

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 4

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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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Appropriation 2040: Research, Development, Test & Evaluation, Army*

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55	04	0603308A	Army Space Systems Integration.....	15
56	04	0603619A	Landmine Warfare and Barrier - Adv Dev.....	25
57	04	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev.....	34
58	04	0603639A	Tank and Medium Caliber Ammunition.....	42
59	04	0603653A	ADVANCED TANK ARMAMENT SYSTEM (ATAS).....	58
60	04	0603747A	Soldier Support and Survivability.....	70
61	04	0603766A	Tactical Electronic Surveillance System - Adv Dev.....	92
62	04	0603774A	Night Vision Systems Advanced Development.....	100
63	04	0603779A	Environmental Quality Technology - Dem/Val.....	114
64	04	0603782A	WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL.....	125
65	04	0603790A	NATO Research and Development.....	142
66	04	0603801A	Aviation - Adv Dev.....	157
67	04	0603804A	Logistics and Engineer Equipment - Adv Dev.....	171
68	04	0603805A	Combat Service Support Control System Evaluation and Analysis.....	221

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Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)
Appropriation 2040: Research, Development, Test & Evaluation, Army

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Line Item	Budget Activity	Program Element Number	Program Element Title	Page
69	04	0603807A	Medical Systems - Adv Dev.....	230
70	04	0603827A	Soldier Systems - Advanced Development.....	259
71	04	0603850A	Integrated Broadcast Service.....	300
72	04	0604115A	TECHNOLOGY MATURATION INITIATIVES.....	305
73	04	0604131A	TRACTOR JUTE.....	318
74	04	0604319A	Indirect Fire Protection Capability Increment 2.....	319
75	04	0604785A	INTEGRATED BASE DEFENSE.....	329
76	04	0305205A	Long Endurance Multi-Intelligence Vehicle (LEMV).....	333

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Army Missile Defense Systems Integration	0603305A	54	04.....	1
Army Space Systems Integration	0603308A	55	04.....	15
Aviation - Adv Dev	0603801A	66	04.....	157
Combat Service Support Control System Evaluation and Analysis	0603805A	68	04.....	221
Environmental Quality Technology - Dem/Val	0603779A	63	04.....	114
INTEGRATED BASE DEFENSE	0604785A	75	04.....	329
Indirect Fire Protection Capability Increment 2	0604319A	74	04.....	319
Integrated Broadcast Service	0603850A	71	04.....	300
Landmine Warfare and Barrier - Adv Dev	0603619A	56	04.....	25
Logistics and Engineer Equipment - Adv Dev	0603804A	67	04.....	171
Long Endurance Multi-Intelligence Vehicle (LEMV)	0305205A	76	04.....	333
Medical Systems - Adv Dev	0603807A	69	04.....	230
NATO Research and Development	0603790A	65	04.....	142
Night Vision Systems Advanced Development	0603774A	62	04.....	100
Smoke, Obscurant and Target Defeating Sys-Adv Dev	0603627A	57	04.....	34
Soldier Support and Survivability	0603747A	60	04.....	70

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Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Soldier Systems - Advanced Development	0603827A	70	04.....	259
TECHNOLOGY MATURATION INITIATIVES	0604115A	72	04.....	305
TRACTOR JUTE	0604131A	73	04.....	318
Tactical Electronic Surveillance System - Adv Dev	0603766A	61	04.....	92
Tank and Medium Caliber Ammunition	0603639A	58	04.....	42
WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL	0603782A	64	04.....	125

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</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	-	23.463	14.505	15.301	-	15.301	15.604	14.606	14.613	14.886	Continuing	Continuing
TR5: <i>Missile Defense Battlelab</i>	-	14.629	14.505	15.301	-	15.301	15.604	14.606	14.613	14.886	Continuing	Continuing
TR7: <i>Indirect Fire Protection Capability II</i>	-	8.834	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

Indirect Fire Protection Capability Increment 2 (IFPC2) established a new Program Element (PE) 0604319A for its RDTE program.

Previous PE/Project/Title: 0603305A/TR7 Army Missile Defense Systems Integration/TR7 Indirect Fire Protection Capability II-Intercept

Current PE/Project/Title: 0604319A/DU3 Indirect Fire Protection Capability Increment 2/ DU3 IFPC2

Please note the following:

- 1) The funding in FY 2011-12 is shown in PE 0603305A and
- 2) The funding in FY 2013-17 is shown in PE 0604319A

A. Mission Description and Budget Item Justification

This Program Element funds missile defense systems integration efforts for both the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) and the Program Executive Office for Missiles and Space (PEO-MS).

USASMDC/ARSTRAT: Headquarters, Department of the Army General Order 37, dated 16 October 2006, designated USASMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), the Army integrator for global missile defense, and the Army Service Component Command (ASCC) of the U.S. Strategic Command (USSTRATCOM). Army Regulation (AR) 10-87 Army Commands, Army Service Component Commands, and Direct Reporting Units, dated 4 September 2007 and AR 5-22 The Army Force Modernization Proponent System dated 19 August 2009 designates USASMDC/ARSTRAT as the Army specified proponent for Global Missile Defense and Space/High Altitude capabilities. As the Army proponent for space, high altitude and GMD, USASMDC/ARSTRAT is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organizations, Training, Material, Leadership & Education, Personnel and Facilities (DOTMLPF) solutions to realize the GMD capabilities. As the Army integrator for global missile defense, USASMDC/ARSTRAT is responsible to review programs managed by the Army, other Services, Defense agencies and National agencies to ensure that they are correctly synchronized and will ultimately provide the capabilities required by USSTRATCOM to execute its global missile defense responsibilities.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>
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Project TR5 funds United States Army Space and Missile Defense Command/ Army Strategic Command (USASMDC/ARSTRAT) efforts to develop and the associated operational prototyping, experimentation, operational analysis, and modeling and simulation to support of current and future Forces.

Project TR7 funds the Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I). It is a ground-based weapon system that will be designed to acquire, track, engage, and defeat Unmanned Aircraft Systems (UAS), Cruise Missiles (CM), and Rockets, Artillery, and Mortars (RAM). The System will provide 360-degree protection and will simultaneously engage threats arriving from different azimuths. A block acquisition approach will be used to provide this capability. The Block 1 system will consist of an existing interceptor and sensor and development of technical fire control and a Multi-Mission Launcher (MML) to support the UAS and CM mission. The Block 2 system will develop interceptors, sensors, and technical fire control to support the counter RAM mission. The IFPC Inc 2-I System will be compatible with the Army Integrated Air and Missile Defense (IAMD) C2 architecture. The IFPC Inc 2-I System will be transportable by Army common mobile platforms.

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	24.386	14.505	15.375	-	15.375
Current President's Budget	23.463	14.505	15.301	-	15.301
Total Adjustments	-0.923	0.000	-0.074	-	-0.074
• Congressional General Reductions	-0.014	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.278	-			
• Other Adjustments 1	-0.631	-	-0.074	-	-0.074

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR5: <i>Missile Defense Battlelab</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
TR5: <i>Missile Defense Battlelab</i>	-	14.629	14.505	15.301	-	15.301	15.604	14.606	14.613	14.886	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 TR5 funds United States Army Space and Missile Command/ Army Strategic Command (USASMDC/ARSTRAT) efforts to develop, analyze and mature warfighting concepts, focus military science and technology research, and conduct warfighting experiments to validate those concepts, identify GMD capabilities needed to implement the validated concepts, and develop Doctrine, Organizations, Training, Material, Leadership & Education, Personnel and Facilities (DOTMLPF) solutions to realize GMD capabilities. Additionally, this project funds the delivery of innovations to the warfighter through operational prototyping, and operational analysis in support of current and future Forces. The concepts, experiments, analyses, and operational prototypes apply to the entire mission areas assigned to USASMDC/ARSTRAT in its role as an Army Service Component Command (ASCC) to USSTRATCOM.

To complete these efforts the Future Warfare Center (FWC) identifies Service, Joint, Interagency and Multinational capability gaps and investigates, develops and transitions Integrated Air and Missile Defense operational prototype technology solutions. The FWC performs operational and cost benefit analyses, develops Missile Defense threat specifications and, when appropriate, investigates, develops and experiments with Integrated Air and Missile Defense capability solutions. This work is supported by models and simulation tools optimized to address the unique requirements of endo- and exo-atmospheric missile defense threats, sensors, command & control, and counter-measures.

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

	FY 2012	FY 2013	FY 2014
Title: Prototypes	8.781	8.661	9.106
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2012 Accomplishments: Managed the Command and Control Gap Filler (C2F), Demonstrate for Joint, Interagency, Intergovernmental and Multinational (JIIM) partners a capability that enables efficient, secure, timely and trusted exchange of information resulting in enhanced aerospace capability for the Army. Sustained core functions to maintain prototyping platforms and collaborate with the Integrated Air and Missile Defense community on experimentation events. Additionally maintained configuration management of prototyping systems (configuration control boards, user groups, architectures) resulting in a viable prototyping platform that has value to Joint Air and Missile Defense community. The Army Air and Missile Defense Command Planning support systems provided a net-centric infrastructure using Advanced Warfare Environment (AWarE) and Tactical integrated Geographic Environment (TIGER)			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR5: <i>Missile Defense Battlelab</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>software in support of Army Air and Missile Defense Commands and Detachments. Integrated the Air/Event Information Sharing Services into NORTHCOM J6 decision support systems.</p> <p>FY 2013 Plans: Take the lessons learned from the FY12 efforts to continue to evaluate new technologies in realistic operating environments. This is accomplished by participating in and providing support to Unified Quest wargames and experiments to analyze and integrate technology to identify the feasibility integration into Army space, missile defense, and high altitude systems. The Space and Missile Defense Command will participate and support to biennial rewrites of Army Capstone, Operational and Functional Concepts. Continue to provide operational manager support to STRATCOM, NORTHCOM and SOCOM Joint Technical Capability Demonstrations to ensure Army space, missile defense, and high altitude equities are represented in advanced technology developments by demonstrating military utility when applied to military equipment and techniques. Examples include: supporting multi service experiments and capability development of the national-directed Phased Adaptive Approach (PAA) for Ballistic Missile Defense (BMD) as it is applied to each of the regional COCOMs; and experimenting with operationally responsive space and high altitude capabilities to ensure the broader Army enterprises can leverage the advantages of these platforms for communications, Intelligence Surveillance and Reconnaissance (ISR), position navigation, missile warning and command and control. Continue to develop mitigation strategies for Army forces to operate effectively in contested space, missile defense and cyber environments. Developing effective Integrated Missile Defense (IMD) concepts for Army support to the Phased Adaptive Approach (PAA) being implemented within each regional COCOM. Based on a successful evaluation of Air/Event Information Sharing Services into NORTHCOM J6 decision support systems support the transition of the application to a Joint Capabilities Technical Demonstration (JCTD). Will support TRADOC proponents with their responsibilities relative to doctrine, organization, training, material, leader development and education, personnel, and facilities plus related matters to continue leveraging space, missile defense, and high altitude proponent input to Joint Capabilities Integration and Development System, Science and Technology, Concept Development, Capability Development for Rapid Transition, and Capability Gap Analysis Army.</p> <p>FY 2014 Plans: Take the lessons learned from the FY13 efforts to continue to evaluate new technologies in realistic operating environments. This is accomplished by participating in and providing support to Unified Quest wargames and experiments to analyze and integrate technology to identify the feasibility integration into Army space, missile defense, and high altitude systems. The Space and Missile Defense Command will participate and support biennial rewrites of Army Capstone, Operational and Functional Concepts. Continue to provide operational manager support to STRATCOM, NORTHCOM and SOCOM Joint Technical Capability Demonstrations to ensure Army space, missile defense, and high altitude equities are represented in advanced technology developments by demonstrating military utility when applied to military equipment and techniques. Examples include: supporting multi service experiments and capability development of the national-directed Phased Adaptive Approach (PAA) for Ballistic Missile Defense (BMD) as it is applied to each of the regional COCOMs; and experimenting with operationally responsive space, space control, and high altitude capabilities to ensure the broader Army enterprises can leverage the advantages of these</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>		PROJECT TR5: <i>Missile Defense Battlelab</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
platforms for communications, Intelligence Surveillance and Reconnaissance (ISR), position navigation, missile warning and command and control. Continue to develop mitigation strategies for Army forces to operate effectively in contested space, missile defense and cyber environments. Developing effective Integrated Missile Defense concepts for Army support to the Phased Adaptive Approach (PAA) being implemented within each regional COCOM. Based on the successful evaluation of Air/Event Information Sharing Services into NORTHCOM J6 decision support systems we will support the transition of the application to a Joint Capabilities Technical Demonstration (JCTD). Will support TRADOC proponents with their responsibilities relative to doctrine, organization, training, material, leader development and education, personnel, and facilities plus related matters to continue leveraging space, missile defense, and high altitude proponent input to Joint Capabilities Integration and Development System, Science and Technology, Concept Development, Capability Development for Rapid Transition, and Capability Gap Analysis Army We will sustain our core prototyping platforms, as outlined above. BC3 will be upgraded to more realistically address information flows related to Close Air Support.				FY 2012	FY 2013	FY 2014
Title: Analysis, and Models and Simulations (M&S)				5.848	5.844	6.195
Description: Funding is provided for the following effort				0	0	
FY 2012 Accomplishments: Supported ongoing efforts that provided military utility and cost reduction analysis of space, missile defense, and high altitude systems specifically in realistic operating environments to be able to determine the ability of the specific technology to fill capability gaps in terms of utility to the Warfighter. The technology demonstrations and exercises were used to help expedite technology transition from the laboratory or potential dual use commercial technologies include: augmenting analysis for Training and Doctrine Command (TRADOC) experiments and technology demonstrations; Joint Fires Experiment, Nimble Fire Experiment; Global Thunder / Global Lightning. Supported PEO Missiles and Space and Fires Center of Excellence for modeling and simulation and analysis support for integrated air and missile defense. Supported technology demonstrations, Analysis and Demonstration Tools/Test Beds for evolving space superiority and operationally responsive space concepts that address emerging needs will continue and be expanded in the out years to ensure that advanced technology development can adequately address space, missile defense and high altitude doctrinal and material investments. The FWC provided program management for maintenance, sustainment, and development for Extended Air Defense Simulation (EADSIM) version 17 release, (a space, missile defense, and high altitude decision support tool utilized by over 300 Army and Joint organizations) to provide the required analysis capability to perform evaluations of the benefits of integrating technologies.						
FY 2013 Plans: Take the lessons learned from the FY12 efforts to continue to evaluate new technologies in realistic operating environments. This will be accomplished by supporting ongoing efforts that provide the most realistic operating environment available to perform technology gap and cost reduction analysis of space, missile defense, and high altitude systems. Realistic operating						

