.000		2.018			0.000

Remarks

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	15.357	13.926	14.575	-	14.575	14.647	15.042	15.365	15.616	Continuing	Continuing
C74: <i>Devel Simulation Tech</i>	-	3.540	2.206	1.476	-	1.476	1.740	1.745	1.870	1.901	Continuing	Continuing
C77: <i>Army Geospatial Data Master Plan</i>	-	0.468	0.000	0.722	-	0.722	0.706	0.718	0.730	0.741	Continuing	Continuing
C78: <i>One Semi-Automated Forces</i>	-	11.349	11.720	12.377	-	12.377	12.201	12.579	12.765	12.974	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Change Summary Explanation: Funding realigned for C78 One Semi-Automated Forces and C77 Army Geospatial Data Master Plan 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 2014 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 continues 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 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	15.787	13.926	13.920	-	13.920
Current President's Budget	15.357	13.926	14.575	-	14.575
Total Adjustments	-0.430	0.000	0.655	-	0.655
• Congressional General Reductions	-0.024	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.406	-			
• Adjustments to Budget Years	-	-	0.655	-	0.655

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
C74: <i>Devel Simulation Tech</i>	-	3.540	2.206	1.476	-	1.476	1.740	1.745	1.870	1.901	Continuing	Continuing	
Quantity of RDT&E Articles													

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 Program Executive Office (PEO) Simulation, Training, and Instrumentation (STRI) and PEO Command Control Communications-Tactical (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 2014 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)

Title: Program Management for the SIMCI Overarching Integrated Product Team (OIPT) Projects.	FY 2012	FY 2013	FY 2014
	3.454	2.206	1.476
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.			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> 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 Mission Command (MC) and Modeling & Simulation (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><i>FY 2013 Plans:</i> 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><i>FY 2014 Plans:</i> 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>			
<p><i>Title:</i> Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)</p> <p style="text-align: right;"><i>Articles:</i></p> <p><i>Description:</i> SBIR/STTR</p> <p><i>FY 2012 Accomplishments:</i> Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)</p>	0.086 0	0.000	0.000
Accomplishments/Planned Programs Subtotals	3.540	2.206	1.476

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy SIMCI OIPT resources are allocated to multiple organizations in both the Mission Command (MC) and Modeling and Simulation (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.		
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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	Various	PEO STRI:Orlando, FL	9.284	0.216	Dec 2011	0.200	Dec 2012	0.183	Dec 2013	-		0.183	Continuing	Continuing	Continuing
SBIR/STTR	TBD	PEO STRI:Orlando, FL	0.000	0.086	Oct 2011	-		-		-		-	0.000	0.086	0.000
Subtotal			9.284	0.302		0.200		0.183		0.000		0.183			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Transition of simulation initialization capability	Various	JCW:Suffolk, VA	2.461	0.373	Feb 2012	0.193	Feb 2013	0.142	Feb 2014	-		0.142	Continuing	Continuing	Continuing
Geospatial Initiative	Various	GMU:Fairfax, VA	1.028	0.360	Feb 2012	0.215	Feb 2013	0.147	Feb 2014	-		0.147	Continuing	Continuing	Continuing
Data Model applications and reference implementations	Various	Viecore FSD, George Mason Univ.:Ft. Monmouth, NJ	1.912	0.451	Feb 2012	0.144	Feb 2013	0.095	Feb 2014	-		0.095	Continuing	Continuing	Continuing
Implementation of Initialization Products	Various	Alion Science & Technology:Tyson's Corner, VA	1.795	0.460	Feb 2012	0.150	Feb 2013	0.103	Feb 2014	-		0.103	Continuing	Continuing	Continuing
Initialization Study Implementation	Various	IDA:Alexandria, VA	0.710	0.300	Feb 2012	0.170	Feb 2013	0.119	Feb 2014	-		0.119	Continuing	Continuing	Continuing
Mission Command systems data mediation/web services	Various	NVESD, CERDEC, AGC:Various	2.419	0.191	Dec 2011	0.200	Dec 2012	0.095	Dec 2013	-		0.095	Continuing	Continuing	Continuing
Expanding MTOE System Architecture (SA) Data	SS/FP	General Dynamics:Orlando, FL	1.619	0.202	Feb 2012	-		-		-		-	0.000	1.821	1.829
C2 Adapter Web Services and Tools	Various	PEO STRI & ACG:Orlando, FL	1.918	0.442	Feb 2012	0.225	Feb 2013	0.125	Feb 2014	-		0.125	Continuing	Continuing	Continuing
Subtotal			13.862	2.779		1.297		0.826		0.000		0.826			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
C77: <i>Army Geospatial Data Master Plan</i>	-	0.468	0.000	0.722	-	0.722	0.706	0.718	0.730	0.741	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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.

FY 2014 funding continues development efforts associated with the Ground-Warfighter Geospatial Data Model(GGDM) and Geospatial Data Standards.

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

	FY 2012	FY 2013	FY 2014
Title: Ground-Warfighter Geospatial Data Model (GGDM) formerly Army Geospatial Data Model (AGDM)	0.232	0.000	0.350
Articles:	0		
Description: The GGDM 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>common geospatial data standards into the GGDM makes the Programs of Record (POR) consistent with new DISR-mandated geospatial intelligence standards for the NSG.</p> <p>FY 2012 Accomplishments: Contribute to the development of the Army Geospatial Data Model version 2.1</p> <p>FY 2014 Plans: Perform data modeling actions necessary to develop the next version of the GGDM (ver 2.2.) including aligning content from Aviation, Human Geography and adding and aligning new content from NGA's 8 domain data stores.</p>			
<p>Title: Geospatial Data Standards</p> <p align="right">Articles:</p> <p>Description: Army Geospatial Standards including data standards and standards for services to manage process and disseminate and utilized geospatial data.</p> <p>FY 2012 Accomplishments: Develop geospatial data standards and integrate geospatial data into the Battle Command (BC) systems.</p> <p>FY 2014 Plans: FY14 funds will be directed toward the development and consistent integration of geospatial enterprise data standards, including standard practices for production and management of geospatial data, into Army Mission Command, Simulation and Training programs, systems and organizations.</p>	0.236 0	0.000	0.372
Accomplishments/Planned Programs Subtotals	0.468	0.000	0.722

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

Remarks

D. Acquisition Strategy
Resources are allocated to multiple organizations for approval and execution of projects in support of the Army Geospatial Data Integrated Master Plan (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 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
C78: <i>One Semi-Automated Forces</i>	-	11.349	11.720	12.377	-	12.377	12.201	12.579	12.765	12.974	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

One Semi-Automated Forces (OneSAF) 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 -- OneSAF. OneSAF is a high 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 is fully interoperable with the Army's emerging virtual, live, and division-and-above constructive simulations and provides next-generation simulation products. OneSAF replaces a variety of legacy simulations currently used within the Army to support analytic and training simulation activities.

FY 2014 funding will continue development of the software product line by providing OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the OneSAF Project Office - Training and Doctrine Command (TRADOC).

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

	FY 2012	FY 2013	FY 2014
Title: Engineering and Manufacturing Development (EMD) phase contract activities for the One Semi-Automated Forces program.	7.970	8.120	8.772
Articles:	0	0	
Description: Continue EMD phase contract activities for the OneSAF program.			
FY 2012 Accomplishments: Provided for the development of software for OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command (TRADOC) Project Office. Executed software development of functionality to provide architectural services, components, synthetic environment and infrastructure capable of supporting initial model development. Completed 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
to enhance architectural services, components, synthetic environment and infrastructure capable of supporting model development. Perform Software development, test and release of Version 6.0 FY 2014 Plans: Continues the development of software capabilities to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by Training and Doctrine Commands (TRADOC) OneSAF Project Office. Continues enhancement of functionality of architectural services, components, the synthetic environment and infrastructure capable of supporting model development. Performs Software development, test and release of Version 7.0.				
Title: Government System Test and Evaluation for the One Semi-Automated Forces program. Description: Government System Test and Evaluation for the OneSAF program. FY 2012 Accomplishments: 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 Joint Land Component Constructive Training Capability (JLCCTC) federation and Live Virtual Constructive (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. FY 2014 Plans: Perform software development, test, integration, release and verification for Version 7.0. Continue to provide support to the user community in conducting experiments and validation events as needed for integration into the JLCCTC federation and LVC applications		0.965 Articles: 0	1.100 0	1.200
Title: Government Program Management for the OneSemi-Automated Forces (OneSAF) program. Description: Government Program Management for the OneSAF program. FY 2012 Accomplishments: 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:		2.414 Articles: 0	2.500 0	2.405

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
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. FY 2014 Plans: Provides for Government Program Management Office support for the development and integration of OneSAF Version 7.0 scheduled for release in FY 14. Funding also supports manpower, facilities, training, operations and maintenance and other infrastructure requirements across the OneSAF Program.			
Accomplishments/Planned Programs Subtotals	11.349	11.720	12.377

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OMA: OMA, 121014000	3.930	4.232	5.043		5.043	5.028	5.141	5.224	5.313	Continuing	Continuing

Remarks
OMA funds provide for maintenance of existing OneSAF product line to include life cycle software support and OneSAF TRADOC Project Office (TPO).

D. Acquisition Strategy

Continue the yearly release of the OneSAF Software (SW) versions containing performance enhancements resulting from the development and integration of both approved Product Improvements and Co-Developer handovers. PM OneSAF continues to manage two Delivery Orders for the Development, Integration, Interoperability, and Support (I2S) of capabilities products, data, and documentation that fully serves the current and evolving needs of the 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 Development Delivery Order is primarily focused on capability enhancements within the OneSAF Product Line. The key objectives here are to develop the capabilities needed to execute the OneSAF production line and deliver OneSAF SW product line, data, and documentation to meet the needs of the growing user community. These software products will include capabilities supporting the requirements of the OneSAF program; other US Army PEOs and PMs, TRADOC Battle Labs, Research and Development Centers (RDECs) and agencies; other Service and Joint agencies; Foreign Countries; non Department of Defense government organizations and agencies; academic institutions and other Co-Developers.

The I2S Delivery Order is primarily 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

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	PE 0604760A: <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	C78: <i>One Semi-Automated Forces</i>

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	Various	PEO STRI, Orlando, FL:Various	15.481	2.414	Dec 2011	2.500	Dec 2012	2.405	Oct 2013	-		2.405	Continuing	Continuing	Continuing
Subtotal			15.481	2.414		2.500		2.405		0.000		2.405			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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	0.650	Dec 2011	1.500	Dec 2012	1.500	Oct 2013	-		1.500	Continuing	Continuing	Continuing
Software Development	C/CPFF	Science Applications International Corp:Orlando, FL	1.150	5.354	Dec 2011	4.310	Dec 2012	5.222	Oct 2013	-		5.222	Continuing	Continuing	Continuing
Subtotal			113.719	6.004		5.810		6.722		0.000		6.722			

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 5.5			■																									
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																											■	
OneSAF Version Release 11.0																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
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
OneSAF Version Release 11.0	2	2018	2	2018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	21.541	17.797	27.634	-	27.634	26.413	26.372	25.534	28.367	Continuing	Continuing
571: <i>Close Cbt Tact Trainer</i>	-	4.202	4.252	0.828	-	0.828	0.828	0.704	0.663	0.657	Continuing	Continuing
577: <i>Gaming Technology In Support Of Army Training</i>	-	1.384	1.348	2.118	-	2.118	1.439	1.297	1.348	1.400	Continuing	Continuing
582: <i>Synthetic Envir Core</i>	-	13.488	9.616	20.860	-	20.860	20.434	20.422	18.823	22.322	Continuing	Continuing
585: <i>Aviation Combined Arms Tactical Trainer</i>	-	2.467	2.581	3.828	-	3.828	3.712	3.949	4.700	3.988	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Change Summary Explanation: SE Core is required to generate a larger area (over 4M sq km) of terrain databases. In addition, these databases are required to have a higher resolution of data within the database. Budget adjustment received to achieve requirements.

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 the 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 Unified Land 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 virtual 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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604780A: <i>Combined Arms Tactical Trainer (CATT) Core</i>
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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 Unified Land Operations.

FY 2014 Project 571 core funding of \$.828 million for CCTT 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.

FY 2014 Project 577 core funding of \$2.118 million for Games for Training will integrate the flagship product into the Live-Virtual-Constructive Integrated Training Environment (LVC-ITE).