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>		PROJECT TR5: <i>Missile Defense Battlelab</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>environments will be available to determine the ability of the specific technologies to fill capability gaps in terms of utility to the warfighter. Support of technology demonstrations, Analysis and Demonstration Tools/Test Beds for evolving space superiority and operationally responsive space concepts will address emerging needs and continue to be expanded to ensure that advanced technology development can adequately enhance address space, missile defense and high altitude. The FWC will continue to provide program management for maintenance, sustainment, and development for Extended Air Defense Simulation (EADSIM), to provide the required fidelity for a synthetic operating environment to provide the capability to perform system and cost benefit analysis.</p> <p>FY 2014 Plans: : Take the lessons learned from the FY13 efforts to continue to evaluate new technologies in realistic operating environments. This will be accomplished by supporting ongoing efforts that provide the most realistic operating environment available to perform technology gap and cost reduction analysis of space, missile defense, and high altitude systems. Realistic operating environments will be available to determine the ability of the specific technologies to fill capability gaps in terms of utility to the Warfighter. Support of technology demonstrations, Analysis and Demonstration Tools/Test Beds for evolving space superiority and operationally responsive space concepts will address emerging needs and continue to be expanded to ensure that advanced technology development can adequately enhance address space, missile defense and high altitude. The FWC will continue to provide program management for maintenance, sustainment, and development for EADSIM to provide the required high fidelity synthetic operating environment to provide the capability to perform system and cost benefit analysis.</p>				
Accomplishments/Planned Programs Subtotals		14.629	14.505	15.301
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR5: <i>Missile Defense Battlelab</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

Release of Extended Air Defense Simulation updates.	█																											
Offensive/Defensive Integration	████████████████████																											
Integrated Air and Missile Defense Battle Command System Study	████████████████████																											
JIAMDO Analysis Support	████████████████████																											
Operational Analysis in Support of Joint Functional Component Command for IMD	████████████████████																											
High Altitude Military Utility Assessment	████████████████████																											
AN/TPY-2 FBM Capability Production Document	█																											
AN/TPY-2 FBM Transition and Transfer	████																											
GMD Capability Production Document to support transition of GMD from MDA to Army	████																											

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR5: <i>Missile Defense Battlelab</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Release of Extended Air Defense Simulation updates.	3	2012	3	2012
Offensive/Defensive Integration	2	2012	2	2013
Integrated Air and Missile Defense Battle Command System Study	2	2012	2	2013
JIAMDO Analysis Support	3	2012	3	2013
Operational Analysis in Support of Joint Functional Component Command for IMD	3	2012	4	2013
High Altitude Military Utility Assessment	4	2012	4	2013
AN/TPY-2 FBM Capability Production Document	4	2012	4	2012
AN/TPY-2 FBM Transition and Transfer	3	2014	3	2014
GMD Capability Production Document to support transition of GMD from MDA to Army	3	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>				PROJECT TR7: <i>Indirect Fire Protection Capability II</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
TR7: <i>Indirect Fire Protection Capability II</i>	-	8.834	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

Indirect Fire Protection Capability Increment 2 - Intercept (IFPC2) established a new Program Element (PE) 0604319A for its RDTE program.

Previous PE/Project/Title: 0603305A/TR7 Army Missile Defense Systems Integration/TR7 Indirect Fire Protection Capability 2

Current PE/Project/Title: 0604319A/DU3 Indirect Fire Protection Capability Increment 2/ DU3 IFPC2

Please note the following:

- 1) The funding in FY 2011-12 is shown in PE 0603305A and
- 2) The funding in FY 2013-17 is shown in PE 0604319A

A. Mission Description and Budget Item Justification

This program supports the overall Air and Missile Defense (AMD) architecture and provides a robust intercept capability against Cruise Missiles (CM), Unmanned Aircraft System (UAS) and Rocket, Artillery, and Mortar (RAM) threats for deployed forces. The Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) is a ground-based weapon system that will be designed to acquire, track, engage, and defeat UAS, CM, and RAM. The System will provide 360-degree protection and will simultaneously engage threats arriving from different azimuths. A block acquisition approach will be used to provide this capability. The Block 1 system will consist of an existing interceptor and sensor and development of technical fire control and a Multi-Mission Launcher (MML) to support the UAS and CM mission. The Block 2 system will develop interceptors, sensors, and technical fire control to support the counter RAM mission. The IFPC Inc 2-I System will be compatible with the Army Integrated Air and Missile Defense (IAMD) C2 architecture. The IFPC Inc 2-I System will be transportable by Army common mobile platforms.

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

	FY 2012	FY 2013	FY 2014
Title: Government Product Office Support	5.056	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR7: <i>Indirect Fire Protection Capability II</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Initiated milestone documentation - Stood up government Product office to include personnel, infrastructure, travel - Established processes and procedures for managing the program - Provided technical support for Analysis of Alternatives - Supported/developed of Acquisition Strategy 			
<p>Title: Engineering Technical support for Milestone documentation, Contract Requirements Package, System Requirements Review, technical assessments/concept studies</p> <p>Description: Funding is provided for the following effort:</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Supported development of requirements baseline - Provided technical support for Analysis of Alternatives - Supported development of milestone documentation - Supported/developed Acquisition Strategy and performance specification - Supported system requirements preparation - Supported design of Technical Fire Control, Command Vehicle and Launcher - Developed interface control documents for system - Performed technical assessments, concept studies, cost reduction, threat analysis and required documentation 	3.778 0	0.000	0.000
Articles:			
Accomplishments/Planned Programs Subtotals	8.834	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
• PE 0604869A, Proj M06: <i>Patriot/MEADS Combined Aggregate Program (CAP)</i>	377.610	400.861								0.000	778.471
• PE 0605456A, Proj PA3: <i>PAC-3/MSE MISSILE</i>	86.139	69.029	68.843		68.843	129.627	63.506	65.179	65.734	Continuing	Continuing
• SSN C53101: <i>MSE Missile</i>	74.953	12.850	540.401		540.401	540.520	559.623	566.757	655.184	Continuing	Continuing
• PE 0102419A, Proj E55: <i>JLENS</i>	317.382	190.422	98.450		98.450	46.600	47.450	37.830	2.600	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR7: <i>Indirect Fire Protection Capability II</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
• PE 0605455A, Proj S35: <i>SLAMRAAM</i>	1.186									0.000	1.186
• PE06043305A, Proj TR7: <i>Indirect Fire Protection Capability - II</i>	8.834									Continuing	Continuing
• PE0604319A, Proj DU3: <i>Indirect Fire Protection Capability Increment 2</i>			79.232		79.232	107.587	146.463	151.769	159.700	Continuing	Continuing
• PE 0605457A, Proj S40: <i>Army Integrated Air and Missile Defense (AIAMD)</i>	262.032	262.211	364.649		364.649	382.869	221.306	141.908	79.338	Continuing	Continuing
• SSN BZ5075: <i>Army IAMD Battle Command System (IBCS)</i>			21.200		21.200	100.700	315.370	482.640	466.130	Continuing	Continuing
• PE 0604820A, Proj E10: <i>SENTINEL</i>	3.093	3.486	1.549		1.549	5.264	5.911	6.307	6.053	Continuing	Continuing
• PE0604741A, Proj 126,146, 149: <i>Air Defense C2I Eng Dev</i>	57.050		18.294		18.294	20.898	20.557	18.009	11.015	Continuing	Continuing

Remarks

This program supports the Army Integrated Air and Missile Defense (IAMD) architecture.

D. Acquisition Strategy

The Materiel Development Decision (MDD) was completed in fourth quarter FY 2011, allowing for the initiation of an Analysis of Alternatives (AoA) to determine materiel solution approach; establishment of requirement baseline; and initiation of Acquisition Strategy.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR7: <i>Indirect Fire Protection Capability II</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			
FY11 Pre MDD efforts	TBD	Cruise Missile Defense Systems Project Office:Huntsville, AL	4.143	-		-		-		-		-	Continuing	Continuing	Continuing
Government Project Office Oversight	TBD	Cruise Missile Defense Systems Project Office:Huntsville, AL	0.000	1.056		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			4.143	1.056		0.000		0.000		0.000		0.000			

Remarks
Management Services are to initiate Milestone Documentation Development; define Requirements in support of Contract Requirements Package for contract award. Support Analysis of Alternatives 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			
Government Developmental Engineering	TBD	Cruise Missile Defense Systems Project Office:Huntsville, AL	0.000	4.000		-		-		-		-	Continuing	Continuing	Continuing
Engineering Technical Centers (Government)	TBD	Aviation and Missile Research, Development, Engineering Center:Huntsville, AL	0.000	3.778		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	7.778		0.000		0.000		0.000		0.000			

Remarks
Product Development costs in FY 2012 cover the development of System Engineering documentation (Technology Development Strategy; Test and Evaluation Strategy; System Engineering Plan); initiation of Contract Requirements Package development in preparation for Milestone in FY 2013 and for a prime contract award in FY 2013.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603305A: <i>Army Missile Defense Systems Integration</i>	PROJECT TR7: <i>Indirect Fire Protection Capability II</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
Project Cost Totals	4.143	8.834	0.000	0.000	0.000	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</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	-	9.557	9.876	13.592	-	13.592	14.602	14.014	20.170	23.412	Continuing	Continuing
990: <i>Space And Missile Defense Integration</i>	-	9.557	9.876	11.592	-	11.592	11.102	9.914	15.970	19.112	Continuing	Continuing
EB7: <i>Army Space System Enhancement/Integration</i>	-	0.000	0.000	2.000	-	2.000	3.500	4.100	4.200	4.300	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 program element funds space systems integration efforts performed by the US Army Space and Missile Defense Command/ Army Forces Strategic Command (USASMDC/ARSTRAT) and the Program Executive Office for Intelligence, Electronic Warfare

USASMDC/ARSTRAT: Headquarters, Department of the Army General Order Number 37, dated 16 October 2006, designated USASMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), the Army integrator for global missile defense, and the Army Service Component Command of U.S. Strategic Command (USSTRATCOM). As such, USASMDC/ARSTRAT is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organization, Training, Material, Leadership & Education, Personnel and Facilities (DOTMLPF) solutions to realize those space related capabilities. Army Regulation (AR) 10-87 Army Commands, Army Service Component Commands, and the Direct Reporting Units, dated 4 September 2007 and AR 5-22 The Army Force Modernization Proponent System dated 19 August 2009 designates USASMDC/ARSTRAT as the Army specified proponent for Global Missile Defense and Space/High Altitude Capabilities.

Project #990 funds USASMDC/ARSTRAT to integrate warfighting concepts and technologies, validate concepts, and identify capabilities need to implement the validated concepts, and develop DOTMLPF solutions to realize those space and high altitude related capabilities. Sustains Joint Friendly Force Tracking (J-FFT) Mission Management Center and its associated testbed for both operations and spiral development for 24/7 Friendly Force Tracking integration into a real-time common operating picture for Combatant Commanders, Joint Task Force Commanders (JTF) and Coalition partners. The MMC injects real-time J-FFT information into the Common Operating Picture for COCOMs, JTFs and Coalition partners. USSTRATCOM, in accordance with CJCSI 3910.01 (reference V.4.) is designated one of three coordinating agencies for J-FFT within DoD. CJCSI 3910.01 directs eight specified tasks to USSTRATCOM. USSTRATCOM SI 534-5 (reference V.6.) and annually published USSTRATCOM operations orders have designated USASMDC/ARSTRAT as the lead USSTRATCOM component command for FFT.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</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	9.763	9.876	11.648	-	11.648
Current President's Budget	9.557	9.876	13.592	-	13.592
Total Adjustments	-0.206	0.000	1.944	-	1.944
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.206	-			
• Other Adjustments 1	-	-	1.944	-	1.944

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</i>				PROJECT 990: <i>Space And Missile Defense Integration</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
990: <i>Space And Missile Defense Integration</i>	-	9.557	9.876	11.592	-	11.592	11.102	9.914	15.970	19.112	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 990 funds United States Army Space and Missile Command/Army Strategic Command (USASMDC/ARSTRAT) efforts to develop, analyze and mature warfighting concepts, and conduct warfighting experiments for space and high altitude capabilities. The program also funds development and integration of new data sources and data services into the Joint Friendly Force Tracking Mission Management Center. The Mission Management Center (MMC) injects real-time Joint Friendly Force Tracking (J-FFT) information into the Common Operating Picture for Combatant Commands (COCOMs), Joint Task Forces (JTFs) and Coalition partners. USASMDC/ARSTRAT is the proponent for space / high altitude capabilities and is responsible for determining and integrating Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) for the Army.

USSTRATCOM, in accordance with CJCSI 3910.01 (reference V.4.) is designated one of three coordinating agencies for J-FFT within DOD. CJCSI 3910.01 directs eight specified tasks to USSTRATCOM. USSTRATCOM SI 534-5 (reference V.6.) and annually published USSTRATCOM operations orders have designated USASMDC/ARSTRAT as the lead USSTRATCOM component command for J-FFT.

In FY12 and FY13 funding for J-FFT was cut because of a RDTE contract being coded as a service contract, these funds were restored in FY14 and FY15 resulting in the perceived increase in funding for FY14 and FY15.

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

	FY 2012	FY 2013	FY 2014
Title: Architecture Development, Wargames and Demonstrations	0.000	5.723	5.779
Articles:		0	
Description: Funding is provided for the following effort			
FY 2013 Plans:			
Plan, develop, and execute architectures and combat development solutions for Army integration of space systems, space control capabilities, missile defense and high altitude systems. Represent Army positions and defend Army equities relative in Joint/ DoD and inter-Service activities; e.g., Executive Agent for Space Program Assessments, etc. Participate and provide support to wargames and experiments where space, high altitude, and missile defense capabilities and technologies can be integrated and evaluated in the most realistic operating environment possible. This is necessary to ensure that space and high altitude			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</i>		PROJECT 990: <i>Space And Missile Defense Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>capabilities gaps are identified and capabilities are correctly represented, so that the Army uses of these capabilities are explored. Develop space modernization strategies and sponsor exploration of future space, high altitude, and missile defense warfighting concepts. The Future Warfare Center (FWC) will continue efforts to enhance the resiliency and effectiveness of critical space-based assets.</p> <p>FY 2014 Plans: Plan, develop, and execute architectures and combat development solutions for Army integration of space systems, space control capabilities, missile defense and high altitude systems. Represent Army positions and defend Army equities relative in Joint/DoD and inter-Service activities; e.g., Executive Agent for Space Program Assessments, etc. Participate and provide support to wargames and experiments where space, high altitude, and missile defense capabilities and technologies can be integrated and evaluated in the most realistic operating environment possible. This is necessary to ensure that space and high altitude capabilities gaps are identified and capabilities are correctly represented, so that the Army's use of these capabilities is explored. Develop space modernization strategies and sponsor exploration of future space, high altitude, and missile defense warfighting concepts. The Future Warfare Center (FWC) will continue efforts to enhance the resiliency and effectiveness of critical space-based assets. Continue JCIDS capability development activities for space superiority, high altitude persistent platforms, nano-satellites and tactical launch systems. Perform force development activities to refine the force design of the AN/TPY-2 FBM radar via a force design update.</p>				
<p>Title: Space and High Altitude System Integration and Experimentation</p> <p>Articles:</p> <p>Description: Funding is provided for the following effort.</p> <p>FY 2012 Accomplishments: Continue experimentation in support of operational responsive space. Complete migration of Space Operations System capabilities to both classified and unclassified Distributed Common Ground System - Army (DCGS-A) variants. The Future Warfare Center will continue efforts to enhance the resiliency and effectiveness of critical space-based assets.</p>		2.421 0	0.000	0.000
<p>Title: Concept Development, Wargames and Demonstrations</p> <p>Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Accomplishments: Continue to plan, develop, and execute concepts and combat development solutions for Army integration of space systems, space control capabilities, missile defense and high altitude systems. Represent Army positions and defend Army equities relative in Joint/DoD and inter-Service activities; e.g., National Security Space Architect (NSSA) Program Assessments, etc. Participate and</p>		4.034 0	0.000	0.000

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</i>		PROJECT 990: <i>Space And Missile Defense Integration</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014	
<p>provide support to all Unified Quest and other wargames and experiments to ensure that space and high altitude capabilities gaps are identified and capabilities are correctly represented, so that the Army use of these capabilities are explored. Develop space modernization strategies and sponsor exploration of future space, high altitude, and missile defense warfighting concepts. Provide integrated force and capability development activities; conduct Joint Capabilities Integration & Development System (JCIDS) activities to document requirements across the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities domains for Space, High Altitude, and Global Missile Defense capabilities; horizontally and vertically integrates capabilities. Develop the materiel requirements and force development for the AN/TPY-2 Forward Based Mode (FBM) Radar via a Capabilities Production Document and a Force Design Update. Develop organizational designs and models for SRC 40 force structure within the Army's force development process. Continue JCIDS capability development activities for space superiority, high altitude persistent platforms and Joint Tactical Ground Station (JTAGS) theater missile warning capabilities.</p> <p>Title: High Energy Laser Technolgy Program Support</p> <p>Description: Funding is provided for the following effort.</p> <p>FY 2013 Plans: Continue to support the Solid State Laser Testbed (SSLT) - Couple the 100 kW laser with the existing Tactical High Energy Laser (THEL) pointer-tracker subsystem and begin the basic lethality program against a variety of static and dynamic targets of interest to the Army, Navy, Air Force and OSD at tactical ranges of interest. Support the initiation of propagation experiments with high power at 1.06μm using the SSLT facility. Support the completion of Option 2 phase of Robust Electric Laser Initiative (RELI) (risk reduction for 100 kW system) and begin Option 1, i.e. the fabrication of 50 kW hardware for integration onboard the High Energy Laser Technology Demonstrator (HELMD) vehicle beginning in 2015. Provide technical support for the integration a COTS 10kW class fiber laser onboard the HELMD platform to demonstrate high power operation of the HELMD beam control system and engage mortars and UAVs. Support risk-reduction activities for future upgrades to higher-power SSL devices. Incorporate adaptive optics into the HELMD to improve performance and increase the range.</p> <p>FY 2014 Plans: Support SSLT operations at High Energy Laser Systems Test Facility (HELSTF) to evaluate 100kW class SSL performance against a variety of static and dynamic targets of interest to the Army, Navy, Air Force and OSD at tactical ranges of interest. Support collection of propagation and lethality data with the SSLT and analyze results for model comparison. Support the development of tactics, techniques, and procedures (TTPs) in support of future fielding of HEL weapon system. Continue supporting the Option 1 RELI program (50 kW) by evaluating and assessing the ruggedized efficient high power laser PDR and CDR.</p>					
		Articles:	0.000	0.785 0	0.770
Title: Joint Friendly Force Tracking (J-FFT) Testbed		3.102	3.368	5.043	

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</i>	PROJECT 990: <i>Space And Missile Defense Integration</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: Funding is provided for the following effort</p> <p>FY 2012 Accomplishments: The J-FFT Testbed will support specific task as directed by STRATCOM. These tasks include integrating new data sources, hardware and software devices, and data services into the J-FFT Mission Management Center (MMC). Continue to develop Friendly Force Tracking FFT capabilities for deployed and collation forces including Afghan National Forces. The Joint Friendly Force Tracking Division coordinates and executes USSTRATCOM-directed FFT tasks in order to assure continuous 24/7 FFT data services support to authorized users to include the Combatant Commands, the Services, agencies, allies, and coalition partners in order to improve their situational awareness (SA), enhance command and control (C2), and reduce fratricide in combat, homeland defense, civil and contingency operations. Additionally the J-FFT will be used to provide special tracking capabilities.</p> <p>FY 2013 Plans: As enhancements are made to network-enabled command and control systems and other systems are integrated into Combat Commanders friendly force tracking requirements the J-FFT Testbed will be used to integrate hardware and software prior to its deployment to the field. The FWC will continue to support development of FFT capabilities for deployed and collation forces. The Joint Friendly Force Tracking Division coordinates and executes USSTRATCOM-directed FFT tasks in order to assure continuous 24/7 FFT data services support to authorized users to include the Combatant Commands, the Services, agencies, allies, and coalition partners in order to improve their situational awareness (SA), enhance command and control (C2), and reduce fratricide in combat, homeland defense, civil and contingency operations.</p> <p>FY 2014 Plans: As enhancements are made to network-enabled command and control systems and other systems are integrated into Combat Commanders friendly force tracking requirements the J-FFT Testbed will be used to integrate hardware and software prior to its deployment to the field. The FWC will continue to support development of FFT capabilities for deployed and coalition forces. The Joint Friendly Force Tracking Division coordinates and executes USSTRATCOM-directed FFT tasks in order to assure continuous 24/7 FFT data services support to authorized users to include the Combatant Commands, the Services, agencies, allies, and coalition partners in order to improve their situational awareness (SA), enhance command and control (C2), and reduce fratricide in combat, homeland defense, civil and contingency operations.</p>	0	0	
Accomplishments/Planned Programs Subtotals	9.557	9.876	11.592

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

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</i>	PROJECT 990: <i>Space And Missile Defense Integration</i>

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

Remarks

D. Acquisition Strategy

Not applicable for this effort.

E. Performance Metrics

Basic research projects lined to operations concepts or needs.
SMDC/ARSTRAT is developing critical enabling technologies.
Legacy or emerging systems have interoperability solutions identified.

F. Major Performer

BAE is under contract to develop software to support integration of new tracking data services into the J-FFT and support special tracking capabilities. This ensures 24/7 J-FFT data is available to support Combatant Commanders as coalition forces and technology change.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603308A: <i>Army Space Systems Integration</i>	PROJECT EB7: <i>Army Space System Enhancement/Integration</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
EB7: <i>Army Space System Enhancement/Integration</i>	-	0.000	0.000	2.000	-	2.000	3.500	4.100	4.200	4.300	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 purpose of the project is to conduct classified research efforts. The details of the efforts may be provided upon request to appropriately cleared individuals.

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

	FY 2012	FY 2013	FY 2014
Title: Classified	0.000	0.000	2.000
Description: The purpose of this project is to conduct classified research			
FY 2014 Plans: classified			
Accomplishments/Planned Programs Subtotals	0.000	0.000	2.000

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv 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	-	16.399	5.054	10.625	-	10.625	20.225	7.150	2.500	2.500	Continuing	Continuing
606: <i>CNTRMN/BARRIER ADV DEV</i>	-	16.399	5.054	10.625	-	10.625	20.225	7.150	2.500	2.500	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

A. Mission Description and Budget Item Justification

This project enables component development of new counter explosive hazard systems that focus on detecting, marking, and neutralizing mines and improvised explosive devices (IED). These capabilities will enhance the effectiveness of the Route Clearance Platoon within the Engineer Company, the Brigade Combat Team as well as other related Army missions.

Autonomous Mine Detection System (AMDS) provides mine and explosive hazards stand-off detection, marking and neutralization capability for the dismounted soldier. AMDS consists of payload modules to be mounted on man-portable unmanned ground vehicles. The payloads are for surface laid and buried threats to include mines and explosive hazards. AMDS will transition from Technical Development to Engineering and Manufacturing Development (EMD) in FY 2013.

The Forward Reconnaissance and Explosive Hazard Detection (FREHD) system will provide a suite of vehicle-mounted capabilities that enable route clearance patrols to achieve higher rates of advance by accurately detecting and adjudicating potential explosive hazards with reduced hazard interrogation time. The system will automatically nominate potential hazards on the move and at standoff distance, and then let route clearance teams decide whether to perform more detailed examinations and identification of those hazards using additional tools within the FREHD suite. FREHD will also provide threat visualization and control capabilities that enable route clearance and allow Explosive Ordnance Disposal (EOD) and related mission personnel to remotely view video feeds of the hazard and remotely control the apparatus. The increased rate of advance will improve route clearance time, while the increased standoff improves force protection. FREHD will begin transition of Advanced Technology Objective efforts from the Science and Technology community, and conduct program initiation activities via a Materiel Development Decision in FY 2013. Subject to timely program initiation and confirmation of technology maturity, FREHD technology development efforts will continue in FY 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv 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	19.596	5.054	5.597	-	5.597
Current President's Budget	16.399	5.054	10.625	-	10.625
Total Adjustments	-3.197	0.000	5.028	-	5.028
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-3.197	-	5.028	-	5.028

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv Dev</i>				PROJECT 606: <i>CNTRMN/BARRIER ADV DEV</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
606: <i>CNTRMN/BARRIER ADV DEV</i>	-	16.399	5.054	10.625	-	10.625	20.225	7.150	2.500	2.500	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

A. Mission Description and Budget Item Justification

This project enables component development of new counter explosive hazard systems that focus on detecting, marking, and neutralizing mines and improvised explosive devices (IED). These capabilities will enhance the effectiveness of the Route Clearance Platoon within the Engineer Company, the Brigade Combat Team as well as other related Army missions.

Autonomous Mine Detection System (AMDS) provides mine and explosive hazards stand-off detection, marking and neutralization capability for the dismounted soldier. AMDS consists of payload modules to be mounted on man-portable unmanned ground vehicles. The payloads are for surface laid and buried threats to include mines and explosive hazards. AMDS will transition from Technical Development to Engineering and Manufacturing Development (EMD) in FY 2013.

The Forward Reconnaissance and Explosive Hazard Detection (FREHD) system will provide a suite of vehicle-mounted capabilities that enable route clearance patrols to achieve higher rates of advance by accurately detecting and adjudicating potential explosive hazards with reduced hazard interrogation time. The system will automatically nominate potential hazards on the move and at standoff distance, and then let route clearance teams decide whether to perform more detailed examinations and identification of those hazards using additional tools within the FREHD suite. FREHD will also provide threat visualization and control capabilities that enable route clearance and allow Explosive Ordnance Disposal (EOD) and related mission personnel to remotely view video feeds of the hazard and remotely control the apparatus. The increased rate of advance will improve route clearance time, while the increased standoff improves force protection. FREHD will begin transition of Advanced Technology Objective efforts from the Science and Technology community, and conduct program initiation activities via a Materiel Development Decision in FY 2013. Subject to timely program initiation and confirmation of technology maturity, FREHD technology development efforts will continue in FY 2014.