FY 2014 Project 582 core funding of \$20.860 million for SE Core will provide for common virtual 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 2014 Project 585 core funding of \$3.828 million for AVCATT will develop and test the replacement Sensor Video Recording System functionality in AVCATT to meet the After Action Review (AAR) Key Performance Parameter (KPP). It will also design new capabilities to enhance training when using the AVCATT and NCM3 in combined mode, including improved communications, hoist operations, slingload operations, and visual realism improvements.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	22.205	17.797	21.119	-	21.119
Current President's Budget	21.541	17.797	27.634	-	27.634
Total Adjustments	-0.664	0.000	6.515	-	6.515
• Congressional General Reductions	-0.014	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.650	-			
• Adjustments to Budget Years	-	-	6.515	-	6.515

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
571: <i>Close Cbt Tact Trainer</i>	-	4.202	4.252	0.828	-	0.828	0.828	0.704	0.663	0.657	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

The Close Combat Tactical Trainer (CCTT) program provides for Engineering and Manufacturing Development (EMD) and Pre-Planned Product Improvements (P3I), 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 Unified Land Operations. CCTT develops, fields and sustains 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 for armor, infantry, cavalry, reconnaissance, and other combat units at Squad through Brigade level. CCTT allows command units and 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 and mission effectiveness. 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), Live, Virtual and Constructive-Integrating Architecture (LVC-IA) and other simulation systems needed to execute training for current and future combat operations.

FY 2014 core funding of \$.828 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 Armor Brigade Combat Teams.

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

	FY 2012	FY 2013	FY 2014
Title: Government Program Management for the Close Combat Tactical Trainer (CCTT) program.	0.182	0.729	0.165
Articles:	0	0	
Description: Government Program Management for the CCTT program.			
FY 2012 Accomplishments: Supported government program management, engineering, technical, contracting support, and continued operational evaluation support.			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Supports government program management, engineering, technical, contracting support, and continues operational evaluation support. FY 2014 Plans: 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. Articles:	4.020 0	3.523 0	0.663
Description: Continue EMD phase contract activities for the CCTT DSTS. FY 2012 Accomplishments: Enabled 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. FY 2013 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. FY 2014 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.			
Accomplishments/Planned Programs Subtotals	4.202	4.252	0.828

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA3, Appropriation NA0170: <i>OPA3, Appropriation NA0170</i>	13.290	19.984	30.063		30.063	31.379	28.847	28.313	22.873	Continuing	Continuing
• OMA, Appropriation 121018000: <i>OMA, Appropriation 121018000</i>			1.600		1.600	0.100	0.100	0.100	0.100	Continuing	Continuing

Remarks
The RDT&E efforts will provide enhancements to the hardware and software of the program to meet warfighter mission priorities. These enhancements, after proper testing, will be procured and fielded with the programs procurement funds.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
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D. Acquisition Strategy

FY 2014 will enable Pre-Planned Product Improvements (P3I) for the Dismounted Soldier Training System (DSTS).

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Program Management	Various	PEO STRI:Orlando, FL	16.899	0.182	Dec 2011	0.729	Dec 2012	0.165	Dec 2013	-		0.165	Continuing	Continuing	Continuing
Subtotal			16.899	0.182		0.729		0.165		0.000		0.165			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development of CCTT Dismounted Soldier Training System	C/FFP	Intelligent Decisions, Inc.:Ashburn, VA	2.876	4.020	Feb 2012	3.523	Feb 2013	0.663	Feb 2014	-		0.663	Continuing	Continuing	Continuing
Subtotal			2.876	4.020		3.523		0.663		0.000		0.663			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		19.775	4.202	4.252	0.828	0.828			

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
577: <i>Gaming Technology In Support Of Army Training</i>	-	1.384	1.348	2.118	-	2.118	1.439	1.297	1.348	1.400	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Games for Training (GFT) enables Commanders, 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 Integrating Architecture (LVC-IA). The 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. GFT program currently supports Overseas Contingency Operations (OCO), Unified Land Operations, Contemporary Operating Environment and Decisive Action.

FY 2014 core funding of \$2.118 million will integrate the flagship product into the LVC-ITE. It will also integrate new commercial and government technology products into the current gaming system.

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

	FY 2012	FY 2013	FY 2014
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Games for Training (GFT) program.	1.090	1.009	1.752
Articles:	0	0	
Description: Continue EMD phase contract activities for the GFT program.			
FY 2012 Accomplishments: Funding provided 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 Unified Land Operations.			
FY 2013 Plans: Funding will provide modifications to the GFT system to ensure compliance with the LVC-ITE in support of Decisive Operations.			
FY 2014 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
Funding will provide modifications to the GFT system to ensure compliance with the LVC-ITE in support of Unified Land Operations.			
Title: Government Program Management for the GFT program.	0.294	0.339	0.366
Articles:	0	0	
Description: Government Program Management for the GFT program.			
FY 2012 Accomplishments: Government program management, engineering, technical, contract and test activities provide fielding, integration of software and web hosted support to Soldier tactical training.			
FY 2013 Plans: Supports Government program management, engineering, technical, contract and test support for the GFT program.			
FY 2014 Plans: Government program management, engineering, technical, contract and test activities provide fielding, integration of software and web hosted support to Soldier tactical training.			
Accomplishments/Planned Programs Subtotals	1.384	1.348	2.118

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPA 3: <i>OPA 3, Appropriation NA0176 Gaming Technology in Support of Army Training</i>		9.956	9.955		9.955	8.595	8.119	6.321	8.754	Continuing	Continuing
Remarks											

D. Acquisition Strategy
Competitive contract against the approved Capabilities Production Document (CPD), dated 18 Sep 08.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
582: <i>Synthetic Envir Core</i>	-	13.488	9.616	20.860	-	20.860	20.434	20.422	18.823	22.322	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 integrated and interoperable. SE Core provides virtual simulators with visual models (buildings and vehicles), terrain (over which the simulator moves), and entity behaviors (models performing realistic and appropriate actions such as movement and weapon effects) 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. Fair Fight 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, allowing various simulators to be "hooked up" together for a train as we fight capability. SE Core is a foundational element in the Army's Training Transformation Plan linking the embedded systems, multi-mode Live, Virtual, Constructive, Gaming (LVCG) 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 2014 base funding of \$20.860 million will continue the efforts of providing expanded development and production for common terrain databases. FY 2014 funds will modify the Terrain Development process for constructive Terrain Database Production and continue to enhance OneSAF in the SE Core Architecture. 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 2012	FY 2013	FY 2014
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Synthetic Environment Core (SE Core) program.	11.604	7.704	19.006
Articles:	0	0	
Description: Continue EMD phase contract activities for the SE Core program.			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p><i>FY 2012 Accomplishments:</i> Provided 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. Continued to provide OneSAF the consolidated virtual SAF requirements.</p> <p><i>FY 2013 Plans:</i> Provides expansion of the production capability to meet the growing demand for synthetic terrain for training including constructive simulations. In addition, SE Core is prepared to begin development of the SAF behaviors for the Dismounted Soldier System. Efforts to improve interoperability across simulators and simulations continue.</p> <p><i>FY 2014 Plans:</i> Provides expansion of the production capability to meet the growing demand for synthetic terrain for training including constructive simulations. Efforts to improve interoperability across simulators and simulations continue.</p>				FY 2013
<p><i>Title:</i> Government Program Management for the Synthetic Environment Core (SE Core) program.</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Government Program Management for the SE Core program.</p> <p><i>FY 2012 Accomplishments:</i> 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><i>FY 2013 Plans:</i> 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><i>FY 2014 Plans:</i> Provides program management, engineering and technical oversight, contract support, and test support (including travel for Subject Matter Experts) for development of SE Core.</p>				FY 2014
				1.884
				0
				1.912
				0
				1.854
Accomplishments/Planned Programs Subtotals				13.488
				9.616
				20.860

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</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>	9.413	11.977	34.913		34.913	33.768	35.667	30.900	29.278	Continuing	Continuing
• OPA3, Appropriation NA0170: <i>OPA3, Appropriation NA0170</i> <i>Close Combat Tactical Trainer (CCTT)</i>	13.290	19.984	30.063		30.063	31.379	28.847	28.313	22.783	Continuing	Continuing
• RDTE, Appropriation 654760: <i>RDTE, Appropriation 654760 One Semi-Automated Forces (OneSAF)</i>	11.678	11.720	12.437		12.437	12.269	12.672	12.881	13.099	Continuing	Continuing
• RDTE, Appropriation 654715: <i>RDTE, Appropriation 654715 Live, Virtual, Constructive Integration Architecture (LVC-IA)</i>	7.888		8.451		8.451	11.007	11.570	10.120	4.304	Continuing	Continuing
• OMA, Appropriation, 121014000: <i>OMA, Appropriation 121014000, TBWG</i>	1.781	4.708	9.983		9.983	10.118	10.270	10.545	12.095	Continuing	Continuing

Remarks

D. Acquisition Strategy

SE Core awarded SAIC a CPFF contract in December 2011. This contract has a one year base with four option years. SE Core exercised the first option in December 2012. At this time, SE Core continues to evaluate the contractor's performance and fully expects to exercise the second option in December 2013.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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	Dec 2011	1.912	Dec 2012	1.854	Dec 2013	-		1.854	Continuing	Continuing	Continuing
Subtotal			18.717	1.884		1.912		1.854		0.000		1.854			

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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	0.000	11.604	Feb 2012	7.704	Jan 2012	19.006	Dec 2013	-		19.006	Continuing	Continuing	Continuing
Subtotal			113.910	11.604		7.704		19.006		0.000		19.006			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technology Development - Test Support	Various	Test Community:Various	0.125	-		-		-		-		-	0.000	0.125	0.125
Subtotal			0.125	0.000		0.000		0.000		0.000		0.000	0.000	0.125	0.125

Remarks
Not Applicable

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army							DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>				
	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	132.752	13.488	9.616	20.860	0.000	20.860				

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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

Net Ready (KPP #1)	
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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
Net Ready (KPP #1)	1	2013	1	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
585: <i>Aviation Combined Arms Tactical Trainer</i>	-	2.467	2.581	3.828	-	3.828	3.712	3.949	4.700	3.988	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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. 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 Unified Land Operations. A single suite of equipment consists of two mobile trailers housing six reconfigurable, networked simulators that support the AH-64D/E, UH-60A/L/M, CH-47D/F and OH-58D/F 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.

FY 2014 core funding of \$3.828 million will develop and test the replacement Sensor Video Recording System functionality in AVCATT to meet the After Action Review (AAR) Key Performance Parameter (KPP). It will also design new capabilities to enhance training when using the AVCATT and NCM3 in combined mode, including improved communications, hoist operations, slingload operations, and visual realism improvements.

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

	FY 2012	FY 2013	FY 2014
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Aviation Combined Arms Tactical (AVCATT) program.	2.467	2.581	3.828
Articles:	0	0	
Description: Continue EMD phase contract activities for the AVCATT program.			
FY 2012 Accomplishments: Conducted a technology refresh of AVCATT's Image Processor Display Generation (IPDG) systems, including design, development, and test of the new systems.			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012	FY 2013	FY 2014
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.			
<i>FY 2014 Plans:</i> Design, develop, and first article testing of the replacement Sensor Video Recording System functionality in AVCATT to meet the After Action Review (AAR) Key Performance Parameter (KPP) and reduce life cycle cost. Design new capabilities to enhance training when using the AVCATT and NCM3 in a combined mode, including improved communications, hoist operations, slingload operations, and visual realism improvements.			
Accomplishments/Planned Programs Subtotals	2.467	2.581	3.828

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA3: <i>OPA3, Appropriation</i>	9.413	11.977	34.913		34.913	33.768	35.667	30.900	29.278	Continuing	Continuing
<i>NA0173 Aviation Combined Arms Tactical Trainer</i>											

Remarks

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-3, RDT&E Project Cost Analysis: PB 2014 Army DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604780A: Combined Arms Tactical Trainer (CATT) Core	PROJECT 585: Aviation Combined Arms Tactical Trainer
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Office Support	Various	PEO STRI:Orlando, FL	1.500	-		-		-		-		-	0.000	1.500	1.500
Subtotal			1.500	0.000		0.000		0.000		0.000		0.000	0.000	1.500	1.500

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AVCATT	C/CPAF	L3 Communications Corp.:Arlington, TX	45.210	-		2.581	Mar 2013	-		-		-	Continuing	Continuing	Continuing
AVCATT	SS/FFP	Daedalus Technologies, Inc.:Orlando, FL	0.000	2.467	Dec 2011	-		-		-		-	0.000	2.467	2.547
AVCATT	C/CPIF	TBS:TBS	0.000	-		-		3.828	Feb 2014	-		3.828	0.000	3.828	0.000
Subtotal			45.210	2.467		2.581		3.828		0.000		3.828			

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		46.710	2.467	2.581	3.828	0.000		3.828	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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	
Non-Rated Crew Member Manned Module (NCM3, a subsystem of AVCATT)	

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Required Interoperability with battle command systems and virtual simulators	2	2013	4	2017
Non-Rated Crew Member Manned Module (NCM3, a subsystem of AVCATT)	1	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	-	0.000	214.270	193.748	-	193.748	205.000	204.570	204.120	204.104	Continuing	Continuing
DU8: <i>Systems Under Evaluation (SUE) Analysis</i>	-	0.000	45.489	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
DU9: <i>System Of Systems Engineering</i>	-	0.000	10.109	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
DV1: <i>BCT Equipping Integration And Experimentation</i>	-	0.000	158.672	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
DY3: <i>NIE Test & Evaluation</i>	-	0.000	0.000	29.697	-	29.697	33.947	33.768	33.795	33.773	Continuing	Continuing
DY4: <i>Network Integration Support</i>	-	0.000	0.000	25.863	-	25.863	20.830	20.788	20.777	20.773	Continuing	Continuing
DY5: <i>Production/Field Coordination for Capability Sets</i>	-	0.000	0.000	7.829	-	7.829	8.949	8.902	8.909	8.904	Continuing	Continuing
DY6: <i>Brigade and Platform Integration Support</i>	-	0.000	0.000	97.790	-	97.790	106.813	106.724	106.326	106.344	Continuing	Continuing
DY7: <i>Army Systems Engineering, Architecture & Analysis</i>	-	0.000	0.000	18.929	-	18.929	20.029	19.986	19.943	19.941	Continuing	Continuing
DZ6: <i>Army Integration Management & Coordination</i>	-	0.000	0.000	13.640	-	13.640	14.432	14.402	14.370	14.369	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

The increase supports the continuation of effort across all of the projects within PE Brigade Analysis, Integration and Evaluation

A. Mission Description and Budget Item Justification

The FY 2013 President's Budget submission was broken down into three projects to support the initial concept of execution of the Army's Agile process, they are:

Project DV1; BCT Equipment Integration and Experimentation, in FY 2013 it provided funds for development of the NIE architecture, Lab Based Risk Reduction, systems integration engineering for the NIE of both platforms and the Network, A-Kit development and vehicle integration, coordination of the NIE events, risk reduction

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	
<p>activities, NIE test activities and data collection and analysis, and troubleshooting/fixing integration and network problems in support of the Network Integration Evaluation events.</p> <p>Project DU8; Systems Under Evaluation Analysis and Integration, in FY 2013 it provided funding for the Industry and government programs that meet or exceed known technological gaps and funds prototypes (if required), FSR support, and platform and network integration into the Army's Network Integration Evaluation (NIE) Events.</p> <p>Project DU9; System of Systems Engineering, in FY 2013 in provided for the development of the Army's Baseline System of System Architecture and associated standards and guidelines, the supporting System of Systems Engineering to develop the standards and guidelines for the Army and the development and implementation of the Army's Common Operating Environment (COE) standards and validation and verification of systems against these standards.</p> <p>The FY 2014 funding supports all of the efforts to plan and execute NIE 14.2 and 15.1 and Tactical Capability Set Synchronized Fielding Events. 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 13.2 and 14.1. Current technologies are selected for integration into each tactical capability set based upon its operational maturity relative to the Army's needs and its cost and schedule.</p> <p>Project DY3; NIE Test & Evaluation, in FY 2014 and beyond, it provides for the planning and conduct of detailed experiments (NIE evaluations), tests and evaluation of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system. It includes all test support activities such as Blade time for Helicopters, Satellite time for the network, med evacuation, and protection for the soldier.</p> <p>Project DY4; Network Integration Support, in FY 2014 and beyond, it provides for Network Integration of all Network Systems Under Evaluation (SUE) (industry and government) Hardware/Software into existing Communications Electronics Research, Development and Engineering Center (CERDEC) System Integration Laboratories at Aberdeen Proving Ground (APG) to simulate the Brigade Network for NIE and determine if new capabilities successfully resolve know gaps. It includes the refinement of US Army Training and Doctrine Command (TRADOC) developed requirements and development of the sources sought, Request For Proposal (RFP) and Horseblanket in support of upcoming NIE Events. It also conducts evaluations in the labs of industry and government SUEs to ensure they meet requirements and are integrated into the network prior to going to the field base evaluation. Lab Based risk reduction is also funded by this line to improve Network performance prior and when in the field. It also includes any hardware and Field Service Representative (FSR) support required to support the lab based integration and risk reduction,</p> <p>Project DY5; Production/Fielding Coordination for Tactical Capability Sets, in FY 2014 and beyond, it provides for the development and coordination of Programs to produce, integrate, and field the NIE evaluated Brigade improvements to the Brigade Combat Teams (BCTs). This effort does not fund the production, or integration, or fielding of the tactical capability set, but it does fund the coordination of requirements and integration along with scheduling of all activities for the Army through the supporting Program Executive Offices (PEOs), Program Managers (PMs) and Research, Development and Engineering Command (RDECOMs).</p> <p>Project DY6; Brigade and Platform Integration Support, in FY 2014 and beyond, it provides for the integration of the lab developed network solution onto soldier and vehicle systems to ensure an integrated network across the Brigade and battle field and the facility support requirements to complete these efforts. This includes contractor, FSR and Government support to conduct vehicle integration along with integration of the network and vehicles into a Brigade Combat Team (BCT) for the</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>
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NIE test. This project funds the hardware and FSR support from contractors to support integration and evaluation. This includes the support for the four phases of integration and test evaluation conducted at the NIE. It also includes de-modification of vehicles after completion of the event.

Project DY7; Army System Engineering, Architecture & Analysis,

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	0.000	214.270	45.903	-	45.903
Current President's Budget	0.000	214.270	193.748	-	193.748
Total Adjustments	0.000	0.000	147.845	-	147.845
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	147.845	-	147.845

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DU8: <i>Systems Under Evaluation (SUE) Analysis</i>	-	0.000	45.489	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DU8) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY 2013 President Budget submission reflects Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the progressive changes to the development and execution of both Network Integration Events (NIE) and Tactical Capability Set-Synchronized Fielding (CS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production /Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project are divided among all of the new Projects as outlined above.

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 support efforts for the Network Integration Evaluation (NIE)s, which includes; Lab Based Risk Reduction for Network Integration, Platform Integration of Network Components, Software loading exercises and checkout (LOADEX), and comprehensive communication exercises (COMMEX), culminating in the Army's NIE. The specific evaluation requirements for these NIEs will be derived from the gaps identified by the user based on lessons learned from Iraq, and Afghanistan and previous NIEs.

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.

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

	FY 2012	FY 2013	FY 2014
Title: Systems Under Evaluation (SUE) Integrations	0.000	45.489	0.000
Articles:		0	
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.			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
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.				
Accomplishments/Planned Programs Subtotals				
		FY 2012	FY 2013	FY 2014
		0.000	45.489	0.000
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
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-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LBRR SUE HW & Integration Support	TBD	Various Note:1:TBD	0.000	-		5.881	Oct 2012	-		-		-	0.000	5.881	0.000
NIE SUE HW & Integration Support	TBD	Various Note: 1:TBD	0.000	-		39.608	Oct 2012	-		-		-	0.000	39.608	0.000
Subtotal			0.000	0.000		45.489		0.000		0.000		0.000	0.000	45.489	0.000

Remarks
 Note: 1
 - All funding executed form SoSI (Warren)
 - Program Activities performed at FT Bliss (TX), White Sands Missile Range (NM), Aberdeen Proving Ground (MD), TACOM (Warren MI)
 - Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	45.489	0.000	0.000	0.000	0.000	45.489	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>	

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 LoadEx / ValEx					■																							
NIE 13.2 CommEx (1 week)					■																							
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 LoadEx / ValEx					■																							
NIE 14.1 CommEx (1 week)					■																							
NIE 14.1 Event									■																			
NIE 14.1 Event Analysis & Summary									■																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 13.2 Planning - Execution	2	2012	3	2013
NIE 13.2 Industry Day	4	2012	4	2012
NIE 13.2 Decision Point 1	4	2012	4	2012
NIE 13.2 Decision Point 2	1	2013	1	2013
NIE 13.2 Lab Integration / Testing	1	2013	3	2013
NIE 13.2 LoadEx / ValEx	2	2013	3	2013
NIE 13.2 CommEx (1 week)	3	2013	3	2013
NIE 13.2 Event	3	2013	3	2013
NIE 13.2 Event Analysis & Summary	3	2013	3	2013
NIE 14.1 Planning - Execution	3	2012	1	2014
NIE 14.1 Industry Day	2	2013	2	2013
NIE 14.1 Decision Point 1	2	2013	2	2013
NIE 14.1 Decision Point 2	3	2013	3	2013
NIE 14.1 Lab Integration / Testing	3	2013	1	2014
NIE 14.1 LoadEx / ValEx	4	2013	4	2013
NIE 14.1 CommEx (1 week)	4	2013	4	2013
NIE 14.1 Event	1	2014	1	2014
NIE 14.1 Event Analysis & Summary	1	2014	1	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DU9: <i>System Of Systems Engineering</i>	-	0.000	10.109	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DU9) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY 2013 President Budget submission reflected Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with the FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the progressive changes to the development and execution of both Network Integration Events (NIE) and Tactical Capability Set-Synchronized Fielding (CS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production / Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project are divided among all of the new Projects as outlined above.

A. Mission Description and Budget Item Justification

This project provides the Army's leadership and materiel developers with the necessary system of systems analysis defining engineering and architectural products to manage and shape the Army's materiel portfolio; to ensure Systems Engineering discipline across the Materiel developer community throughout the acquisition life cycle and grow the System Engineering capability within the Army through education, engineering policy, guidelines and adoption of best industry practices. Create an environment that empowers the Acquisition Community through an unsurpassed agile, collaborative, productive, lean and trusted information enterprise.

This project establishes the capability to develop & deliver the architecture products that facilitate analysis & trades and provide timely relevant information to inform decision makers and guide the Army's efforts. This project provides for the development and implementation of a comprehensive set of system architectures & analysis results that can shape the Army's priorities and processes, and ensures that the analysis & architecture development capability across ASA (ALT) is cohesive within the Agile process. It provides for the overarching view of the Army's Reference System Architecture requirements and organizational responsibility, it provides for single authority within ASA (ALT) for Reference System Architecture oversight to manage governance and approvals of emerging designs, it also ensures the linkage of architecture products to events, processes, and customer requirements. It further establishes Reference Architectures for all Key components of the Network Architecture and all Army formations, across time, that form the basis for representing and communicating the Army's programmed plan to Program Executive Officers / Program Managers (PEOs/PMs). It also enables trades and analyses that use these architecture data to support informed systems acquisition decisions across the life cycle. The data is organized in order to support views and analysis across organizational, portfolio, and budgeting bins.

In early 2012 the U.S. Army ASA(ALT) formally unveiled its Common Operating Environment (COE) Implementation Plan designed to help industry partners and Army program managers by offering an approved set of network standards, processes and products, designed to enable them to quickly and efficiently develop and

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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field interoperable software capabilities. The plan helps establish and makes public Army Network technical standards, which any sized vendor can understand, internalize and build towards. This will help increase competition and help lower software and hardware integration burden and costs. The implementation plan is a living document that will remain flexible as the Army continues to evolve its network standards and fielding methods. The Army will continuously seek industry and service input as they transition to the COE. This project provides for technical support to oversee the execution of the COE Implementation plan, COE Orchestration, Verification and Validation (V&V), and Governance. 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. Provides for COE architecture validation, design baseline validation, and the verification of COE reference architecture compliance. Provides for the accreditation, certification and refinement of test plans and events.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Army Systems Engineering & (COE) Development/Validation to Provide Technical Support for the Execution of the Army System Engineering and Architecture in COE Implementation</p> <p align="right">Articles:</p> <p>Description: To provide technical support for the execution of the Army's Systems Engineer Architecture for COE.</p> <p>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, 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</p>	0.000	10.109 0	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
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	0.000	10.109	0.000

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

N/A

Remarks

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 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
FY13 Execution of COE Mission					██████████																							
FY13 Execution of COE Implementation Plan					██████████																							
FY13 Fielding of COE Version 1.0																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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
FY13 Execution of COE Mission	1	2013	4	2013
FY13 Execution of COE Implementation Plan	1	2013	3	2013
FY13 Fielding of COE Version 1.0	4	2013	4	2013

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DV1: <i>BCT Equipping Integration And Experimentation</i>	-	0.000	158.672	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DV1) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The Program Element 604798A is broken into three projects; Project DV1, includes all System of Systems Integration (SoSI) management effort and associated integrated support required to build the Brigade Network, integrate these capabilities on a brigade's tactical vehicles, and then evaluate the operational effectiveness of this brigade. Project DU8 provides funding for industry and government Systems Under Evaluation (SUEs) to bring new technologies to integrate into the brigade. Project DU9 funds the Army's development of the Division and Brigade architecture and standards to enable integration, commonality and compatibility. Project DV1's, R2a Exhibit "Accomplishments/Planned Program" has been restructured to better represent the activities required for network integration, platform integration, brigade integration, brigade evaluation, and eventual production and fielding.