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

	FY 2012	FY 2013	FY 2014
Title: AMDS Mission Package Development System	9.448	0.000	0.000
Articles:	0		
Description: AMDS Mission Package Development System			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv Dev</i>		PROJECT 606: <i>CNTRMN/BARRIER ADV DEV</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
AMDS - Build AMDS Detection Systems				
Title: AMDS Platform Integration		3.829	0.000	0.000
		0		
Description: AMDS Platform Integration				
FY 2012 Accomplishments: AMDS Platform Integration				
Title: AMDS Tech Demo, Operational Assessment and Test Report		2.622	0.000	0.000
		0		
Description: AMDS Tech Demo, Operational Assessment/Early User Evaluation and Test Report				
FY 2012 Accomplishments: AMDS - Tech Development, Operational Assessment and Test Report				
Title: AMDS Milestone B Review Preparation		0.500	0.000	0.000
		0		
Description: AMDS Milestone B Review Preparation				
FY 2012 Accomplishments: AMDS Milestone B Review Preparation				
Title: Forward Reconnaissance and Explosive Hazard Detection (FREHD)		0.000	5.054	10.625
			0	
Description: FREHD				
FY 2013 Plans: Prepare for Materiel Development Decision (MDD); Materiel Solution Analysis and Technology Assessment; Milestone A Preparation				
FY 2014 Plans: Transition to Advanced Development				
Accomplishments/Planned Programs Subtotals		16.399	5.054	10.625

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv Dev</i>	PROJECT 606: <i>CNTRMN/BARRIER ADV DEV</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>
• Mine Neutralization and Detection: <i>Mine Neutralization and Detection</i>	65.228	90.861	65.085		65.085	33.218	12.000	4.000	4.000	Continuing	Continuing

Remarks

654808/D415 Mine Neutralization and Detection is the engineering development follow on to this funding line. The above profile represents the total line, not only the follow on tasks within this program.

D. Acquisition Strategy

The Autonomous Mine Detection System (AMDS) is currently a Technology Development effort and will transition to Engineering and Manufacturing Development in FY 2013.

The Acquisition Strategy for the Forward Reconnaissance and Explosive Hazard Detection (FREHD) System will be developed in conjunction with program initiation.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv Dev</i>	PROJECT 606: <i>CNTRMN/BARRIER ADV 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			
Program Management	Various	PM Close Combat Systems:Picatinny, NJ/ Ft Belvoir, VA	8.843	2.643	Sep 2012	1.554		0.691	Dec 2013	-		0.691	Continuing	Continuing	Continuing
Program Management Contractor Support	MIPR	FALCON:Fairfax, VA	1.670	0.193	Jun 2012	-		-		-		-	Continuing	Continuing	Continuing
FREDH Program Management Contractor Support	TBD	TBD:TBD	0.000	-		-		0.250		-		0.250	0.000	0.250	0.000
Subtotal			10.513	2.836		1.554		0.941		0.000		0.941			

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			
AMDS	C/CPFF	NIITEK:Sterling, VA	0.000	2.269	May 2012	-		-		-		-	0.000	2.269	0.000
AMDS	C/CPFF	CRL:Pittsburg, PA	0.000	1.335	Apr 2012	-		-		-		-	0.000	1.335	0.000
AMDS Tech Dev	C/CPFF	Robotics Technology Consortium:Ann Arbor, MI	33.264	-		-		-		-		-	Continuing	Continuing	Continuing
AMDS Other Component Development	IA	Various:Various	4.472	2.863	Apr 2012	-		-		-		-	Continuing	Continuing	Continuing
AMDS Early User Evaluation	TBD	TBD:TBD	0.000	1.278		-		-		-		-	0.000	1.278	0.000
FREHD Tech Development	TBD	TBD:TBD	0.000	-		1.000		7.224		-		7.224	Continuing	Continuing	0.000
Subtotal			37.736	7.745		1.000		7.224		0.000		7.224			

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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 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603619A: Landmine Warfare and Barrier - Adv Dev	PROJECT 606: CNTRMN/BARRIER ADV DEV
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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
AMDS	MIPR	Various:Various	15.805	1.345	Sep 2012	-		-		-		-	Continuing	Continuing	Continuing
AMDS	MIPR	CECOM NVESD:Ft. Belvoir, VA	1.836	2.530	May 2012	-		-		-		-	0.000	4.366	0.000
AMDS	MIPR	Picatinny Arsenal:NJ	1.128	1.406	Apr 2012	-		-		-		-	0.000	2.534	0.000
FREHD	MIPR	Various:TBD	0.000	-		2.500		1.710	Mar 2014	-		1.710	0.000	4.210	0.000
Subtotal			18.769	5.281		2.500		1.710		0.000		1.710			

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
AMDS	MIPR	Various:Various	0.520	0.537	Apr 2012	-		-		-		-	Continuing	Continuing	Continuing
FREHD	TBD	TBD:TBD	0.000	-		-		0.750	Dec 2013	-		0.750	0.000	0.750	0.000
Subtotal			0.520	0.537		0.000		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			67.538	16.399		5.054		10.625		0.000		10.625			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv Dev</i>	PROJECT 606: <i>CNTRMN/BARRIER ADV 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
AMDS Milestone B								■																				
AMDS Preliminary Design Review (PDR)												■																
AMDS Critical Design Review (CDR)																■												
AMDS Milestone C																				■								
FREHD Materiel Development Decision (MDD)								■																				
FREHD Milestone A												■																
FREHD Milestone B																				■								

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603619A: <i>Landmine Warfare and Barrier - Adv Dev</i>	PROJECT 606: <i>CNTRMN/BARRIER ADV DEV</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AMDS Milestone B	4	2013	4	2013
AMDS Preliminary Design Review (PDR)	3	2014	3	2014
AMDS Critical Design Review (CDR)	1	2015	1	2015
AMDS Milestone C	3	2016	3	2016
FREHD Materiel Development Decision (MDD)	4	2013	4	2013
FREHD Milestone A	2	2014	2	2014
FREHD Milestone B	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					R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					PE 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</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	-	4.572	2.725	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
E79: <i>SMOKE/OBSCURANT SYSTEM</i>	-	4.572	2.725	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 - FY 13: Funds realigned to higher priority Army programs.

A. Mission Description and Budget Item Justification

Project supports Screening Obscuration Module (SOM) in the development and improvement of an array of obscurant agents, and devices to improve survivability of the combined armed forces, support extended range capability, complement combined weapon systems, and enhance force effectiveness and combat power. SOM will be man portable with plug and play technology to facilitate quick mounting and dismounted. This program element supports critical management studies, operational assessments, testing, prototyping, and analyses that are conducted on a continuing basis. To ensure that Technology Development efforts are targeted against the emerging threat. US Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection using generated and launched smoke systems.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	4.572	2.725	4.285	-	4.285
Current President's Budget	4.572	2.725	0.000	-	0.000
Total Adjustments	0.000	0.000	-4.285	-	-4.285
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-4.285	-	-4.285

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>				PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</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
E79: <i>SMOKE/OBSCURANT SYSTEM</i>	-	4.572	2.725	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

Not applicable for this item.

A. Mission Description and Budget Item Justification

Project supports Screening Obscuration Module (SOM) in the development and improvement of an array of obscurant agents, and devices to improve survivability of the combined armed forces, support extended range capability, complement combined weapon systems, and enhance force effectiveness and combat power. SOM will be man portable with plug and play technology to facilitate quick mounting and dismounted. This program element supports critical management studies, operational assessments, testing, prototyping, and analyses that are conducted on a continuing basis. To ensure that Technology Development efforts are targeted against the emerging threat. US Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection using generated and launched smoke systems.

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

	FY 2012	FY 2013	FY 2014
Title: SOM Engineering and Modeling			
Articles:	0.374 0	0.000	0.000
Description: Engineering and Modeling for SOM systems.			
FY 2012 Accomplishments: Engineering and Modeling for SOM systems.			
Title: SOM Development.			
Articles:	1.485 0	1.303 0	0.000
Description: SOM Development.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
SOM Development. FY 2013 Plans: SOM Development.			
Title: Test and Evaluation of SOM systems. Articles:	1.241 0	0.450 0	0.000
Description: Test and Evaluation of SOM systems. FY 2012 Accomplishments: Test and Evaluation of SOM systems. FY 2013 Plans: Test and Evaluation of SOM systems.			
Title: SOM Project Management Personnel Articles:	1.472 0	0.972 0	0.000
Description: Project Management FY 2012 Accomplishments: Project Management FY 2013 Plans: Project Management			
Accomplishments/Planned Programs Subtotals	4.572	2.725	0.000

C. Other Program Funding Summary (\$ in Millions)	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> Base	<u>FY 2014</u> OCO	<u>FY 2014</u> Total	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> Complete	<u>Total Cost</u>
• SMOKE/OBSCURANT SYSTEM: <i>Project 200 Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>										0.000	0.000
• Target Defeating System: <i>Project 198 Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>										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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT 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>
Remarks											

D. Acquisition Strategy

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

SOM acquisition strategy is to develop a small smoke generator that degrades the visual through near infrared portion of the Electro-Magnetic Spectrum. SOM program will focus on replacing current smoke pots to provide the Joint Land Forces with a medium area screening obscuration device. The initial increment, Increment 1, will focus on developing a SOM system capable of obscuring the Visual through Near IR wavelengths of the electromagnetic spectrum. Future SOM Increments 2 and 3 will incorporate bi-spectral and multi-spectral effects. The SOM has the capability to quickly produce (less than 15 seconds) medium duration (20 minutes), medium area (11 meters wide x 20 meters length x 5.25 meters height) screening obscuration effects, screening an area equivalent to three times the size of a large combat vehicle. The individual Soldier or team will employ the SOM devices on open and complex terrain; excluding enclosed areas. SOM will be deployed to accomplish the following mission types: avoid observation, defense of a battle position, and assault position.

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 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603627A: Smoke, Obscurant and Target Defeating Sys-Adv Dev				E79: SMOKE/OBSCURANT 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
Project Management Personnel	MIPR	JPM:NBCCA	3.538	1.472	Dec 2011	0.972		-		-		-	Continuing	Continuing	Continuing
Subtotal			3.538	1.472		0.972		0.000		0.000		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
SOM Hardware Development	C/CPPF	JPM NBCCA, APG MD:Edgewood, MD	18.870	1.485	Dec 2011	1.303		-		-		-	Continuing	Continuing	Continuing
Subtotal			18.870	1.485		1.303		0.000		0.000		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 Modeling and Studies SOM	MIPR	Edgewood Chemical Biological Center:Edgewood, Md	1.964	0.374	Dec 2011	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			1.964	0.374		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 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
SOM Test & Evaluation	MIPR	OGA Various:Various	0.000	1.241	Dec 2011	0.450		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	1.241		0.450		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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</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
Project Cost Totals	24.372	4.572	2.725	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</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

SOM Developmental Testing #1	████████																							
SOM Operational Assessment #1					████																			
SOM Corrective Actions/Redesign					████████████████																			
SOM IPR									████															

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SOM Developmental Testing #1	2	2012	3	2012
SOM Operational Assessment #1	4	2012	4	2012
SOM Corrective Actions/Redesign	1	2013	4	2013
SOM IPR	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</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	-	40.314	30.560	30.612	-	30.612	7.083	0.000	0.000	0.000	Continuing	Continuing
652: <i>M829E4 120mm Cartridge</i>	-	40.305	30.560	19.812	-	19.812	0.000	0.000	0.000	0.000	Continuing	Continuing
656: <i>FCS Mounted Combat System (MCS) Ammunition</i>	-	0.009	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
694: <i>Medium Caliber Ammunition</i>	-	0.000	0.000	10.800	-	10.800	7.083	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: \$10.800M increase in Project 694 is for the Medium Caliber Target Practice Day/Night/Thermal (TP D/N/T) cartridge program.

A. Mission Description and Budget Item Justification

The Direct Fire Advanced Technology (DFAT) Program Element (PE) encompasses a comprehensive program to develop, rapidly transition to production, and field advanced tank, medium and small caliber munitions. These programs will ensure continued battlefield overmatch and lethality of U.S. maneuver forces despite worldwide development and proliferation of enhanced armored vehicle protection technologies. To achieve this, DFAT will identify and develop promising technologies through competitive development and streamlined acquisition procedures. All ammunition development funds within this PE are managed to facilitate transitions between phases, avoid administrative delays, and focus resources on the most promising areas.

The M829E4 cartridge is an unguided, direct fire, Abrams delivered Line of Sight (LOS) munition that will provide fast response lethality to rapidly destroy threat targets with Explosive Reactive Armor (ERA) and Active Protection Systems (APS) in the close fight from 0-2km (T) and to 0-4km (O). The M829E4 will be compatible with the 120mm Current Force Abrams Main Battle Tank. FY 2011 M829E4 Cartridge funding supported the completion of Engineering and Manufacturing Development (EMD) Phase I and the initiation of Phase II. FY 2012 funding supported design finalization, design verification, testing and fabrication of Design, Test and Evaluation hardware and beginning of testing. FY 2013 features building of test hardware for final qualification testing. FY 2014 supports hardware and performance test, conducting mandated Live Fire Testing & Evaluation (LFT&E) and staffing of Milestone C.