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/evaluations efforts for the Network Integration Evaluation (NIE)s 13.2 and 14.1 events, which includes Lab Based Risk Reduction (LBRR), Network Integration , Software loading exercises and checkout (LOADEX), comprehensive communication exercises (COMMEX), 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 previous NIEs.

The Agile Process consists of the following phases which are coordinated and executed by the System of Systems Integration Directorate, Brigade Modernization Command (BMC and Army Test and Evaluation Command (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 Packages. 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 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, 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

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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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 network hardware and software are integrated and initially evaluated for follow-on consideration at a government integration and test facility at Aberdeen Proving Ground (APG). The results of this initial evaluation will determine which industry and DOD SUEs will continue in the NIE process. It also develops the initial Network configuration that will be used in the Phase V NIE. 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.

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, Brigade Combat Team (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 2014 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 were: (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. Out of the 96 Systems Under Evaluation (SUE) candidates that responded to the solicitation for NIE 13.1, the number of systems being evaluated is 5 Systems Under Test (SUTs) and 24 SUEs. 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-Size Weight and Power (SWaP) Tactical Cross Domain Solution, (4) Joint Participation Capability (US & Allies), (5) Aviation Extension, (6) Tactical Command Post, (7) Mission Command In-Garrison Training, (8) Improved Operational Energy, and (9) Integrate Capability Set configuration items into heavy platforms. The NIE 13.2 gaps are: (1) Commander's Applications for Mobile and Handheld Platforms, (2) Brigade S6 Staff Element Working Group, (3) Command Post Collaboration and Visualization, (4) Company Information Architecture, (5) Network Operations Visualized in the COP, (6) Aerial Layer Network - Air Ground Integration, (7) Cyber Electromagnetic (CEM) Staff Element, and (8) Integrated Employment of LandWarNet

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

	FY 2012	FY 2013	FY 2014
<p>Title: Test Experimentation</p> <p style="text-align: right;">Articles:</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</p>	0.000	58.885 0	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>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> <p>Title: Integration Efforts: System of Systems Integration Directorate (SoSI)</p> <p>Articles:</p> <p>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.</p> <p>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</p>		0.000	66.223 0	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>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 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.</p>				
<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 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</p>		0.000	15.604 0	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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, Article Quantities in Each)				
				FY 2012
				FY 2013
				FY 2014
<p>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 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>				
<p>Title: NIE Infrastructure</p> <p align="right">Articles:</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>				0.000
				17.960 0
				0.000
Accomplishments/Planned Programs Subtotals				0.000
				158.672
				0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy During the planning of NIE 13.2 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. For FY13 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 (utilizing current practices), or the government will use either an existing government contract or a Request for Proposal (RFP) as the means of solicitation for industry's participation in the NIE, the RFP and contracts this will include a participant's production option.		
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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network Design, Arch	TBD	Various Note:1:TBD	0.000	-		9.703	Oct 2012	-		-		-	0.000	9.703	0.000
Network Integration	TBD	Various Note: 1:TBD	0.000	-		19.224	Oct 2012	-		-		-	0.000	19.224	0.000
Platform/BDE Integration	TBD	Various Note: 1:TBD	0.000	-		61.207	Oct 2012	-		-		-	0.000	61.207	0.000
Prod Coord and SYNC Fielding	TBD	Various Note: 1:TBD	0.000	-		7.663	Oct 2012	-		-		-	0.000	7.663	0.000
SoSI SPM and Integration	TBD	Various Note:1:TBD	0.000	-		19.341	Oct 2012	-		-		-	0.000	19.341	0.000
Subtotal			0.000	0.000		117.138		0.000		0.000		0.000	0.000	117.138	0.000

Remarks
 Note:1
 - All funding executed from SoSI (Warren MI)
 - Program Activities performed at Ft Bliss (TX), White Sands Missile Range (NM), Aberdeen Proving Ground (MD), TACOM (Warren MI)
 - Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Infrastructure Support	Allot	Various Note: 1:TBD	0.000	-		6.904	Oct 2012	-		-		-	0.000	6.904	0.000
Subtotal			0.000	0.000		6.904		0.000		0.000		0.000	0.000	6.904	0.000

Remarks
 Note:1
 - All funding executed from SoSI (Warren MI)
 - Program Activities performed at Ft Bliss (TX), White Sands Missile Range (NM), Aberdeen Proving Ground (MD), TACOM (Warren MI)

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Event/Optempo	TBD	Various Note:1:TBD	0.000	-		34.630	Oct 2012	-		-		-	0.000	34.630	0.000
Subtotal			0.000	0.000		34.630		0.000		0.000		0.000	0.000	34.630	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
 Note:1
 - All funding executed from SoSI (Warren MI)
 - Program Activities performed at Ft Bliss (TX), White Sands Missile Range (NM), Aberdeen Proving Ground (MD)

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	158.672	0.000	0.000	0.000	0.000	158.672	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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>

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 LoadEx / ValEx					██████████																							
NIE 13.2 CommEx (1 week)					████																							
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 LoadEx / ValEx					████																							
NIE 14.1 CommEx (1 week)					████																							
NIE 14.1 Event									████																			
NIE 14.1 Event Analysis & Summary									████																			
CS13 Architecture Design	██████████																											
CS 13 Build & Integration	██████████																											
CS 13 New Equipment Training (Upto 7 BDEs)					██████████																							
CS 13 New Equipment Fielding (Upto 7 BDEs)					██████████																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System 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	4	2012	4	2012
NIE 13.2 Decision Point 1	4	2012	4	2012
NIE 13.2 Decision Point 2	1	2013	1	2013
NIE 13.2 Lab Integration / Testing	1	2013	3	2013
NIE 13.2 LoadEx / ValEx	2	2013	3	2013
NIE 13.2 CommEx (1 week)	3	2013	3	2013
NIE 13.2 Event	3	2013	3	2013
NIE 13.2 Event Analysis & Summary	3	2013	3	2013
NIE 14.1 Planning - Execution	3	2012	1	2014
NIE 14.1 Industry Day	2	2013	2	2013
NIE 14.1 Decision Point 1	2	2013	2	2013
NIE 14.1 Decision Point 2	3	2013	3	2013
NIE 14.1 Lab Integration / Testing	3	2013	1	2014
NIE 14.1 LoadEx / ValEx	4	2013	4	2013
NIE 14.1 CommEx (1 week)	4	2013	4	2013
NIE 14.1 Event	1	2014	1	2014
NIE 14.1 Event Analysis & Summary	1	2014	1	2014
CS13 Architecture Design	3	2012	4	2012
CS 13 Build & Integration	4	2012	4	2013
CS 13 New Equipment Training (Upto 7 BDEs)	1	2013	4	2014
CS 13 New Equipment Fielding (Upto 7 BDEs)	1	2013	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY3: <i>NIE Test & Evaluation</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DY3: <i>NIE Test & Evaluation</i>	-	0.000	0.000	29.697	-	29.697	33.947	33.768	33.795	33.773	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DY3) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY 2013 President Budget submission reflects Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the development and execution of both Network Integration Events (NIE) and Tactical Capability Set-Synchronized Fielding (TCS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production /Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project is divided among all of the new Projects as outlined above.

A. Mission Description and Budget Item Justification

This project supports test and evaluation portion of Phase V of the Army's Agile Network Integration process. The project will conduct the actual Network Integration Evaluation at White Sands Missile Range, NM which evaluates the integrated soldier and weapon systems operational impact on the brigade. The results of Phase V 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. The Army leadership will then determine which systems to procure and field in future Tactical Capability Sets to improve the Army's Network and Brigade Capability. This project includes government and contractor efforts to develop detailed test scenarios and evaluation criteria for field based evaluations of the Brigade Combat Team, and then conduct the evaluations and verifications of the Brigade as part of that NIE. As part of the test process, this project includes the development of the data collection plan, the instrumentation of the systems in the Brigade, and also the data collectors and analysis of the test results. This project also includes the development and distribution of the detailed, technical evaluation reports which provides the ability to identify which equipment; needs further development, is ready for NIE participation, or is ready for integration into a future Tactical Capability Set. Lastly, this project includes all the costs for supporting the test, such as, but not limited to; SATCOM satellite time, MEDEVAC support during test, Helicopter blade time, POL and other test support materials, equipment, personnel and facilities.

FY 2014 will continue the NIE gap and evaluation process for NIE 14.2 and NIE 15.1. For example, out of the 106 SUE candidates that responded to the solicitation for NIE 13.1, 7 SUTs and 25 SUEs were evaluated. These systems were evaluated against one of the Army's nine gaps identified for NIE 13.1 For NIE 13.2: against 11 gaps, 4 SUTs and 5 SUEs were selected for field evaluation and 4 SUEs were selected for Lab Base evaluation only. For NIE 14.1: 30 SUEs were submitted against the following 19 Gaps: (1) Brigade/Battalion Command Post (CP) Mobility and Scalability, (2) CDR Applications for Mobile/Handhelds (HH), (3) Network Visualization on the Common Operational Picture (COP), (4) Integrated LandWarNet, Installation Networks & Training Resources, (5) Aerial Layer Network Extension, (6) Air-Ground Network Architecture, (7) Enterprise Network Capabilities (e-mail), (8) Integrated Network Assurance - Network Access Control (NAC), (9) Integrated Network

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY3: <i>NIE Test & Evaluation</i>
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Assurance - Network Intrusion Prevention System, (10) Integrated Network Assurance - Information Assurance Vulnerability Mgmt, (11) Integrated Network Assurance - Security Information Management System, (12) Host Based Security System, (13) Integrated Trouble Ticketing, (14) Unified Communications Capability, (15) Evaluate instrumented Home Station Small Unit Training to include AARs, (16) Operational Energy - Commonality of Soldier Carried Energy Sources, (17) Operational Energy - Energy Sources with Extended Duration and Power, (18) Operational Energy - Monitor and Manage System Power, supply and Demand, and (19) Operational Energy - Reduce Reliance on Petroleum Based Energy.

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

	FY 2012	FY 2013	FY 2014
<p>Title: NIE ATEC Test and Evaluation Costs</p> <p>Description: ATEC's budget requirements to 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.</p> <p>FY 2014 Plans: 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), Electronic Command Center (ECC), Developmental Test Command-White Sands Missile Range, (DTC-WSMR). 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, and 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 Engineering (DREN), I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between Aberdeen Proving Grounds (APG), Electronic Proving Grounds (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>	0.000	0.000	22.011
<p>Title: Non ATEC Support Cost</p> <p>Description: Non ATEC support required for NIE Event.</p> <p>FY 2014 Plans: Procure and manage satellite time, POL, security support, facilities, MEDEVAC support, blade time for helicopters, and others services, equipment and maintenance of facilities to ensure a successful evaluation/test.</p>	0.000	0.000	7.686
Accomplishments/Planned Programs Subtotals	0.000	0.000	29.697

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY3: <i>NIE Test & Evaluation</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• DY4: <i>DY4 Network Integration Support</i>			25.863		25.863	20.830	20.788	20.777	20.773	Continuing	Continuing
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>			7.829		7.829	8.949	8.902	8.909	8.904	Continuing	Continuing
• DY6: <i>DY6 Brigade and Platform Integration Support</i>			97.790		97.790	106.813	106.724	106.326	106.344	Continuing	Continuing
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>			18.929		18.929	20.029	19.986	19.943	19.941	Continuing	Continuing
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>			13.640		13.640	14.432	14.402	14.370	14.369	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project includes Army Test Evaluation Center competitive contracts for test support services. Additional competitive contracts are awarded by Defense Information Systems Agency (DISA) for satellite support.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY3: <i>NIE Test & Evaluation</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Non ATEC Support Costs	TBD	Various Note:1:TBD	0.000	-		-		7.686	Nov 2013	-		7.686	0.000	7.686	0.000
Subtotal			0.000	0.000		0.000		7.686		0.000		7.686	0.000	7.686	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed, Aberdeen Proving Grounds (MD), FT Bliss (TX), White Sands Missile Range (NM).
 - Includes support services from DISA (for satellite time) and other governments agencies

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NIE ATEC Test and Evaluation Costs	TBD	Various Note:1:TBD	0.000	-		-		22.011	Nov 2013	-		22.011	0.000	22.011	0.000
Subtotal			0.000	0.000		0.000		22.011		0.000		22.011	0.000	22.011	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), Electronic Proving Grounds (AZ), FT Bliss (TX), White Sands Missile Range (NM).
 - Program Test support through ATEC

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	29.697	0.000	29.697	0.000	29.697	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY3: <i>NIE Test & Evaluation</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 14.2 Planning - Execution					■																							
NIE 14.2 Industry Day						■																						
NIE 14.2 DP 1							■																					
NIE 14.2 DP 2								■																				
NIE 14.2 Lab Integration/Testing								■	■																			
NIE 14.2 Candidate Solution Integration									■																			
NIE 14.2 LoadEx										■	■																	
NIE 14.2 CommEx											■	■																
NIE 14.2 Pilot											■	■																
NIE 14.2 Event											■	■																
NIE 14.2 Event Analysis & Summary											■	■																
NIE 15.1 Planning - Execution						■	■																					
NIE 15.1 Industry Day								■																				
NIE 15.1 DP 1									■																			
NIE 15.1 DP 2										■																		
NIE 15.1 Lab Integration/Testing										■	■																	
NIE 15.1 Candidate Solution Integration										■	■																	
NIE 15.1 LoadEx											■	■																
NIE 15.1 CommEx												■	■															

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY3: <i>NIE Test & Evaluation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 Planning - Execution	2	2013	2	2013
NIE 14.2 Industry Day	3	2013	3	2013
NIE 14.2 DP 1	4	2013	4	2013
NIE 14.2 DP 2	1	2014	1	2014
NIE 14.2 Lab Integration/Testing	1	2014	3	2014
NIE 14.2 Candidate Solution Integration	2	2014	2	2014
NIE 14.2 LoadEx	2	2014	3	2014
NIE 14.2 CommEx	3	2014	3	2014
NIE 14.2 Pilot	3	2014	3	2014
NIE 14.2 Event	3	2014	3	2014
NIE 14.2 Event Analysis & Summary	3	2014	3	2014
NIE 15.1 Planning - Execution	3	2013	1	2014
NIE 15.1 Industry Day	1	2014	1	2014
NIE 15.1 DP 1	2	2014	2	2014
NIE 15.1 DP 2	3	2014	3	2014
NIE 15.1 Lab Integration/Testing	3	2014	1	2015
NIE 15.1 Candidate Solution Integration	3	2014	4	2014
NIE 15.1 LoadEx	4	2014	4	2014
NIE 15.1 CommEx	4	2014	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>				PROJECT DY4: <i>Network Integration Support</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DY4: <i>Network Integration Support</i>	-	0.000	0.000	25.863	-	25.863	20.830	20.788	20.777	20.773	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DY4) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY 2013 President Budget submission reflects Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the development and execution of both Network Integration Events (NIE) and Tactical Capability Set-Synchronized Fielding (TCS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production /Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project is divided among all of the new Projects as outlined above.

A. Mission Description and Budget Item Justification

This project supports Phases I through IV of the Army's Agile process. Phase I solicits potential solutions from existing Army programs, tech base programs, and industry. It establishes initial objectives, solidifies the architecture baseline and will establish a viable candidate list for Network Integration Evaluation (NIE). During Phase II, the project supports the compilations of potential solutions that could meet the US Army Training and Doctrine Command (TRADOC) identified gaps and begins to develop the integration and testing concepts for the NIE. Phase III includes the coordinated efforts between System of Systems Integration (SOSI), Brigade Modernization Command (BMC) at Ft Bliss and the Army Test and Evaluation Command (ATEC) to finalize the brigade architecture "horseblanket", integration and test plans, training materials and combat mission evaluations. Phase III also includes the initial integration phase where industry and government System Under Evaluation (SUE) hardware and software are integrated and initially evaluated for follow-on consideration at Aberdeen Proving Ground's (APG) Communications Electronics Research, Development and Engineering Center (CERDEC) labs through the Lab Based Risk Reduction (LBRR) process. This effort continues into Phase IV as the network matures and becomes functional in the Lab. The results of this detailed lab based testing/evaluations will determine which industry and government SUEs will continue in the NIE (Phases IV/V of the Army's Agile Network Integration process) and develops the initial Network configuration that will be used in NIE. It also reduces risk to NIE execution by testing the Network in the lab, resolving issues found in the Network lab test and optimizing the Networks performance. This is done in a lab environment that facilitates very efficient, cost effective determination of problems, and their subsequent corrections. This project provides for Network Integration of all SUEs (industry and government) Hardware/Software into existing CERDEC System Integration Laboratories at APG to simulate the Brigade Network for NIE and it determines if new capabilities successfully resolve known gaps and meets network performance requirements.

For industry SUEs, this project will integrate the industry SUE into the Network at the CERDEC labs which helps industry to include small businesses, interface and integrate with Government programs of record with unique military secure interfaces and protocols. Purchase of any additional hardware and support above

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY4: <i>Network Integration Support</i>
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and beyond the contractors proposed support if required for Lab Based Risk Reduction is also funded within this project. For Government SUEs, this project funds integration support at the CERDEC Labs. If the NIE program requires additional prototypes above and beyond the Program of Record for the Lab based Risk Reduction, it will also purchase this equipment. This project also funds keeping the Network baseline up to date so that integration is always into the current baseline network.

FY 2014 will continue the NIE gap and evaluation process for NIE 14.2 and NIE 15.1. For example, out of the 106 SUE candidates that responded to the solicitation for NIE 13.1, 7 SUTs and 25 SUEs were evaluated. These systems were evaluated against one of the Army's nine gaps identified for NIE 13.1 For NIE 13.2: against 11 gaps, 4 SUTs and 5 SUEs were selected for field evaluation and 4 SUEs were selected for Lab Base evaluation only. For NIE 14.1: 30 SUEs were submitted against the following 19 Gaps: (1) Brigade/Battalion Command Post (CP) Mobility and Scalability, (2) CDR Applications for Mobile/Handhelds (HH), (3) Network Visualization on the Common Operational Picture (COP), (4) Integrated LandWarNet, Installation Networks & Training Resources, (5) Aerial Layer Network Extension, (6) Air-Ground Network Architecture, (7) Enterprise Network Capabilities (e-mail), (8) Integrated Network Assurance - Network Access Control (NAC), (9) Integrated Network Assurance - Network Intrusion Prevention System, (10) Integrated Network Assurance - Information Assurance Vulnerability Mgmt, (11) Integrated Network Assurance - Security Information Management System, (12) Host Based Security System, (13) Integrated Trouble Ticketing, (14) Unified Communications Capability, (15) Evaluate instrumented Home Station Small Unit Training to include After Action Reports (AARs), (16) Operational Energy - Commonality of Soldier Carried Energy Sources, (17) Operational Energy - Energy Sources with Extended Duration and Power, (18) Operational Energy - Monitor and Manage System Power, supply and Demand, and (19) Operational Energy - Reduce Reliance on Petroleum Based Energy.

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

	FY 2012	FY 2013	FY 2014
<p>Title: NIE Network Integration and Lab Based Risk Reduction</p> <p>Description: These funds provide for the following: Network Integration of all industry and government SUEs, SUTs, and baseline Hardware/Software into existing CERDEC System Integration Laboratories at Aberdeen Proving Grounds (APG) to simulate the Brigade Network for NIE and determine if SUE's capabilities successfully resolve known gaps.</p> <p>FY 2014 Plans: The funding provides for the Lab Based Network Analysis and evaluations for NIE 14.2 and NIE 15.1 Brigade Network. In the CERDEC labs, engineers create a representative NIE network architecture incorporating radios, satellite-based systems, handheld devices, mission command applications, routers, software, cables and other network components. Through a combination of actual and simulated hardware and software they recreate the end-to-end NIE network, allowing industry and government organizations the ability to "plug" their systems into the NIE architecture for early assessment and integration risk mitigation. This effort plans and conducts detailed Network experiments, and evaluations of potential Software and Hardware systems for integration into the Army's network to resolve known Network Gaps. The lab activity validates the NIE network architecture products and network configurations using a Brigade-scale network consisting of a mixture of live and virtualized hardware and software. Products include plans/execution/reports of the following: system level specification verification, instrumentation verification, pattern of analysis, pre-event analysis, Network Integration Requirements Levels, Measures of Performance, communication load plan, automated performance assessment of technical and operational measures, transport</p>	0.000	0.000	13.636

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>		PROJECT DY4: <i>Network Integration Support</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
and software basis of issue, instrumentation plan, field troubleshooting and reach back support during event execution, routing design for NIE, and technical input to the reports to industry of system performance and issues.				
<p>Title: NIE and LBRR Requirements Definition Support</p> <p>Description: These funds provide for all government and contract personnel and equipment which work with TRADOC and Army G-3/5/7 to finalize the architecture, requirements, and horseblanket for each NIE.</p> <p>FY 2014 Plans: This effort includes working with TRADOC and G-3/5/7 directorates to finalize the operational gaps and then to develop either sources sought or Requests For Proposals (RFP)s to competitively select industry and government SUEs to resolve these gaps. This also includes the development of Scope of works, evaluation and down-selection criteria and then evaluation of any and all sources sought and RFP proposals to include black box testing to verify that the hardware/software performs to the requirement. This effort includes management of the down-selections for each event, delivery of the final horseblanket architecture and design for each NIE. It also includes all program, information, security, business, schedule, personal management, network integration, evaluation, and reporting efforts required to support phases 1-3 of the NIE process.</p>		0.000	0.000	4.451
<p>Title: NIE SUE Hardware/Software for Lab & FSR Support for Network Integration</p> <p>Description: The effort includes procurement of Hardware and Software required by the Lab to fully simulate the Brigade Network it includes the FSR Support from Contractors to fully integrate their systems into the Network.</p> <p>FY 2014 Plans: Provides funding to support Network integration and evaluation at the CERDEC Lab at APG. This supports semi-annual Network Integration of industry and government technologies which are being selected as Systems Under Evaluation (SUE) for participation into the Army's Network Integration Evaluations (NIE) 14.2 & 15.1. These funds cover the selected SUE's participation in the lab integration event. This includes contractor's costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) required to support Network integration activities, and the purchase of additional prototypes required for the CERDEC Lab when needed to effectively complete detailed evaluations of the complete brigade network architecture.</p>		0.000	0.000	6.574
<p>Title: Facilities and IT Support</p> <p>Description: Provides funding for infrastructure/facilities and IT support.</p> <p>FY 2014 Plans:</p>		0.000	0.000	1.202

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY4: <i>Network Integration Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
Provides funding for infrastructure/facilities. In addition it includes the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	25.863

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014	FY 2014	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
			Base	OCO	Total						
• DY3: <i>DY3 NIE Test & Evaluation</i>			29.697		29.697	33.947	33.768	33.795	33.773	Continuing	Continuing
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>			7.829		7.829	8.949	8.902	8.909	8.904	Continuing	Continuing
• DY6: <i>DY6 Brigade and Platform Integration Support</i>			97.790		97.790	106.813	106.724	106.326	106.344	Continuing	Continuing
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>			18.929		18.929	20.029	19.986	19.943	19.941	Continuing	Continuing
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>			13.640		13.640	14.432	14.402	14.370	14.369	Continuing	Continuing

Remarks

D. Acquisition Strategy

During the planning of NIE 13.2 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. Industry's initial white paper submissions for participation at NIE generally result in no Cost to the government. But there are exceptions, which yield cost such as ensuring small business can participate and if the government needs additional FSR support or hardware to fully represent the Brigade requirements. 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 (utilizing current practices), or the government will use either an existing government contract or a Request for Proposal (RFP) as the means of solicitation for industry's participation in the NIE, the RFP and contracts this will include a participant's production option. The Sources Sought process will be used to help clarify gaps definition and solution sets, where as RFPs will be used when the government's technical community can define the commodity desired to fill a gap with clear and concise selection criteria. The Army is developing a DA PAM to document this process.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY4: <i>Network Integration Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NIE Network Integration and Lab Based Risk Reduction	TBD	Various Note: 1:TBD	0.000	-		-		13.636	Nov 2013	-		13.636	0.000	13.636	0.000
Subtotal			0.000	0.000		0.000		13.636		0.000		13.636	0.000	13.636	0.000

Remarks
 Note:1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA), FT Bliss (TX), .
 - Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NIE and LBRR Requirements Definition Support	TBD	Various Note: 1:TBD	0.000	-		-		4.451	Nov 2013	-		4.451	0.000	4.451	0.000
NIE SUE Hardware/ Software for Lab & FSR Support for Network Integration	TBD	Various Note: 1:TBD	0.000	-		-		6.574	Nov 2013	-		6.574	0.000	6.574	0.000
Facilities and IT Support	TBD	Various Note: 1:TBD	0.000	-		-		1.202	Nov 2013	-		1.202	0.000	1.202	0.000
Subtotal			0.000	0.000		0.000		12.227		0.000		12.227	0.000	12.227	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA)