In FY 2014 the Target Practice Day/ Night/ Thermal (TP D/N/T) cartridge is a 40mm grenade training cartridge. The Low Velocity variant is for training with the M203/ M320 grenade launchers and the High Velocity variant is for training with the Mk19 grenade machine gun. Both of these cartridges will provide the War Fighter with a non dud producing, environmentally friendly training cartridge which replicates the impact signature of respective tactical ammunition and can be seen day or night, by the unaided eye or through night vision and thermal weapon sights.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</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	40.314	30.560	19.812	-	19.812
Current President's Budget	40.314	30.560	30.612	-	30.612
Total Adjustments	0.000	0.000	10.800	-	10.800
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	10.800	-	10.800

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 652: <i>M829E4 120mm Cartridge</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
652: <i>M829E4 120mm Cartridge</i>	-	40.305	30.560	19.812	-	19.812	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 M829E4 cartridge is an Abrams delivered Line of Sight (LOS) munition that will provide capability for the current force Armored Brigade Combat Team's (ABCT) commander to conduct decisive operations and destroy current and future enemy Main Battle Tanks (MBTs) equipped with Explosive Reactive Armor (ERA) and Active Protective System (APS) at ranges from 0-2km (T) and 0-4km (O). The M829E4 equips ABCT commanders with a unique capability which will increase the ABCT's lethality and ability to seize the initiative during unified land operations. After a Engineering and Manufacturing Development (EMD) Phase I competitive shoot off in FY 2011 ATK was awarded the option to continue with Phase II until its conclusion in FY 2014. FY 2012 supported the continuation of Phase II of the M829E4 cartridge. FY 2013 funding supports design finalization, design verification, fabrication and testing of Developmental Test and Evaluation (DT&E) hardware. The full performance of the M829E4 is obtained with an Abrams equipped Ammunition Data Link breech modification. FY 2014 supports conducting hardware and performance testing, mandated Live Fire Test & Evaluation (LFT&E) and completion of Milestone C.

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

	FY 2012	FY 2013	FY 2014
Title: Phase II EMD	28.726	20.500	9.900
Articles:	0	0	
Description: Funding is provided for the following effort:			
FY 2012 Accomplishments: Continued Phase II of EMD in which the design was optimized and a preliminary Technical Data Package was (TDP) established. The design was further tested, and refined. Process maps and TDP documentation were initiate. Some components for a Design Evaluation Test (DET) were fabricated and DT&E test hardware/ components was procured.			
FY 2013 Plans: Continuing Phase II of EMD, the design will be finalized, tested and evaluated to insure all requirements are met/ exceeded. Cartridges will be fabricated for DT&E testing, operational tests and live fire testing. A Technical Data Package (TDP) will be revised and a detailed specification shall be assembled. Production manufacturing fixtures and subsystem test equipment will be established and qualified			
FY 2014 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>		PROJECT 652: <i>M829E4 120mm Cartridge</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Continue and complete DT&E coordination and oversight, culminating at Milestone C. This includes completing the delivery of DT&E hardware and performance test, preparing Milestone C & TC-STD documentation, conducting performance analysis modeling and simulation, TDP review and staffing. Staff Milestone C documentation and build cartridges with alternate sabot material. Generate fire control solution for Abrams M1A2 SEP V2 integration, transfer and demil any residual R&D hardware on the program. Final R&D Depleted Uranium (DU) waste removal and disposal will take place.				
<p>Title: Design Evaluation Test</p> <p>Description: Funding is provided for the following effort:</p> <p>FY 2012 Accomplishments: Design Evaluation Test (DET) is an interim test of the finalized design prior to the build of the DT&E cartridges. This includes the test and analysis activities leading to DT&E. Analysis includes complete systems analysis with the use of modeling and simulation tools. DET is a risk reduction test to quantify performance of the design prior to finalizing the design at a Critical Design review (CDR) and to procure long lead items to support DET.</p>		<p>Articles:</p> <p>4.175 0</p>	<p>0.000</p>	<p>0.000</p>
<p>Title: Developmental Test & Evaluation (DT&E)</p> <p>Description: Funding is provided for the following effort:</p> <p>FY 2012 Accomplishments: The DT&E covers the build and test at the conclusion of EMD. The capability is demonstrated and performance against the performance specification. The data and evaluation of this test support Milestone C and Type Classified - Standard (TC-STD) decisions. Documentation for these milestones will be generated and compiled. Tests consist of a battery of safety and performance tests to assure Army requirements are met/ exceeded. During FY 2012 the planning and manufacturing of special test fixtures & equipment was fabricated/ procured for testing and subsequent qualification.</p> <p>FY 2013 Plans: The Development Test & Evaluation (DT&E) is the testing and analysis at the conclusion of EMD. A single design will undergo a battery of tests in which the capability is proven/ demonstrated, performance quantified. This covers the Test and Evaluation, the analysis of the results and the documentation that supports Milestone C and the TC-STD . Testing includes safety, survivability, armor testing, insensitive munitions, ballistic testing, noise, toxic fumes, and terminal impact dispersion/ accuracy tests. This effort also includes the live fire tests, user excursion tests and Stationary Ammunition accuracy testing.</p> <p>FY 2014 Plans:</p>		<p>Articles:</p> <p>6.130 0</p>	<p>10.060 0</p>	<p>9.912</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 652: <i>M829E4 120mm Cartridge</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continue and complete DT&E integrated testing with Abrams. Conduct single shot ammunition accuracy test and conduct the mandated Live Fire Testing & Evaluation (LFT&E). At the culmination of integrated testing, staff Milestone C request and assemble TC-STD documentation.			
Title: FY12 SBIR/STTR and FFRDC reductions	1.274	0.000	0.000
Articles:	0		
Description: FY12 SBIR/STTR and FFRDC reductions			
FY 2012 Accomplishments: FY12 SBIR/STTR and FFRDC reductions			
Accomplishments/Planned Programs Subtotals	40.305	30.560	19.812

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> Base	<u>FY 2014</u> OCO	<u>FY 2014</u> Total	<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>
• M829E4: <i>M829E4</i>			30.503		30.503	37.200	37.834	38.478	33.040	Continuing	Continuing

Remarks

D. Acquisition Strategy

The M829E4 cartridge is at Technology Readiness Level 6 (TRL6). The Milestone B Decision was obtained in 4Q FY 2009, and the program entered Engineering and Manufacturing Development (EMD) in FY 2010. EMD consists of two phases; the Phase I contract was awarded in 2Q FY 2010 and the Phase II contract was awarded in 3Q FY 2011. During Phase I (15 months), the Government awarded two separate Cost Plus Fixed Fee (CPFF) contracts culminating in a demonstration test and competitive source selection to down select to one contractor for the 31 month Cost Plus Incentive Fee (CPIF) Phase II. The down select was based on the demonstrated performance of the cartridge design, proposed systems engineering and management approach for Phase II, and the total program cost estimate for each contractor at the time of the demonstration test. ATK was awarded the option to continue EMD Phase II until its conclusion in FY 2014. Upon successful completion of Milestone C, a Low Rate Initial Production (LRIP) option will be awarded to ATK in 3Q FY 2014. The contract also contains options for two additional production years. All production options are Firm Fixed Price (FFP).

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 652: <i>M829E4 120mm Cartridge</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			
FY12 SBIR/STTR and FFRDC reductions	FFRDC	Picatinny Arsenal: NJ	0.000	1.274		-		-		-		-	0.000	1.274	0.000
Subtotal			0.000	1.274		0.000		0.000		0.000		0.000	0.000	1.274	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			
ATK Phase II	C/CPHF	ATK: Minnesota	102.500	28.726		20.500		8.900		-		8.900	Continuing	Continuing	Continuing
PM-MAS	MIPR	PM-MAS Picatinny Arsenal: NJ	2.930	1.000		1.000		1.000		-		1.000	Continuing	Continuing	Continuing
GD-OTS Phase 1	C/CPFF	GD-OTS: St. Petersburg, FL	2.068	-		-		-		-		-	0.000	2.068	0.000
ATK Phase 1	C/CPFF	ATK: Minnesota	5.254	-		-		-		-		-	0.000	5.254	0.000
Subtotal			112.752	29.726		21.500		9.900		0.000		9.900			

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			
ARDEC	MIPR	Picatinny: New Jersey	8.432	2.400		2.200		2.400		-		2.400	Continuing	Continuing	Continuing
Subtotal			8.432	2.400		2.200		2.400		0.000		2.400			

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			
Aberdeen Proving Ground	MIPR	APG: Aberdeen, MD	5.860	2.000		1.960		2.100		-		2.100	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 652: <i>M829E4 120mm Cartridge</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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
YPG	MIPR	YUMA:YUMA, AZ	6.321	1.921		2.100		3.412		-		3.412		Continuing	Continuing	Continuing
A TEC	MIPR	A TEC:Aberdeen, MD	0.300	0.100		0.200		0.100		-		0.100		Continuing	Continuing	Continuing
Watervliet	MIPR	Watervliet:Troy, NY	0.534	0.334		0.100		-		-		-		0.000	0.968	0.000
JMC	MIPR	JMC:Rock Island, IL	1.350	0.750		1.000		0.400		-		0.400		Continuing	Continuing	Continuing
Army Research Lab	MIPR	ARL:Aberdeen, Maryland	7.014	1.800		1.500		1.500		-		1.500		Continuing	Continuing	Continuing
Subtotal			21.379	6.905		6.860		7.512		0.000		7.512				
Project Cost Totals			142.563	40.305		30.560		19.812		0.000		19.812				

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 652: <i>M829E4 120mm Cartridge</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
Design Evaluation Testing (DET) Preperation	██████████																											
Design Evaluation Testing (DET)					██████████																							
Developmental Test & Evaluation (DT&E) Preperation					██████████																							
Developmental Test & Evaluation (DT&E)									██████████																			
Milestone 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 652: <i>M829E4 120mm Cartridge</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design Evaluation Testing (DET) Preperation	2	2012	2	2013
Design Evaluation Testing (DET)	3	2013	4	2013
Developmental Test & Evaluation (DT&E) Preperation	4	2012	3	2013
Developmental Test & Evaluation (DT&E)	4	2013	2	2014
Milestone C	3	2014	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 656: <i>FCS Mounted Combat System (MCS) Ammunition</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
656: <i>FCS Mounted Combat System (MCS) Ammunition</i>	-	0.009	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 Advanced Multi Purpose (AMP) program is a direct fire line of sight 120mm large caliber munition to be developed for the Abrams Main Battle Tank. It has three modes of operation including point detonate, delay and airburst. AMP is the material solution for breaching reinforced concrete walls and defeating Anti Tank Guided Missile (ATGM) teams from 50m to 2000m (T) and 50m to 4500m (O), a validated gap that cannot currently be met with existing stockpiled ammunition. The funding in FY 2012 studied the integration implications with the Abrams Tank. Project no longer has funding.

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

	FY 2012	FY 2013	FY 2014
Title: PM-MAS	0.009	0.000	0.000
Articles:	0		
Description: Funding is provided for the following effort.			
FY 2012 Accomplishments: The funding in FY12 will study the integration implications with the Abrams Tank.			
Accomplishments/Planned Programs Subtotals	0.009	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

The funding in FY12 will study the integration implications with the Abrams Tank.

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 4: Advanced Component Development & Prototypes (ACD&P) R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition PROJECT 656: FCS Mounted Combat System (MCS) Ammunition

Table with columns: Product Development (\$ in Millions), Contract Method & Type, Performing Activity & Location, 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. Includes rows for PM-MAS and Project Cost Totals.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 694: <i>Medium Caliber Ammunition</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
694: <i>Medium Caliber Ammunition</i>	-	0.000	0.000	10.800	-	10.800	7.083	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 Target Practice Day/ Night/ Thermal (TP D/N/T) cartridges are 40mm grenade training cartridges. The low velocity variant is for training with the M203/M320 grenade launchers and the high velocity variant is for training with the Mk19 grenade machine gun. Both of these cartridges will provide the War Fighter with a non dud producing, environmentally friendly training cartridge which replicates the impact signature of respective tactical ammunition and can be seen day or night, by the unaided eye or through night vision devices and thermal weapon sights. The program will carry competitive prototypes for each cartridge variant through the Engineering Manufacturing Development phase. In FY 2014 a competition will be held to select the EMD contractors. Afterwards a preliminary design review will be held. Advanced prototypes will be built and tested.

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

	FY 2012	FY 2013	FY 2014
Title: Target Practice Day/ Night/ Thermal cartridges.	0.000	0.000	10.800
Description: The Target Practice Day/ Night/ Thermal (TP-D/N/T) cartridges are 40mm grenade training cartridges.			
FY 2014 Plans: FY 2014 work will include a competitive down select. Afterwards a preliminary design review will be held. Signature materials will be matured to balance performance and competing requirements. Modeling and Simulation (M&S) of candidate airframe designs will feed airframe development, propulsion design, and ballistic integration testing of integrated signature material module. Integrated design will be evaluated at first Cartridge Integration Test (CIT) to verify and validate technical maturity progression.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	10.800

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</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>
• Target Practice Day/ Night/ Thermal: <i>Target Practice Day/ Night/ Thermal cartridges</i>			40.466		40.466	57.221	57.726	60.833	51.761	0.000	268.007