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	25.863	0.000	25.863	0.000	25.863	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY4: <i>Network Integration Support</i>
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	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>
PROJECT DY4: <i>Network Integration Support</i>	

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 14.2 Planning - Execution																												
NIE 14.2 Industry Day																												
NIE 14.2 DP 1																												
NIE 14.2 DP 2																												
NIE 14.2 Lab Integration/Testing																												
NIE 14.2 Candidate Solution Integration																												
NIE 14.2 LoadEx																												
NIE 14.2 CommEx																												
NIE 14.2 Pilot																												
NIE 14.2 Event																												
NIE 14.2 Event Analysis & Summary																												
NIE 15.1 Planning - Execution																												
NIE 15.1 Industry Day																												
NIE 15.1 DP 1																												
NIE 15.1 DP 2																												
NIE 15.1 Lab Integration/Testing																												
NIE 15.1 Candidate Solution Integration																												
NIE 15.1 LoadEx																												
NIE 15.1 CommEx																												
NIE 15.1 Pilot																												
NIE 15.1 Event																												
NIE 15.1 Event Analysis & Summary																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY4: <i>Network Integration Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 Planning - Execution	2	2013	3	2014
NIE 14.2 Industry Day	3	2013	3	2013
NIE 14.2 DP 1	4	2013	4	2013
NIE 14.2 DP 2	1	2014	1	2014
NIE 14.2 Lab Integration/Testing	1	2014	3	2014
NIE 14.2 Candidate Solution Integration	2	2014	2	2014
NIE 14.2 LoadEx	2	2014	3	2014
NIE 14.2 CommEx	3	2014	3	2014
NIE 14.2 Pilot	3	2014	3	2014
NIE 14.2 Event	3	2014	3	2014
NIE 14.2 Event Analysis & Summary	3	2014	3	2014
NIE 15.1 Planning - Execution	3	2013	1	2015
NIE 15.1 Industry Day	1	2014	1	2014
NIE 15.1 DP 1	2	2014	2	2014
NIE 15.1 DP 2	3	2014	3	2014
NIE 15.1 Lab Integration/Testing	3	2014	1	2015
NIE 15.1 Candidate Solution Integration	3	2014	4	2014
NIE 15.1 LoadEx	4	2014	4	2014
NIE 15.1 CommEx	4	2014	1	2015
NIE 15.1 Pilot	1	2015	1	2015
NIE 15.1 Event	1	2015	1	2015
NIE 15.1 Event Analysis & Summary	1	2015	1	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>				PROJECT DY5: <i>Production/Field Coordination for Capability Sets</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DY5: <i>Production/Field Coordination for Capability Sets</i>	-	0.000	0.000	7.829	-	7.829	8.949	8.902	8.909	8.904	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DY5) was created to support the Army's development, coordination and execution of the plan to take the results of previous Network Integration Events (NIE) and produce, integrate, and field these Brigade improvements to selected Brigade Combat Teams. The FY 2013 President Budget submission reflects Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the progressive changes to the development and execution of both Network Integration Events (NIE) and Tactical Capability Tactical Capability Set-Synchronized Fielding (TCS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production / Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project is divided among all of the new Projects as outlined above.

A. Mission Description and Budget Item Justification

This project provides for the development of a coordinated plan for the Production (Integrating components onto vehicle systems) and Fielding (logistics and training) of those Brigade components (both hardware/software in A and/or B Kits) and Division/Corps components (used primarily on the Command Post computing environment) that successfully passed the Network Integration Evaluation (NIE) and have been certified as interoperable for fielding through Army Interoperability Certification events and were approved by the Army's Leadership to be incorporated in subsequent Tactical Capability Sets (TCS). This project request funds for the coordination of the required activity plan with the applicable Program of Records (PEOs/PMs). This project does not fund the actual production, integration, nor fielding costs associated with the Tactical Capability Set. 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 the following efforts: Provides oversight and direct coordination between participating PEOs, PMs, RDECOMs and the Army's Brigade Combat Teams (BCT) receiving the Tactical Capability Set package, throughout all phases of the Vehicle Integration and Synchronized Fielding process. This begins with strategic design development and coordination and configuration management of the integrated network components onto weapon systems. This includes the Tactical Capability Set's Network Architecture Design and the final Tactical Capability Set Configuration, the design, development and production of each product's "Integration Kit" (IK), the design, development and production of each platform's A-Kit, the synchronized integration of all products onto the Brigade Combat Team's war fighting platforms. This project also includes the direct support during each of the unit's "New Equipment Training" and "New Equipment Fielding", along with the preparation for the BTC's rotation through one of the Army's Combat Training Centers, (Joint Readiness Training Center (JRTC) or National Training Center (NTC). Upon completion of the Combat Training Center (CTC) rotation the support teams provide oversight to ensure that all training assets are reset and moved to the

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY5: <i>Production/Field Coordination for Capability Sets</i>
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follow-on BCT and that all After Action activities are closed out. This project also includes coordination with DA staff for synchronization of NIE with Integration and Interoperability events leading to Army Interoperability Certification and coordinating mission command Army Interoperability Certification (AIC) baseline to support fielding.

The FY 2014 funding is supporting the TCS fielding in CY 2014 and also conducting the planning for TCS 15 through the POM. During FY 2014 the Army's plan is to conduct four (4) Capability Set-Sync Fielding events utilizing two TCS-SF teams.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Production/Fielding Coordination for Capability Sets</p> <p>Description: These funds provide for the following: Development, coordination and execution of the plan to take the results of previous NIEs and produce, integrate, and field these Brigade improvements to the BCTs. This effort does not fund the production, or integration, or fielding of the tactical capability set, but it does fund the coordination of this activity for the Army through the supporting Program Managers (PMs), Program Executive Officers (PEOs), and Research, Development, Engineering Command (RDECOMs).</p> <p>FY 2014 Plans: Synchronize, integrate and coordinate Tactical Capability Set Fielding for TCS-14 thru TCS-19 to receiving Brigade Combat Teams (BCTs). Synchronize integration of a single integrated architecture consisting of multiple systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at several different locations, integrated into multiple gaining Army Units. Coordinate a synchronized Integrated Master Schedule (IMS) for fielding of TCS-14 to all gaining units. Integrate design by platforms, by role, by echelon, and by BCT. Begin TCS-15 requirements definition finalization and development of the integrated master schedule. This includes coordinating A-Kit design, development and production and the B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs. It also includes Prototype and Productions build coordination and delivery. Configuration Management (CM) of Platform Architectural implementations, Design, A-Kit, B-Kit and the IMS. Systems Engineering (SE) to include: design maturation, decomposition of network architecture into platform specific implementations network architecture, prototype/production build, integrated testing, configuration of integrated baseline and an integrated schedule for component management. Synchronize acquisition strategy and planning to include: synchronized production deliveries, fielding and support (with sponsoring PMs) to maintain the ARFORGEN Cycle. Coordinate funding requirements and delivery/production schedules to ensure production schedules are met to field selected systems. Complete funding coordination with DA and prioritized requirements at Weapons Systems Reviews (WSR) to support the POM. Align funding requirements for PMs to make updates to their PORs as a result of integrating concepts that affect engineering architecture data products, training packages, logistics packages, etc. Coordinate New Equipment Training (NET) and New Equipment Fielding (NEF) for all TCS-14 components/products across all receiving Units.</p>	0.000	0.000	7.300
<p>Title: Facilities and IT Support</p>	0.000	0.000	0.529

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY5: <i>Production/Field Coordination for Capability Sets</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
Description: Provides funding for infrastructure/facilities and IT support.			
FY 2014 Plans: Provides funding for infrastructure/facilities. In addition it includes the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	7.829

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• DY3: <i>DY3 NIE Test & Evaluation</i>			29.697		29.697	33.947	33.768	33.795	33.773	Continuing	Continuing
• DY4: <i>DY4 Network Integration Support</i>			25.863		25.863	20.830	20.788	20.777	20.773	Continuing	Continuing
• DY6: <i>DY6 Brigade and Platform Integration Support</i>			97.790		97.790	106.813	106.724	106.326	106.344	Continuing	Continuing
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>			18.929		18.929	20.029	19.986	19.943	19.941	Continuing	Continuing
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>			13.640		13.640	14.432	14.402	14.370	14.369	Continuing	Continuing

Remarks

D. Acquisition Strategy
This project does not have any requirement for direct procurement of hardware or 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY5: <i>Production/Field Coordination for Capability Sets</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Production/Fielding Coordination for Capability Sets	TBD	Various Note: 1:TBD	0.000	-		-		7.300	Nov 2013	-		7.300	0.000	7.300	0.000
Subtotal			0.000	0.000		0.000		7.300		0.000		7.300	0.000	7.300	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at, TACOM (Warren MI).
 - Program Integration support through various PMs, PEOs, RDECOM.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Facilities and IT Support	TBD	Various Note:1:TBD	0.000	-		-		0.529	Nov 2013	-		0.529	0.000	0.529	0.000
Subtotal			0.000	0.000		0.000		0.529		0.000		0.529	0.000	0.529	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at, TACOM (Warren MI).

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	7.829	0.000	7.829	0.000	7.829	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army			DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>			PROJECT DY5: <i>Production/Field Coordination for Capability Sets</i>		

	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
TCS13 Tactical Capability Set	████████████████																											
TCS13 Architecture Design	████████																											
TCS13 Build & Integration				██																								
TCS13 NEW Equipment Training (NET)					████████████████																							
TCS13 NEW Equipment Fielding (NEF)					████████████████																							
TCS14 Tactical Capability Set									████████████████																			
TCS14 Architecture Design				████████																								
TCS14 Build & Integration									████████																			
TCS14 NEW Equipment Training (NET)									████████████████																			
TCS14 NEW Equipment Fielding (NEF)									████████████████																			
TCS15 Tactical Capability Set									████████████████████																			
TCS15 Architecture Design									██████████																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY5: <i>Production/Field Coordination for Capability Sets</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TCS13 Tactical Capability Set	2	2012	2	2014
TCS13 Architecture Design	2	2012	4	2012
TCS13 Build & Integration	4	2012	4	2012
TCS13 NEW Equipment Training (NET)	1	2013	1	2014
TCS13 NEW Equipment Fielding (NEF)	2	2013	2	2014
TCS14 Tactical Capability Set	3	2013	2	2015
TCS14 Architecture Design	4	2012	3	2013
TCS14 Build & Integration	3	2013	1	2014
TCS14 NEW Equipment Training (NET)	1	2014	1	2015
TCS14 NEW Equipment Fielding (NEF)	1	2014	2	2015
TCS15 Tactical Capability Set	1	2014	4	2015
TCS15 Architecture Design	1	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY6: <i>Brigade and Platform Integration Support</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DY6: <i>Brigade and Platform Integration Support</i>	-	0.000	0.000	97.790	-	97.790	106.813	106.724	106.326	106.344	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DY6) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY 2013 President Budget submission reflects Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the progressive changes to the development and execution of both Network Integration Events (NIE) and Tactical Capability Set-Synchronized Fielding (TCS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production /Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project is divided among all of the new Projects as outlined above.

A. Mission Description and Budget Item Justification

This project supports Phase IV through Phase VI of the Army's Agile Network Integration process. Based on developed baseline Brigade level architectures, System of Systems Integration (SOSI) will develop detailed plans and final architectures and horseblankets (to include Basis of Issue Plans (BOIPs)) to execute the integration of all hardware and software onto Soldier and vehicle systems to ensure an integrated network across the Brigade battlespace. This project includes government and contractor efforts to integrate (build A-Kits for vehicles) and validate that the Army is fielding platforms, components and software that are integrated together in order to provide increased capabilities for the Soldier that are trainable and maintainable. This project includes efforts associated with the integration of lab developed network solution on to Soldier and vehicle systems; the testing, verification and correction of the network components in preparation for hardware installation supporting the Network Integration Evaluation (NIE); the funding for selected Systems Under Evaluation (SUEs) (Hardware and Field Service Representative (FSR) support) to participate in NIE during Phase V of the Army's Agile process; the coordination and execution of LoadEX, COMMX, Pilot and the NIE evaluation, the de-modification of vehicles after completion of the event; and for the infrastructural support of these efforts at Ft Bliss TX and White Sands Missile Range, NM.