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 694: <i>Medium Caliber Ammunition</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 Target Practice Day/ Night/ Thermal cartridges will be developed through a competitive Engineering and Manufacturing Development (EMD) program. The program will develop both High Velocity (HV) and Low Velocity (LV) variants concurrently to reduce overall acquisition costs. Both variants utilize the same critical technologies, making concurrent acquisitions a logical alternative. As part of the EMD source selection, a shoot-off will be conducted to evaluate potential designs. Within funding constraints multiple contractor designs for the HV cartridge and for the LV cartridge will be awarded EMD contracts in the 2QTR FY 2014 with Milestone C scheduled for 1QTR FY 2016. The contracts will contain options for LRIP and production. The strategy is flexible and prepared to award production options early if the contractor(s) complete the development early. The Army will attempt to negotiate for the data rights so long term production can be produced to a single design for the HV and LV variants.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 694: <i>Medium Caliber Ammunition</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			
Contractor 1 Low Velocity	C/FFP	TBD:TBD	0.000	-		-		1.898		-		1.898	0.000	1.898	0.000
Contractor 2 Low Velocity	C/FFP	TBD:TBD	0.000	-		-		1.898		-		1.898	0.000	1.898	0.000
Contractor 1 High Velocity	C/FFP	TBD:TBD	0.000	-		-		1.898		-		1.898	0.000	1.898	0.000
Contractor 2 High Velocity	C/FFP	TBD:TBD	0.000	-		-		1.898		-		1.898	0.000	1.898	0.000
PM-MAS	MIPR	Picatinny Arsenal:NJ	0.000	-		-		0.561		-		0.561	0.000	0.561	0.000
Subtotal			0.000	0.000		0.000		8.153		0.000		8.153	0.000	8.153	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			
ARDEC	MIPR	Picatinny Arsenal:NJ	0.000	-		-		1.006		-		1.006	0.000	1.006	0.000
Subtotal			0.000	0.000		0.000		1.006		0.000		1.006	0.000	1.006	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			
APG	MIPR	APG:Aberdeen, MD	0.000	-		-		1.514		-		1.514	0.000	1.514	0.000
A TEC	MIPR	A TEC:Aberdeen, MD	0.000	-		-		0.127		-		0.127	0.000	0.127	0.000
Subtotal			0.000	0.000		0.000		1.641		0.000		1.641	0.000	1.641	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	0.000	10.800	0.000	10.800	0.000	10.800	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 694: <i>Medium Caliber Ammunition</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
Bid Sample Testing									■																			
EMD Contract Award											■																	
Engineering Manufacturing Development											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Preliminary Design Review											■																	
Cartridge Integration Test Phase 1											■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
Cartridge Integration Test Phase 2															■													
Critical Design Review															■													
Developmental Test & Evaluation															■	■	■	■	■	■	■	■	■	■	■	■	■	
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 694: <i>Medium Caliber Ammunition</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Bid Sample Testing	1	2014	1	2014
EMD Contract Award	2	2014	2	2014
Engineering Manufacturing Development	1	2014	1	2016
Preliminary Design Review	3	2014	3	2014
Cartridge Integration Test Phase 1	4	2014	1	2015
Cartridge Integration Test Phase 2	3	2015	3	2015
Critical Design Review	3	2015	3	2015
Developmental Test & Evaluation	3	2015	1	2016
MS-C	1	2016	1	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</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	-	62.343	14.347	49.989	-	49.989	58.600	57.400	40.000	30.000	Continuing	Continuing
C03: <i>Interim Armored Vehicle (IAV) Family</i>	-	21.779	14.347	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
C51: <i>STRYKER MODERNIZATION</i>	-	40.564	0.000	49.989	-	49.989	58.600	57.400	40.000	30.000	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 (PE) supports the development of the Stryker Family of vehicles (FOV) in two projects:

The Interim Amored Vehicle Family Project (C03) supports the use of the common platform/common chassis design reducing requirements for repair parts and logistics support in the area of operations. Funding in this project will continue to address Overseas Contingency Operations (OCO), survivability, Operational Needs Statement (ONS) issues.

Engineering Change Proposal (ECP) (C51), will enable the Stryker FOV to host the future network without further degrading vehicle performance. The upgrade will increase available electrical power while ensuring adequate mechanical power, weight margin, and cooling. Combined with an in-vehicle network, this will ensure the FOV can host the future network while retaining its protection and mobility.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	64.408	14.347	5.820	-	5.820
Current President's Budget	62.343	14.347	49.989	-	49.989
Total Adjustments	-2.065	0.000	44.169	-	44.169
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.065	-			
• Other Adjustments 1	-	-	44.169	-	44.169

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>	PROJECT C03: <i>Interim Armored Vehicle (IAV) Family</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
C03: <i>Interim Armored Vehicle (IAV) Family</i>	-	21.779	14.347	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

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Interim Armored Vehicle (IAV) Family Project (C03) supports the development of the Stryker Family of Vehicles (FOV) consisting of 10 variants in the flat bottom configuration. The National Military Strategy requires an Army that is rapidly deployable and strategically responsive across the full spectrum of operations. The Stryker Brigade Combat Team encompasses capabilities and characteristics that are needed but were not available until the first SBCT was declared operationally capable. The Stryker enables the Army to respond immediately to urgent operational requirements. Funding in this project will continue to address survivability enhancements and Operational Needs Statement (ONS) issues.

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

	FY 2012	FY 2013	FY 2014
Title: Development Engineering	20.892	5.424	0.000
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2012 Accomplishments: Undergo development and engineering for integration of Targeting Under Armor for the Stryker FSV which includes Sensor Package Vendor Source Selection and initial RWS Integration analysis.			
FY 2013 Plans: Undergo development and engineering for integration of Targeting Under Armor for the Stryker FSV which includes Integration design, Logistic design, hardware procurement and prototype vehicle build and test.			
Title: Government Engineering and Program Management	0.517	0.672	0.000
Articles:	0	0	
Description: Funding is provided for the following effort			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>	PROJECT C03: <i>Interim Armored Vehicle (IAV) Family</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> Funding for Government Systems Engineering and Program Management which includes labor, travel, training, supplies equipment.</p> <p><i>FY 2013 Plans:</i> Funding for Government Systems Engineering and Program Management which includes labor, travel, training, supplies and equipment.</p>			
<p><i>Title:</i> Contractor Support to Test</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Funding is provided for:</p> <p><i>FY 2013 Plans:</i> Contractor Support to TUA testing</p>	0.000	1.293 0	0.000
<p><i>Title:</i> Government Test and Evaluation</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Funding is provided for the following effort</p> <p><i>FY 2012 Accomplishments:</i> Government TUA test Execution</p> <p><i>FY 2013 Plans:</i> Government TUA test execution</p>	0.370 0	6.958 0	0.000
Accomplishments/Planned Programs Subtotals	21.779	14.347	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
• G85100: <i>Stryker Vehicle (G85100)</i>	606.984	286.818	374.100		374.100	479.176	185.131			2,541.543	4,473.752
• GM0100: <i>Stryker MOD (GM0100)</i>	51.497	60.881	20.522		20.522	69.686	66.792	383.879	477.000	466.065	1,596.322
• GE0180: <i>Spares and Repair Parts (WTCV) (GE0180)</i>	99.624	31.217								211.066	341.907

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK</i> <i>ARMAMENT SYSTEM (ATAS)</i>	PROJECT C03: <i>Interim Armored Vehicle (IAV) Family</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

A Full-Rate Production Decision review for the Nuclear/Biological/Chemical Reconnaissance Vehicle (NBCRV) was completed in 1QFY12. Stryker Mod (GM0100) in FY 17 consists of \$55.000 million for modifications and \$328.879 million for ECP retrofits, FY 18 consists of \$65.000 million for modifications and \$412.000 million for ECP retrofits.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>	PROJECT C03: <i>Interim Armored Vehicle (IAV) Family</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 (PMO) - Base (C03)	Various	TACOM,MI	55.755	0.517		0.672		-		-		-	0.000	56.944	0.000
Subtotal			55.755	0.517		0.672		0.000		0.000		0.000	0.000	56.944	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			
Stryker Development/Engineering	Various	GDLS:MI	436.319	19.624		-		-		-		-	0.000	455.943	0.000
Targeting Under Armor Development /Engineering	Various	GDLS:MI	0.000	1.268	Sep 2012	5.424	Sep 2013	-		-		-	0.000	6.692	0.000
Subtotal			436.319	20.892		5.424		0.000		0.000		0.000	0.000	462.635	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			
Targeting Under Armor Testing	Various	Various Test Centers:Multiple	0.000	0.370		6.958		-		-		-	0.000	7.328	0.000
Stryker Development Testing	Various	Various Test Centers:Multiple	202.893	-		-		-		-		-	0.000	202.893	0.000
NBCRV Operational Test and Evaluation	Various	Various Test Centers:Various	5.177	-		-		-		-		-	0.000	5.177	0.000
SRAT Testing	Various	Various Test Centers:Various	8.572	-		-		-		-		-	0.000	8.572	0.000
Contractor Support to Test	Various	GDLS:MI	30.829	-		1.293		-		-		-	0.000	32.122	0.000
Subtotal			247.471	0.370		8.251		0.000		0.000		0.000	0.000	256.092	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>				PROJECT C03: <i>Interim Armored Vehicle (IAV) Family</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	739.545	21.779		14.347		0.000	0.000	0.000	0.000	775.671	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>				PROJECT C51: <i>STRYKER MODERNIZATION</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
C51: <i>STRYKER MODERNIZATION</i>	-	40.564	0.000	49.989	-	49.989	58.600	57.400	40.000	30.000	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

Stryker Modernization (C51) will enable the Stryker FOV to host the future network without further degrading vehicle performance. The upgrade will increase available electrical power while ensuring adequate mechanical power, weight margin, and cooling. Combined with an in-vehicle network, this will ensure the FOV can host the future network while retaining its protection and mobility. Funding in FY14-18 supports continued development engineering efforts on the Stryker Engineering Change Proposal (ECP).

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

	FY 2012	FY 2013	FY 2014
Title: Stryker ECP Development (Engineering / Prototypes)	37.414	0.000	46.036
Articles:	0		
Description: Funding is provided for the following efforts			
FY 2012 Accomplishments: Development engineering for the Stryker ECP upgrades for engine, alternator and suspension on DVH variants and the in-vehicle network on both DVH and FB variants to allow integration of the future Network without additional degradation to overall system performance.			
FY 2014 Plans: Continuing development engineering for the Stryker ECP upgrades and start procuring prototypes for the engine, alternator and suspension on DVH variants and the in-vehicle network on both DVH and FB variants.			
Title: Training Device Updates	0.000	0.000	1.162
Description: Funding is provided for the following effort			
FY 2014 Plans: Begin the development and design of training device upgrades to reflect the ECP upgrades to the vehicles.			
Title: Government Engineering and Program Management	3.150	0.000	2.791
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>	PROJECT C51: <i>STRYKER MODERNIZATION</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 2012 Accomplishments: Continuing Government Systems Engineering and Program Management which includes labor, travel, training, supplies and equipment.</p> <p>FY 2014 Plans: Continuing Government Systems Engineering and Program Management which includes labor, travel, training, supplies and equipment.</p>			
Accomplishments/Planned Programs Subtotals	40.564	0.000	49.989

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>
• G85100: <i>Stryker Vehicle (G85100)</i>	606.984		374.100		374.100	479.176	185.131			2,541.543	4,186.934
• GM0100: <i>Stryker MOD (GM0100)</i>	51.497		20.522		20.522	69.686	66.792	383.879	477.000	466.065	1,535.441
• GE0180: <i>Stryker Spares and Repair Parts (GE0180)</i>	99.624									211.066	310.690

Remarks
The Phase III (Production) decision point associated with the Stryker ECP will be the first point at which WTCV funds will be required. Currently, funding begins in FY17 for this effort. Stryker MOD (GM0100) in FY17 consists of \$55.000 million for modifications and \$328.879 million for ECP retrofits, FY18 consists of \$65.000 million for modifications and \$412.000 million for ECP retrofits.

D. Acquisition Strategy
The Stryker upgrade effort is to buy back the vehicle space, weight, and power margin lost due to the addition of numerous kits in response to nine years of war (15-combat rotations & 27 million total miles), in order to allow integration of the future network (as directed by VCSA in August 2011) without further degrading the performance of the platform. In May 2012, Phase I (Development) of the Stryker ECP program was approved, permitting preliminary design and integration efforts on both the Flat Bottom (FB) and Double-V Hull (DVH) variants. The Phase II (Continued Engineering Design/Logistics Design/Prototype Build/Test) decision is scheduled for 14 March 2013. This decision will select what technologies will go forward to Preliminary Design Review (PDR) and the variants to which the technologies will be applied (i.e., Flat Bottom and/or Double V Hull). Based on the Phase II decision, development engineering will continue to support Preliminary Design Review (PDR), prototype build, and test and evaluation. The Phase III (Production) decision point will determine the production requirements of the technologies selected in Phase II.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK</i> <i>ARMAMENT SYSTEM (ATAS)</i>	PROJECT C51: <i>STRYKER MODERNIZATION</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>	PROJECT C51: <i>STRYKER MODERNIZATION</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 (PMO)	Various	TACOM:MI	2.026	3.150		-		2.791		-		2.791	21.492	29.459	0.000
Subtotal			2.026	3.150		0.000		2.791		0.000		2.791	21.492	29.459	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			
Stryker ECP Development	Various	GDLS:MI	255.283	37.414		-		46.036	Apr 2014	-		46.036	60.189	398.922	0.000
Training Device Updates	PO	PEO STRI:FL	0.000	-		-		1.162		-		1.162	10.798	11.960	0.000
Subtotal			255.283	37.414		0.000		47.198		0.000		47.198	70.987	410.882	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			
Stryker ECP Testing	Various	Various Test Centers:Various	0.905	-		-		-		-		-	61.724	62.629	0.000
Contractor Support to Test	SS/TBD	GDLS, MI:Various	0.000	-		-		-		-		-	31.175	31.175	0.000
Test Vehicle Refurbishment	SS/TBD	GDLS, MI:Various	0.000	-		-		-		-		-	26.990	26.990	0.000
Subtotal			0.905	0.000		0.000		0.000		0.000		0.000	119.889	120.794	0.000

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
	258.214	40.564	0.000	49.989	0.000	49.989	212.368	561.135	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK ARMAMENT SYSTEM (ATAS)</i>	PROJECT C51: <i>STRYKER MODERNIZATION</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
Army System Acquisition Review Counsel (ASARC) Phase I	■																											
Army System Acquisition Review Counsel (ASARC) Phase II					■																							
Stryker Engineering Change Proposal (ECP)									■				■				■				■							
ECP Preliminary Design Review					■																							
ECP Critical Design Review									■																			
Army System Acquisition Review Counsel (ASARC) Phase III																					■							

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603653A: <i>ADVANCED TANK</i> <i>ARMAMENT SYSTEM (ATAS)</i>	PROJECT C51: <i>STRYKER MODERNIZATION</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Army System Acquisition Review Counsel (ASARC) Phase I	2	2012	2	2012
Army System Acquisition Review Counsel (ASARC) Phase II	2	2013	2	2013
Stryker Engineering Change Proposal (ECP)	1	2014	4	2018
ECP Preliminary Design Review	4	2013	4	2013
ECP Critical Design Review	3	2014	3	2014
Army System Acquisition Review Counsel (ASARC) Phase III	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</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	-	13.720	29.933	6.703	-	6.703	14.468	12.794	11.011	11.611	Continuing	Continuing
610: <i>Food Adv Development</i>	-	3.720	4.014	5.188	-	5.188	5.213	4.892	4.974	5.574	Continuing	Continuing
C08: <i>Rapid Equipping Force</i>	-	10.000	25.919	1.515	-	1.515	9.255	7.902	6.037	6.037	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: FY14 OCO in the amount of \$26625 supports PEO Soldier. Not reporting OCO for this budget cycle.

A. Mission Description and Budget Item Justification

This program element supports component development and prototyping for organizational equipment, improved individual clothing and equipment that enhance Soldier battlefield effectiveness, survivability, and sustainment. This program element also supports the component development and prototyping of joint service food and combat feeding equipment designed to reduce logistics burden.

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	13.903	29.933	11.051	-	11.051
Current President's Budget	13.720	29.933	6.703	-	6.703
Total Adjustments	-0.183	0.000	-4.348	-	-4.348
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.183	-	-4.348	-	-4.348

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT 610: <i>Food Adv 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
610: <i>Food Adv Development</i>	-	3.720	4.014	5.188	-	5.188	5.213	4.892	4.974	5.574	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 provides for the advanced component development and prototyping of joint service food and combat feeding equipment designed to reduce the logistics burden and Operation and Support (O&S) costs of subsistence support to service personnel. Project supports development of rations and rapidly deployable field food service equipment. Project conducts demonstration and validation of improved subsistence and subsistence support items used to enhance soldier effectiveness and quality of life in all four Services, as part of an integrated Department of Defense (DoD) Food Research, Development, Test, Evaluation and Engineering Program. The Program is reviewed and validated twice annually by the DoD Combat Feeding Research and Engineering Board (CFREB) as part of the Joint Service Food Program. This project develops critical enablers that support the Joint Future Force Capabilities and the Joint expeditionary mindset by maintaining readiness through fielding and integrating new equipment. This equipment enhances the field soldier's well-being and provides the soldier with usable equipment, in addition to reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, 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
<p>Title: Solid Waste Remediation</p> <p style="text-align: right;">Articles:</p> <p>Description: Provides environmentally friendly incineration system for solid waste.</p> <p>FY 2012 Accomplishments: Evaluate solid waste remediation hardware/systems and transition into System Development and Demonstration.</p>	0.100 0	0.000	0.000
<p>Title: Fielded Individual Ration Improvement Project (FIRIP)</p> <p style="text-align: right;">Articles:</p> <p>Description: Continuous product improvement project for the Meal, Ready to Eat (MRE)</p> <p>FY 2012 Accomplishments: Continue to identify suitable COTS/NDI candidate items and conduct in-house product development of food components for fielded individual operational rations (MRE 2015 DOP) to enhance acceptability, increase consumption and improve nutritional</p>	0.845 0	0.900 0	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>		PROJECT 610: <i>Food Adv Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>intake. Conduct pilot scale in-house production to support engineering design, technology insertion, and producibility. Work with vendors and assemblers as needed to ensure feasibility and technology transition. Develop, integrate, and validate state-of-the-art science and technology, food processing and primary/secondary packaging innovations into individual ration platforms to increase operational effectiveness, functionality and improve logistics. processing and packaging to introduce targeted component items into individual ration platforms for enhanced acceptability, nutrition and performance.</p> <p>FY 2013 Plans: Continue to conduct in-house product development of food components and identify suitable COTS/NDI candidate items for fielded individual operational rations (e.g., Meal, Ready-to-Eat 2016 date of pack (DOP)) to enhance Warfighter acceptability, increase consumption and improve nutritional intake; Conduct pilot scale in-house production to support engineering design, technology insertion, and commercial producibility; Develop, integrate and validate state-of-the-art science and technology, food processing and primary/secondary packaging innovations into individual ration platforms to increase operational effectiveness; Optimize food component processing and packaging to introduce targeted items/capabilities into individual ration platforms for enhanced acceptability, nutrition and performance; Transition to 6.5 for testing.</p> <p>FY 2014 Plans: Continue to conduct in-house product development of food components and identify suitable COTS/NDI candidate items for fielded individual operational rations (e.g., Meal, Ready-to-Eat 2016 date of pack (DOP)) to enhance Warfighter acceptability, increase consumption and improve nutritional intake; Conduct pilot scale in-house production to support engineering design, technology insertion, and commercial producibility; Develop, integrate and validate state-of-the-art science and technology, food processing and primary/secondary packaging innovations into individual ration platforms to increase operational effectiveness; Optimize food component processing and packaging to introduce targeted items/capabilities into individual ration platforms for enhanced acceptability, nutrition and performance; Transition to 6.5 for testing.</p>				FY 2013
				FY 2014
<p>Title: Assault/Special Purpose Ration Improvement Project (ASPIP)</p> <p align="right">Articles:</p> <p>Description: Continuous product improvement of special purpose rations by the insertion of new technologies in nutrition, processing and packaging.</p> <p>FY 2012 Accomplishments: Continue identification and selection of new candidate items. Conduct in-house product development as needed; assemble test menus, select test site, and transition to 6.5 for field test. Complete procurement documents for new items and new assembly documentation for FSR and MCW/LRP. Conduct production testing of new components.</p> <p>FY 2013 Plans:</p>				0.375 0
				0.382 0
				0.413

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>		PROJECT 610: <i>Food Adv Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Continue to identify COTS/NDI components for the Meal, Cold Weather/Long Range Patrol and First Strike Ration to enhance acceptability, variety, consumption and nutritional value of combat rations. Identify new components based upon user feedback, focus groups, emerging products and technologies and user requirements. Conduct accelerated and long term storage studies on candidate components. Work with industry partners to facilitate producibility and technology transition. Transition to 6.5 for Warfighter testing.</p> <p>FY 2014 Plans: Continue to identify COTS/NDI components for the Meal, Cold Weather/Long Range Patrol and First Strike Ration to enhance acceptability, variety, consumption and nutritional value of combat rations. Identify new components based upon user feedback, focus groups, emerging products and technologies and user requirements. Conduct accelerated and long term storage studies on candidate components. Work with industry partners to facilitate producibility and technology transition. Transition to 6.5 for Warfighter testing.</p>				
<p>Title: Fielded Group Ration Improvement Project (FGRIP)</p> <p>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.</p> <p>FY 2012 Accomplishments: Improve family of UGRs (H&S (2014/2015), A (2013/2014), B and E (2014/2015)) to increase overall Warfighter acceptability, and consumption. Based on Warfighter recommendations, incorporate COTS, NDI, and developmental components into prototype menus. Select field test site and transition to 6.5 for field testing. Complete draft procurement documents. Integrate state of the art packaging and combat ration processing technologies for improved operational and functional performance.</p> <p>FY 2013 Plans: Continue efforts to update/improve components, menus and packaging to increase consumption and overall nutritional intake of the family of Unitized Group Rations (UGRs) for UGR-A (FY15 menus), B, E and H&S (2015/16 DOP). Identify COTS/NDIs and/or develop new food components in-house, conduct in-house testing, down-select items and develop test menus for Warfighter evaluation. Develop, integrate and validate state-of-the-art science and technology, food processing and primary/secondary packaging innovations into group ration platforms to increase operational effectiveness, functionality and improve logistics. Transition to 6.5 for Warfighter testing.</p> <p>FY 2014 Plans: Continue efforts to update/improve components, menus and packaging to increase consumption and overall nutritional intake of the family of Unitized Group Rations (UGRs) for UGR-A (FY15 menus), B, E and H&S (2015/16 DOP). Identify COTS/NDIs and/or develop new food components in-house, conduct in-house testing, down-select items and develop test menus for Warfighter</p>		<p>0.785</p> <p>Articles: 0</p>	<p>1.007</p> <p>0</p>	<p>1.019</p>

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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
evaluation. Develop, integrate and validate state-of-the-art science and technology, food processing and primary/secondary packaging innovations into group ration platforms to increase operational effectiveness, functionality and improve logistics. Transition to 6.5 for Warfighter testing.				
Title: US Navy Standard Core Menu Continuous Product Improvement Project (NSCM)		0.175	0.180	0.225
	Articles:	0	0	
Description: Provide recommendations for upgrading/improving Navy Standard Core Menu components by introducing new preparation techniques to enhance menu acceptance and effectiveness while reducing labor requirements.				
FY 2012 Accomplishments: Provide NAVSUP with continuous product identification, evaluations and menu development to support NSCM upgrades and revision changes.				
FY 2013 Plans: Continue to identify and validate COTS and NDI candidate enhancements to the NSCM. Provide recommendations for improving menu components by introducing new commercial items and state-of-the-art food preparation and feeding techniques to enhance menu acceptance and reduce labor requirements. Transition product summaries and results/recommendations to Naval Supply Systems Command (NAVSUP) for adoption and procurement.				
FY 2014 Plans: Continue to identify and validate COTS and NDI candidate enhancements to the NSCM. Provide recommendations for improving menu components by introducing new commercial items and state-of-the-art food preparation and feeding techniques to enhance menu acceptance and reduce labor requirements. Transition product summaries and results/recommendations to Naval Supply Systems Command (NAVSUP) for adoption and procurement.				
Title: Quality Kinetics/Rapid Fielding of Ration Components		0.000	0.082	0.100
	Articles:		0	
Description: Confirm or optimize current accelerated storage protocols. Validate a predictive model for food degradation.				
FY 2013 Plans: Continue development of baseline predictive model. Complete storage studies, data collection and analysis. Validate model and implement updated storage protocols for operational ration components, where feasible. Transfer updated protocols to food technologists to support future in-house product development efforts. Generate tech report summarizing results and facilitating tech transfer of model to food technologists and developers of COTS/NDI components.				
FY 2014 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
Transition and implement quantitative kinetics models utilizing analytical markers (fat oxidation calorimetry, etc) to 6.4 Assault/ Special Purpose Ration Improvement Program (ASPIP) and Fielded Individual Ration Improvement Program (FIRIP). Integrate optimized quality kinetics models into current sensory evaluation system and adjust and optimize storage protocols and conditions using analytical testing/temperature kinetics and defined and recommended guidelines for conduction accelerated storage studies equivalent to Military storage requirements. Streamline and enhance evaluation process for identified new ration components (entrees, sides, snacks, bakery items) that fall within guidelines specified by the quality kinetics model, accelerate rapid fielding of specific ration component, decrease/minimize engineering support cases for quality related issues, and enhance development efficiency. Modify and transition technical data to Defense Logistics Agency - Troop Support.				
<p>Title: Joint Service Refrigeration Container System (JSRCS)</p> <p align="right">Articles:</p> <p>Description: Develop a joint service refrigerated container system that will support all military field feeding platforms.</p> <p>FY 2012 Accomplishments: Develop a Joint Service Refrigerated Container System (JSRCS) to support group ration distribution and storage for multiple services.</p>		0.510 0	0.000	0.000
<p>Title: Basic Expeditionary Airfield Resources (BEAR) Kitchen Support Enhancements</p> <p align="right">Articles:</p> <p>Description: Provide Air Force new electric food service equipment; and implementation plan to support the initial (i) / follow-on (f) systems to support AF BEAR field feeding.</p> <p>FY 2012 Accomplishments: Air Force Basic Expeditionary Airfield Resources (BEAR) - Kitchen System Enhancements, provide AF with enhanced, state of the art all electric food service equipment; and continue to refine modular field feeding system.</p>		0.330 0	0.000	0.000
<p>Title: UGR-A for Expeditionary Basecamps</p> <p align="right">Articles:</p> <p>Description: Provides an optimized number of servings for use by Tactical Small Units (TSUs) in contingency basing operations for both the UGR-A (Army) and UGR-B (Marine Corps) with austere field feeding equipment.</p> <p>FY 2012 Accomplishments:</p>		0.133 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>		PROJECT 610: <i>Food Adv Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Conduct Warfighter evaluation to validate proposed configuration, coordinate recommendations with Joint Culinary Center of Excellence and obtain Joint Service Operational Ration Forum (JSORF) approval, and update and transition revised procurement documents to Defense Logistics Agency Troop Support (DLA-TS).				
<p>Title: Barrier Coating for Optimized Package Performance</p> <p align="right">Articles:</p> <p>Description: Provides low-cost, non-foil, high performance packaging materials for incorporation into existing and future combat ration packaging systems, such as the Unitized Group Ration (UGR) and Meal, Ready-to-Eat (MRE).</p> <p>FY 2013 Plans: Complete in-house studies of pilot scale pouches and demonstrating filling, sealing, and processing capabilities. Conduct verification testing (accelerated storage, rough handling, and field utility). Draft Technical Data Package (TDP) for incorporation into ration component performance specifications. Conduct validation trials with industrial partners to ensure materials identified in TDP can be run on production scale equipment and converted into conforming preformed pouches. Verify industry capability of producing retort and non-retort pouches in both preformed and horizontal-form-fill-seal configurations. Transition new/revised procurement documents to DLA - Troop Support.</p> <p>FY 2014 Plans: Determine optimal barrier structure and scale-up to pilot-scale production of prototype samples. Evaluate prototype packaging system for barrier and mechanical properties, and shelf life and rough handling.</p>		0.000	0.240 0	0.140
<p>Title: Autonomous Shipboard Cleaning System (ASDS)</p> <p align="right">Articles:</p> <p>Description: There is a need to develop an automated and innovative foodservice cleaning system for Navy legacy and future ships due to the planned reductions of Food Service Attendants (FSA), and Culinary Specialists (CS), required under the Navy Transformation Goal of optimized crewing.</p> <p>FY 2013 Plans: Accept delivery of the contractor developed ASDS Phase II Small Business Innovation Research (SBIR) prototype, initiate a Phase III development effort. Conduct land-based testing at Natick Soldier Research Development and Engineering Center (NSRDEC) and coordinate enhanced simulation testing and demonstrations of the upgraded prototypes at Naval Surface Warfare Center's test facilities.</p>		0.000	0.283 0	0.000
<p>Title: Integration of Selected Ration Components Using Novel Food Processing Technology to Individual Ration Platforms</p> <p align="right">Articles:</p>		0.000	0.103 0	0.103