FY 2014 will continue the NIE gap and evaluation process for NIE 14.2 and NIE 15.1. For example, out of the 106 SUE candidates that responded to the solicitation for NIE 13.1, 7 Systems Under Test (SUTs) and 25 SUEs were evaluated. These systems were evaluated against one of the Army's nine gaps identified for NIE 13.1 For NIE 13.2: against 11 gaps, 4 SUTs and 5 SUEs were selected for field evaluation and 4 SUEs were selected for Lab Base evaluation only. For NIE 14.1: 30 SUEs were submitted against the following 19 Gaps: (1) Brigade/Battalion Command Post (CP) Mobility and Scalability, (2) CDR Applications for Mobile/Handhelds (HH), (3) Network Visualization on the Common Operational Picture (COP), (4) Integrated LandWarNet, Installation Networks & Training Resources, (5) Aerial Layer Network Extension, (6) Air-Ground Network Architecture, (7) Enterprise Network Capabilities (e-mail), (8) Integrated Network Assurance - Network Access Control (NAC), (9) Integrated Network Assurance - Network Intrusion Prevention System, (10) Integrated Network Assurance - Information Assurance Vulnerability Mgmt, (11) Integrated

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY6: <i>Brigade and Platform Integration Support</i>
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Network Assurance - Security Information Management System, (12) Host Based Security System, (13) Integrated Trouble Ticketing, (14) Unified Communications Capability, (15) Evaluate instrumented Home Station Small Unit Training to include After Action Reports (AARs), (16) Operational Energy - Commonality of Soldier Carried Energy Sources, (17) Operational Energy - Energy Sources with Extended Duration and Power, (18) Operational Energy - Monitor and Manage System Power, supply and Demand, and (19) Operational Energy - Reduce Reliance on Petroleum Based Energy.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Platform Integration Support</p> <p>Description: These funds provide for the integration of lab developed network solution onto soldier and vehicle systems to ensure an integrated network across the brigade and battle field.</p> <p>FY 2014 Plans: Vehicle integration: Based on Brigade level architectures, develop the Bases of Issue Plan (BOIP) for each platform and develop the integrated vehicle designs and installation plans for all platform systems to install network components and the associated instrumentation to collect data from the test phase. This design needs to ensure that all technical platform requirements are not degraded and that both the Network and the Vehicle systems meet all of their system requirements. The design must address all size, weight, power, electromagnetic, safety, interference and all other associated technical requirements. The platforms then must pass all safety certification requirements prior to being used in the experiment. This funding includes the design, fabrication, and installation (and after the test the de-installation) of the brackets, mounts, cables, etc. that is required as part of the installation A-Kit. It also includes the installation cost for installing B-Kits (Radios, antennas, filters, etc.). It also includes the safety certification testing for each vehicle configuration.</p>	0.000	0.000	21.417
<p>Title: Brigade Integration Support</p> <p>Description: These funds provide for the testing and verification and correction of the network components and platforms and soldiers into a Brigade Combat Team in preparation for the Network Integration Evaluation (NIE).</p> <p>FY 2014 Plans: Brigade Integration: Once the vehicles have all A and B Kits installed, the next step is to conduct the network validation exercise consisting of a four phase approach: load, established, integrate and thread validation. Load is the initial stage where the Network software, firmware, Operating System (OS), Internal Protocol (IP) and configuration are installed and validated on the platform. Once this is completed the test/fix/test process begins to verify that the hardware is fully assembled and ensure that the brigade level Network is fully operational. This requires government and industry level Subject Matter Experts (SME) to work efforts such as key loading, network data initialization, radio calibration, Joint Battle Command-Platform (JBC-P) legacy system integration and testing, tactical network integration and testing, mission command integration and testing, company command post integration and testing. These efforts when combined usually result in software updates and system corrections to improve performance, connectivity and availability of the Network. This effort also includes training of the soldiers who will be using this new brigade network as part of the Network Integration Evaluation Event. This effort manages and conducts all daily operations</p>	0.000	0.000	19.889

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>		PROJECT DY6: <i>Brigade and Platform Integration Support</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
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. It includes the day to day project management of the NIE and coordination between the SOSI organization, Army Test and Evaluation Command (ATEC) and Brigade Modernization Command (BMC) to ensure all organizations are coordinated to ensure the NIE event runs successfully an on schedule. It also includes conducting After Action Review (AAR) to provide Army leadership recommendation for improving operational requirements and enhancing technical specifications.				
Title: Network Integration Support Description: These funds provide for the field setup, validation, verification and correction of the network for the NIE. FY 2014 Plans: Network Integration funds for data product builds for all transport layer communication devises. It includes the development of the Lightweight Data Interchange Format (LDIF) file for the network. It includes all NETOPS synchronization and coordination. Funds for the Network Sync Center verifying the network works throughout the whole brigade. Funds for Government Subject Matter Experts (SME) to assist in communication hardware integration in to the brigade. Includes the development of company command post configuration, training, management. It includes both government SME and contractor FSR support to ensure the network is operational during LOADEX, COMEX, VALEX (Pilot), and the NIE evaluation.		0.000	0.000	19.500
Title: NIE Infrastructure Description: Provides for Infrastructure (facilities) at FT Bliss TX and WSMR. FY 2014 Plans: Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities), at Fort Bliss TX, (FBTX), White Sands Missile Range NM (WSMR). Includes lease and support maintenance of Government Service Administration (GSA) vehicles that support the NIE mission at FBTX/WSMR.		0.000	0.000	5.562
Title: Network Integration Evaluation SUE support(NIE) Description: These funds provide for the following effort: To fund selected SUEs to participate in NIE during Phase V of the Army's Agile process. FY 2014 Plans: Provides funding to support integration and evaluation, to support semi-annual events of industry and government technologies which are being selected as Systems Under Evaluation (SUE) for participation into the Army's Network Integration Evaluations (NIE) 14.2 & 15.1. These funds cover the NIE participant's (Emerging and existing technologies, and contractors) costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) integration A-kit development, and the purchase		0.000	0.000	27.471

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY6: <i>Brigade and Platform Integration Support</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
of additional prototypes when needed to effectively complete detailed evaluations of the complete network architecture. Includes costs for development of integration hardware and software (A-KIT design support). In preparation for the NIE, the selected units participate in a comprehensive four phased Validation Exercise (LOADEX, Established, integration and thread validation (4 weeks) at FT Bliss Texas (FBTX). The participating units then deploy to the tactical training/evaluation area, White Sands Missile Range (WSMR) to complete the detailed NIE event (4 weeks).			
Title: Platform/BDE Integration Management Support	0.000	0.000	3.951
Description: These funds provide for all government and contract personnel who provide direct support to the Platform and Brigade Integration efforts at Ft Bliss and WSMR in support of the NIE.			
FY 2014 Plans: This effort includes all program, information, security, business, and personal management efforts required to support the Network Integration teams. It includes the following types of activities: Program management, schedule development and management, contracting, financial management, cost analysis, personnel management, operations, security management, NIE event management, Information Assurance, information management, database and IT support, facilities and infrastructure management, knowledge management. In addition to people it include cost for all IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	97.790

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• DY3: <i>DY3 NIE Test & Evaluation</i>			29.697		29.697	33.947	33.768	33.795	33.773	Continuing	Continuing
• DY4: <i>DY4 Network Integration Support</i>			25.863		25.863	20.830	20.788	20.777	20.773	Continuing	Continuing
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>			7.829		7.829	8.949	8.902	8.909	8.904	Continuing	Continuing
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>			18.929		18.929	20.029	19.986	19.943	19.941	Continuing	Continuing
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>			13.640		13.640	14.432	14.402	14.370	14.369	Continuing	Continuing

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	DY6: <i>Brigade and Platform Integration Support</i>

D. Acquisition Strategy

During the planning of NIE 13.2 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. Industry's initial white paper submissions for participation at NIE generally result in no Cost to the government. But there are exceptions, which yield cost such as ensuring small business can participate and if the government needs additional FSR support or hardware to fully represent the Brigade requirements. 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 (utilizing current practices), or the government will use either an existing government contract or a Request for Proposal (RFP) as the means of solicitation for industry's participation in the NIE, the RFP and contracts this will include a participant's production option. The Sources Sought process will be used to help clarify gaps definition and solution sets, where as RFPs will be used when the government's technical community can define the commodity desired to fill a gap with clear and concise selection criteria. The Army is developing a DA PAM to document this process.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY6: <i>Brigade and Platform Integration Support</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Platform Integration Support	TBD	Various Note: 1:TBD	0.000	-		-		21.417	Nov 2013	-		21.417	0.000	21.417	0.000
Brigade Integration Support	TBD	Various Note: 1:TBD	0.000	-		-		19.889	Nov 2013	-		19.889	0.000	19.889	0.000
Network Integration Support	TBD	Various Note: 1:TBD	0.000	-		-		19.500	Nov 2013	-		19.500	0.000	19.500	0.000
Network Integration Evaluation SUE support (NIE)	TBD	Various Note: 1:TBD	0.000	-		-		27.471	Nov 2013	-		27.471	0.000	27.471	0.000
Platform/BDE Integration Management Support	TBD	Various Note: 1:TBD	0.000	-		-		3.951	Nov 2013	-		3.951	0.000	3.951	0.000
Subtotal			0.000	0.000		0.000		92.228		0.000		92.228	0.000	92.228	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at TACOM (Warren MI), FT Bliss (TX), White Sands Missile Range (NM).
 - Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Infrastructure Support	TBD	Various Note: 1:TBD	0.000	-		-		5.562	Nov 2013	-		5.562	0.000	5.562	0.000
Subtotal			0.000	0.000		0.000		5.562		0.000		5.562	0.000	5.562	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at FT Bliss (TX), White Sands Missile Range (NM).
 - Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Army								DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>				PROJECT DY6: <i>Brigade and Platform Integration Support</i>			
	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	0.000	0.000	0.000	97.790	0.000	97.790	0.000	97.790	0.000		

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY6: <i>Brigade and Platform Integration Support</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 14.2 Planning - Execution	[REDACTED]
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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY6: <i>Brigade and Platform Integration Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 Planning - Execution	2	2013	3	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY7: <i>Army Systems Engineering, Architecture & Analysis</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DY7: <i>Army Systems Engineering, Architecture & Analysis</i>	-	0.000	0.000	18.929	-	18.929	20.029	19.986	19.943	19.941	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DY7) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY 2013 President Budget submission reflects Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the progressive changes to the development and execution of both Network Integration Events (NIE) and Tactical Capability Set-Synchronized Fielding (TCS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production /Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project is divided among all of the new Projects as outlined above.

A. Mission Description and Budget Item Justification

This project provides the Army's leadership and materiel developers with the necessary system of systems engineering (SOSE) analysis and architectural products to manage and shape the Army's materiel portfolio (5 and 30 year plans); to shape future tactical capability sets and corresponding NIEs; to ensure Systems Engineering discipline across the Materiel developer community throughout the acquisition life, engineering policy and system standards, guidelines. It creates an environment that empowers the Acquisition Community through an unsurpassed agile, collaborative, productive, lean and trusted information enterprise. This project includes support to other DOD and international agencies for joint programs and collaboration efforts with NIE and Tactical Capability Package portfolio integration. The Government effort includes costs for salaries, travel, overtime, training, supplies, facilities, and IT support.

This project establishes the capability to develop and deliver the system of system engineering, analysis and architecture products that facilitate analysis & trades and provide timely relevant information to inform decision makers and guide the Army's efforts. This project provides for the development and implementation of a comprehensive set of system architectures and analysis results that can shape the Army's priorities and processes, and ensures that the analysis and architecture development capability across Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA (ALT)) is cohesive within the agile process. It provides for the overarching view of the Army's System of Systems (SOS) Reference Architecture requirements; it provides for single authority within ASA(ALT) for System of Systems Implementation Architecture oversight to manage governance and approvals of emerging designs, it also ensures the linkage of architecture products to events (NIE, TCS, and Program Objective Memorandum (POM)), processes, and customer requirements. It establishes SOS Reference Architectures for all Key components of the Network Architecture and all Army formations, across time, that form the basis for representing and communicating the Army's programmed plan to Program Executive Officers/Program Managers (PEOs/PMs). It enables trades and analyses that use the reference architecture design data to inform

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army	DATE: April 2013
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY7: <i>Army Systems Engineering, Architecture & Analysis</i>
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implementation architectures and support informed systems acquisition decisions across the life cycle. The data is organized in order to support views and analysis across organizational, portfolio, and budgeting bins.

One of the first products/processes developed from the SOSE was the Common Operation Environment (COE) vision for the Army. In 2012, ASA(ALT) formally unveiled its COE Implementation Plan designed to help industry partners and Army program managers by offering an approved set of network standards, processes and products, designed to enable them to quickly and efficiently develop and field interoperable software capabilities. The plan establishes and makes public the Army's Network technical standards, which any sized vendor can understand, internalize and build towards. This efficiency helps increase competition and helps lower software and hardware integration burden and costs. The implementation plan is a living document that will remain flexible as the Army continues to evolve its network standards and fielding methods. The Implementation Plan calls for the Army to continuously seek industry and service's input throughout the COE life cycle. This project provides for technical support to oversee the execution of the COE Implementation plan, COE Orchestration, Verification and Validation (V&V), and Governance. 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. It provides for COE architecture validation, design baseline validation, and the verification of COE reference architecture compliance. Finally, it provides for the accreditation, certification and refinement of test plans and events.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Army System of System Engineering and Analysis</p> <p>Description: To develop System of System Brigade Reference and Implementation Architectures to support NIE, Tactical Capability Sets and Army POM and 30 year plans. This effort begins with TRADOC's and Army G-6's operational and technical architecture requirements.</p> <p>FY 2014 Plans: The funds provide the following: Synchronizing ongoing System-of-Systems (SoS) engineering and analysis to develop the following products:</p> <ul style="list-style-type: none"> - Develop standards for NetOps System Architecture - Continue development of TCS15 Reference Architecture - Begin development of TCS16 Reference Architecture - Develop the NIE reference and implementation architecture baselines for NIE 14.2, 15.1, 15.2 and 16.1 - Develop and deliver Waveform Roadmap documents - Develop and deliver Spectrum Roadmap - Develop and deliver Radio Investment Strategy - Develop and deliver Cyber Strategy - Develop and deliver Informational Assurance Strategy - Develop and deliver Sensor standards compliance policy - Develop and deliver Sensor standards specification documents 	0.000	0.000	14.869

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>		PROJECT DY7: <i>Army Systems Engineering, Architecture & Analysis</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Develop and deliver Sensor reference architecture - Develop and deliver Sensor Initial Capabilities Document - Continue to refine the Aerial Layer Transition To TCS 15 Architecture - Continue to develop and deliver the Implementation Plan for TCS 15 Network Design - Continue to develop and deliver the SBCT Analysis for TCS 15-19 - Continue to develop and deliver the ABCT Analysis for TCS 17-19 - Develop and deliver the BUS architecture (VICTORY) - Continue AIC Mission thread refinement - Develop and deliver initial reference architecture for Integrated Base Defense (IBD) OCONUS Installations for FY 2018 fielding - Develop and deliver initial IBD Movement Corridor reference architecture for FY 2018 fielding - Continue to develop and deliver Integrated Base Defense Installations reference and implementation architectures for FY 2016 & FY 2017 fielding - Develop and deliver initial Communication & Computing Infrastructure (CCI) Installation reference architectures 				
<p>Title: Common Operating Environment (COE)</p> <p>Description: Army Systems Engineering & (COE) Development/Validation to Provide Technical Support for the Execution of the Army System Engineering in COE Implementation.</p> <p>FY 2014 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, 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), Global Network Enterprise Construct (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 NIEs 14.2 and 15.1, 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</p>		0.000	0.000	3.287

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY7: <i>Army Systems Engineering, Architecture & Analysis</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
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.			
Title: Facilities and IT Support	0.000	0.000	0.773
Description: Provides funding for infrastructure/facilities and IT support.			
FY 2014 Plans: Provides funding for infrastructure/facilities. It includes the cost for government IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	18.929

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• DY3: <i>DY3 NIE Test & Evaluation</i>			29.697		29.697	33.947	33.768	33.795	33.773	Continuing	Continuing
• DY4: <i>DY4 Network Integration Support</i>			25.863		25.863	20.830	20.788	20.777	20.773	Continuing	Continuing
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>			7.829		7.829	8.949	8.902	8.909	8.904	Continuing	Continuing
• DY6: <i>DY6 Brigade and Platform Integration Support</i>			97.790		97.790	106.813	106.724	106.326	106.344	Continuing	Continuing
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>			13.640		13.640	14.432	14.402	14.370	14.369	Continuing	Continuing

Remarks

D. Acquisition Strategy
This project does not have any requirement for direct procurement of hardware or 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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY7: <i>Army Systems Engineering, Architecture & Analysis</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Army System of System Engineering and Analysis	TBD	Various Note: 1:TBD	0.000	-		-		14.869	Nov 2013	-		14.869	0.000	14.869	0.000
Common Operating Environment (COE)	TBD	Various Note: 1:TBD	0.000	-		-		3.287	Nov 2013	-		3.287	0.000	3.287	0.000
Subtotal			0.000	0.000		0.000		18.156		0.000		18.156	0.000	18.156	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Facility and IT Support	TBD	Various: Note: 1:TBD	0.000	-		-		0.773	Nov 2013	-		0.773	0.000	0.773	0.000
Subtotal			0.000	0.000		0.000		0.773		0.000		0.773	0.000	0.773	0.000

Remarks
 Note:1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	18.929	0.000	18.929	0.000	18.929	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY7: <i>Army Systems Engineering, Architecture & Analysis</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
CS16 - Develop and Deliver CS16 SBCT Reference Architecture	[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DY7: <i>Army Systems Engineering, Architecture & Analysis</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Provide engineering, analytical and architectural oversight	2	2012	1	2015
CS14 - Develop and Deliver CS14 SBCT Reference Architecture	4	2012	3	2013
CS15 - Develop and Deliver CS 15 ABCT Reference Architecture	3	2013	2	2014
Continue development of IBD CONUS Installations refer. arch. for FY16 & 17	3	2013	4	2014
Continue development of IBD OCONUS Base Camps refer. archt. for FY15-17 fielding	3	2013	4	2014
Develop and deliver CCI OCONUS Base Camp refer. Arch.for FY16 & FY17 fielding	3	2013	4	2014
CS15 - Develop and Deliver CS15 IBCT Reference Architecture	4	2013	3	2014
Develop initial ref. arch. for IBD OCONUS Installations for FY18 fielding	1	2014	4	2014
Dev. & deliver CCI CONUS Installation refer. Arch. for FY17 & FY18 fielding	1	2014	4	2014
Dev. initial IBD Movement Corridor reference architecture for FY18 fielding	1	2014	4	2014
Dev. initial CCI OCONUS Installation refer. Arch. for FY18 fielding	1	2014	4	2014
CS16 - Develop and Deliver CS16 IBCT Reference Architecture	3	2014	3	2015
CS16 - Develop and Deliver CS16 ABCT Reference Architecture	4	2014	3	2015
CS16 - Develop and Deliver CS16 SBCT Reference Architecture	4	2014	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>				PROJECT DZ6: <i>Army Integration Management & Coordination</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
DZ6: <i>Army Integration Management & Coordination</i>	-	0.000	0.000	13.640	-	13.640	14.432	14.402	14.370	14.369	Continuing	Continuing
Quantity of RDT&E Articles												

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

This project (DZ6) was created to support the Army's Brigade Analysis, Integration and Evaluation mission. The FY 2013 President Budget submission reflects Program Element (PE) 604798A broken down into three projects; DV1, DU8, and DU9. Beginning with FY 2014 Presidents Budget submission this PE is now broken down into six projects to better align the funding with the progressive changes to the development and execution of both Network Integration Events (NIE) and Tactical Capability Set-Synchronized Fielding (TCS-SF) missions. These projects are: DY3; NIE Test Evaluation, DY4; Network Integration Support, DY5; Production /Fielding Coordination for Capability Sets, DY6; Brigade and Platform Integration Support, DY7; Army System Engineering, Architecture & Architecture & Analysis, and DZ6; Army Integration Management & Coordination. Beginning in FY 2014 the activities within this project is divided among all of the new Projects as outlined above.

A. Mission Description and Budget Item Justification

This project will support the management and coordination of all six Phases of the Army's Agile Network Integration process along with the Army System of System engineering and analysis architecture development for the Army. The project will fund the "shared" resources that support the technical and management (i.e. headquarters, resource management, acquisition, affordability, human resources, operations, etc.) aspects of the Army's Agile Network Integration process and coordination of Production Integration and Fielding of the Tactical Capability Set (TCS). The "shared" resources reduce overall cost to the program by spreading this support for three directorates, sharing the personnel and cost for direct support.

FY 2014 will continue the NIE gap and evaluation process for NIE 14.2 and NIE 15.1. For example, out of the 106 SUE candidates that responded to the solicitation for NIE 13.1, 7 SUTs and 30 SUEs were evaluated. These systems were evaluated against one of the Army's nine gaps identified for NIE 13.1 For NIE 13.2: against 11 gaps, 4 SUTs and 5 SUEs were selected for field evaluation and 4 SUEs were selected for Lab Base evaluation only. For NIE 14.1: 30 SUEs were submitted against the following 19 Gaps: (1) Brigade/Battalion Command Post (CP) Mobility and Scalability, (2) CDR Applications for Mobile/Handhelds (HH), (3) Network Visualization on the Common Operational Picture (COP), (4) Integrated LandWarNet, Installation Networks & Training Resources, (5) Aerial Layer Network Extension, (6) Air-Ground Network Architecture, (7) Enterprise Network Capabilities (e-mail), (8) Integrated Network Assurance - Network Access Control (NAC), (9) Integrated Network Assurance - Network Intrusion Prevention System, (10) Integrated Network Assurance - Information Assurance Vulnerability Mgmt, (11) Integrated Network Assurance - Security Information Management System, (12) Host Based Security System, (13) Integrated Trouble Ticketing, (14) Unified Communications Capability, (15) Evaluate instrumented Home Station Small Unit Training to include AARs, (16) Operational Energy - Commonality of Soldier Carried Energy Sources, (17) Operational Energy - Energy Sources with Extended Duration and Power, (18) Operational Energy - Monitor and Manage System Power, supply and Demand, and (19) Operational Energy - Reduce Reliance on Petroleum Based Energy.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DZ6: <i>Army Integration Management & Coordination</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
<p>Title: SoSE&I Program Management and Integration</p> <p>Description: This effort funds for all "shared" resources that supports the Brigade Analysis, Integration and Evaluation program.</p> <p>FY 2014 Plans: This effort includes program, information, security, business, and personal management efforts required to support the SoSI integration teams. It includes the following types of activities: Program management, contracting, financial management, cost analysis, personnel management, operations, security management, information management, facilities and infrastructure management, Pentagon liaison, knowledge management.</p>	0.000	0.000	9.800
<p>Title: Facilities and IT Support</p> <p>Description: Provides funding for infrastructure/facilities and IT support.</p> <p>FY 2014 Plans: Provides funding for infrastructure/facilities, and government personnel IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.</p>	0.000	0.000	3.840
Accomplishments/Planned Programs Subtotals	0.000	0.000	13.640

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• DY3: <i>DY3 NIE Test & Evaluation</i>			29.697		29.697	33.947	33.768	33.795	33.773	Continuing	Continuing
• DY4: <i>DY4 Network Integration Support</i>			25.863		25.863	20.830	20.788	20.777	20.773	Continuing	Continuing
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>			7.829		7.829	8.949	8.902	8.909	8.904	Continuing	Continuing
• DY6: <i>DY6 Brigade and Platform Integration Support</i>			97.790		97.790	106.813	106.724	106.326	160.344	Continuing	Continuing
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>			18.929		18.929	20.029	19.986	19.943	19.941	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Army		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DZ6: <i>Army Integration Management & Coordination</i>

D. Acquisition Strategy

This project includes the purchase of IT hardware, software and service support; general office and operational supplies.

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 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DZ6: <i>Army Integration Management & Coordination</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SoSE&I Program Management and Integration	TBD	Various Note: 1:TBD	0.000	-		-		9.800	Nov 2013	-		9.800	0.000	9.800	0.000
Subtotal			0.000	0.000		0.000		9.800		0.000		9.800	0.000	9.800	0.000

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg. (Crystal City, VA), Pentagon, (Washington DC).

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Facilities and IT Support	TBD	Various Note: 1:TBD	0.000	-		-		3.840	Nov 2013	-		3.840	0.000	3.840	0.000
Subtotal			0.000	0.000		0.000		3.840		0.000		3.840	0.000	3.840	0.000

Remarks
 Note:1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg. (Crystal City, VA), Pentagon, (Washington DC), FT Bliss (TX), White Sands Missile Range (NM).

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	13.640	0.000	13.640	0.000	13.640	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DZ6: <i>Army Integration Management & Coordination</i>
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	FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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 14.2 Planning - Execution	
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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604798A: <i>Brigade Analysis, Integration and Evaluation</i>	PROJECT DZ6: <i>Army Integration Management & Coordination</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 Planning - Execution	2	2013	3	2014