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>		PROJECT 610: <i>Food Adv Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>Description: Develop operational concept for integration of specific novel processed ration components into individual (as well as group and assault/special purpose) ration platforms. Establish baselines for nutrition retention, producibility and package utility. Evaluate baselines for novel processed components against key performance parameters of known thermally processed ration components. Generate draft technical requirements and/or revised documents for novel processed ration components.</p> <p>FY 2013 Plans: Develop operational concept for integration of specific novel processed ration components into individual (as well as group and assault/special purpose) ration platforms. Establish baselines for nutrition retention, producibility and package utility. Evaluate baselines for novel processed components against key performance parameters of known thermally processed ration components. Generate draft technical requirements and/or revised documents for novel processed ration components.</p> <p>FY 2014 Plans: Develop operational concept for integration of specific novel processed ration components into individual (as well as group and assault/special purpose) ration platforms. Establish baselines for nutrition retention, producibility and package utility. Evaluate baselines for novel processed components against key performance parameters of known thermally processed ration components.</p>				FY 2013
				FY 2014
<p>Title: Containerized Ice Making System</p> <p align="right">Articles:</p> <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: Conduct major subcomponent testing. Perform design analysis review. Award Phase III prototype effort. Fabricate System prototype.</p>				0.200 0
				0.000
				0.000
<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 2012 Accomplishments:</p>				0.150 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>		PROJECT 610: <i>Food Adv Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2012
				FY 2013
				FY 2014
<p>Prototype fiberboard container demonstrated during the FY11 MRE Field evaluation will be further evaluated in comparison to the existing military fiberboard container. Scale-up of prototype MRE and UGR secondary shipping containers will be performed and containers evaluated at full production levels using existing assembler's equipment.</p>				
<p>Title: Co-Extruded Alternate Nutrient System (CANS)</p> <p align="right">Articles:</p>				
<p>Description: Provide the Warfighter with functional multi-component bars and single matrices? pastes that serve as vehicles for optimizing nutrient delivery. Develop matrices that are best suited to deliver nutrients/performance optimizers that are stable, functional and organoleptically appealing. Increase quality and variety of performance bars utilizing co-extrusion technologies.</p>				
<p>FY 2013 Plans: Validate producibility; finalize development of mature products (based on sensory analysis, accelerated shelf life test and testing in a relevant environment); and finalize packaging requirements.</p>				
<p>FY 2014 Plans: Finalize FDA approval of selected performance optimizers. Coordinate remaining field testing with Individual Ration program. Validate manufacturing base and long term shelf life studies in coordination with production base. Generate draft technical requirements.</p>				
<p>Title: Alternative Polymer Processing Technology (APPT)</p> <p align="right">Articles:</p>				
<p>Description: Improve ration packaging by enhancing package performance through the use of advanced polymer processing technologies, such as orientation, co-extrusion, and layer multiplying co-extrusion. Reduce packaging weight and waste. Improve packaging performance through enhanced mechanical and barrier properties.</p>				
<p>FY 2013 Plans: Prototype packages will be fabricated and storage stability and rough handling studies will be conducted to demonstrate performance in a simulated environment. Contracts will be initiated for insect infestation studies. The technical risk associated with this project is minimized, given that several congressionally funded programs have laid the ground work for this research through current and past projects. Producibility studies and field testing will be performed on Prototype packaging structures.</p>				
<p>Title: Transition of Advanced Appliances for Field Kitchens</p> <p align="right">Articles:</p>				
<p>Description: Provide the Warfighter with JP-8-fueled appliances that save fuel, are simple to use, provide a safe kitchen environment, and can easily be moved into buildings when necessary. Warfighters benefit from a safer, healthier, more</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>		PROJECT 610: <i>Food Adv Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
comfortable kitchen environment, and equipment that facilitates preparation of quality A-ration meals. Existing appliances are only about 15-40% efficient; new burner technologies have demonstrated 75% efficiency, typical of stationary gas-fired equipment.				
FY 2013 Plans: Validate producibility and finalize development of mature JP-8 appliances which have been successfully demonstrated in a relevant environment in a 6.3 technical demonstration; finalize performance requirements. Perform cost evaluation of relevant appliances and JP-8 burner technologies. Finalize integration of appliances into modular cabinet interface for kitchen platforms.				
Title: Innovative Packaging Concepts (InnoPac) for Group Rations				0.000
Description: Innovative technologies and designs will be utilized to develop packaging systems offering lighter weight, down-gauged components that provide enhanced durability and easy-to-open features. Retort cartons made from laminated paperboard based structures will be investigated as a replacement for #10 cans.				0.000
FY 2014 Plans: Storage stability and rough handling studies will be conducted to demonstrate performance in simulated environments as part of demonstration efforts to evaluate system functionality, potential design risks and technology maturity of developed systems. Field evaluations with Warfighter collaboration will be also conducted. Technical report containing all test data, product specifications and technology assessment reports detailing material characteristics and end item attributes.				0.145
Title: Permeability Modeling of Advanced Packaging Systems (PMAPS)				0.000
Description: Expand upon the current film based permeability prediction model to allow for permeability prediction of packaging systems. Determine the total barrier effect of combined packaging technologies developed under research programs.				0.000
FY 2014 Plans: Conduct pilot-scale production runs to produce packaging films for conversion into pouches and filling with selected food items. Conduct storage study to include sensory and analytical testing such as water activity and headspace analysis to validate model. A validation report will be prepared at the end of the storage study.				0.140
Title: Packaging Optimization with Polymeric Microspheres (POPM)				0.000
Description: Develop production base for polymeric films containing expandable microspheres for use in reduced-weight, high-performance ration packaging applications which will provide reduced density, enhanced thermal properties and cost savings.				0.000
FY 2014 Plans:				0.225

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>		PROJECT 610: <i>Food Adv Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
Collaboration will occur with industrial partners (material suppliers and converters) to produce material at the pilot-scale level, and to fabricate Flameless Ration Heater pouches and Meal Ready-to-Eat® entree bags. Collaboration will also occur between technical teams, DLA-Troop Support, and industrial partners. Cost validation analyses will be performed to confirm affordability.				FY 2013
Title: Navy Food Service Analysis Tool				FY 2014
Description: Develop a software analysis tool for Navy Foodservice that performs the following tasks: Automatically calculate all storage space factors and requirements for naval vessels based off the specific Navy Standard Core Menu (NSCM), crew size, Naval Ship's Technical Manual 096, Weights and Stability, Naval Vessel Requirements Food Service Facility Design Manual, Build Specifications 671, 672, and Type Commander established endurance levels.				0.000
FY 2014 Plans: Develop automated subsistence inventory management, tracking and direct routing for all storage areas with mobile scanning technology capability; Conduct in-house tests & evaluation; Coordinate software Navy AIT approval/certification				0.000
Title: Joint Inter-service Field Feeding Burner				0.489
Description: Develop a Joint-Service, government owned JP-8 fuel fired burner for field kitchen appliances. Government will control configuration, procurement, and support decisions. Establish parts list using widely supportable supply chain in field operations.				0.000
FY 2014 Plans: Build Design Validation (DV) units using a supportable, commercial bill of materials. Test in a high fidelity, realistic operating environment and conduct supportability validation. Prepare Technical Data Package.				0.000
Title: Diesel/Electric Powered TriCon Refer Container System				0.490
Description: To develop a standalone diesel/electric powered TriCon Refrigerated Container System (TRCS) to provide carriage of deep frozen, frozen, and chilled cargo in remote locations.				0.000
FY 2014 Plans: Complete prototype evaluations. Revise MIL Performance Specification; Develop Engineering Change Proposal. Insert via an Engineering Change Proposal into current TRCS contract.				0.000
Title: SBIR+STTR				0.117
Description: SBIR+STTR				0
Articles:				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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT 610: <i>Food Adv Development</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> SBIR+STTR			
Accomplishments/Planned Programs Subtotals	3.720	4.014	5.188

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>
• RDT&E 654713.548: <i>Military Subsistence System</i>	2.008	2.132	1.939		1.939	2.234	2.273	2.239	2.475	Continuing	Continuing
• OPA M65801: <i>Refrigerated Containers</i>	22.133	22.441	22.584		22.584	22.486	22.470	22.851	23.232	Continuing	Continuing

Remarks

D. Acquisition Strategy

Project development will transition to System Development & Demonstration and 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT 610: <i>Food Adv 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			
Combat Feeding Program Management	Various	RDECOM, Natick, MA:Natick, MA	4.026	0.458		0.454		0.535		-		0.535	Continuing	Continuing	Continuing
SBIR+STTR	TBD	Various:Various	0.000	0.117		-		-		-		-	0.000	0.117	0.000
Subtotal			4.026	0.575		0.454		0.535		0.000		0.535			

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			
Joint Service Food/Combat Feeding Equipment	Various	RDECOM, Natick, MA:Natick, MA	33.198	1.227		1.457		1.952		-		1.952	Continuing	Continuing	Continuing
Joint Service Food/Combat Feeding Equipment	Various	Various:Various	21.282	1.382		1.549		2.066		-		2.066	Continuing	Continuing	Continuing
Subtotal			54.480	2.609		3.006		4.018		0.000		4.018			

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			
Joint Service Food/Combat Feeding Equipment	Various	DTC/AEC:National Capitol Region	8.592	0.536		0.554		0.635		-		0.635	Continuing	Continuing	Continuing
Subtotal			8.592	0.536		0.554		0.635		0.000		0.635			

			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			67.098	3.720	4.014	5.188	0.000	5.188			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT 610: <i>Food Adv 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
Integrate control systems for diagnostics/ prognostics of the automated scullery	██████████																											
Review Marine Corp Field Feeding Doctrine identify capability of current systems	██████████																											
Conduct DT on JP8 Fired Commerical Appliances									██████████																			
USMC Field Kitchen Modernization Effort									████████████████████																			
Establish baseline, evaluate and transition novel processed ration components t					████████████████████																							
Field Testing of Multi-Functional Secondary Packaging	████████████████████																											
Transition of Advanced Appliances for Field Kitchens- OT of Prototypes					████████████████████																							
Finalize Packaging Requirements Based on Producibility Tests					████████████████████																							
Field Tests of Alternative Polymer Processing Technology (APPT)					████████████████████																							
Modify Production Change Request (PCR) of APPT and Transition to DLA-TS									██████																			
Draft SOW and award contract for Navy Food Service Analysis Tool													████															
Conduct in-house tests & evaluation for Navy Food Service Analysis Tool																	████											
Identify candidate burner technology for potential integration into comm																	██████████											
Identify, procure, and evaluate candidate burners for tray ration heater reset																	██████████											

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT 610: <i>Food Adv Development</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				
Technical evaluation for heat exchangers in EFK; procurement of nesting sinks																																
Test Joint Inter-Service Burner in a high fidelity, realistic operating environm																																
Develop Engineering Change Proposal for Diesel/Electric TriCon Refer System																																
Build standalone capability for Diesel/Electric powered TRCS																																
Award contract to integrate improved refer unit with MTRCS platform																																
Coordinate packaging specifications with ration assemblers/producers																																

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT 610: <i>Food Adv Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Integrate control systems for diagnostics/prognostics of the automated scullery	2	2012	4	2012
Review Marine Corp Field Feeding Doctrine identify capability of current systems	2	2012	4	2012
Conduct DT on JP8 Fired Commerical Appliances	2	2014	4	2014
USMC Field Kitchen Modernization Effort	1	2014	4	2015
Establish baseline, evaluate and transition novel processed ration components t	1	2013	4	2014
Field Testing of Multi-Functional Secondary Packaging	4	2012	4	2013
Transition of Advanced Appliances for Field Kitchens- OT of Prototypes	3	2013	2	2014
Finalize Packaging Requirements Based on Producibility Tests	1	2013	4	2013
Field Tests of Alternative Polymer Processing Technology (APPT)	1	2013	4	2013
Modify Production Change Request (PCR) of APPT and Transition to DLA-TS	4	2013	4	2013
Draft SOW and award contract for Navy Food Service Analysis Tool	3	2014	3	2014
Conduct in-house tests & evaluation for Navy Food Service Analysis Tool	2	2015	2	2015
Identify candidate burner technology for potential integration into comm	1	2015	2	2015
Identify, procure, and evaluate candidate burners for tray ration heater reset	1	2015	2	2015
Technical evaluation for heat exchangers in EFK; procurement of nesting sinks	3	2015	4	2015
Test Joint Inter-Service Burner in a high fidelity, realistic operating environm	3	2014	3	2014
Develop Engineering Change Proposal for Diesel/Electric TriCon Refer System	4	2014	4	2014
Build standalone capability for Diesel/Electric powered TRCS	1	2015	3	2015
Award contract to integrate improved refer unit with MTRCS platform	3	2015	4	2015
Coordinate packaging specifications with ration assemblers/producers	3	2014	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>				PROJECT C08: <i>Rapid Equipping Force</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
C08: <i>Rapid Equipping Force</i>	-	10.000	25.919	1.515	-	1.515	9.255	7.902	6.037	6.037	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

Equipment mix and configuration may change based on changes in operational environment and circumstances.

A. Mission Description and Budget Item Justification

The United States Army Rapid Equipping Force (REF) harnesses current and emerging technologies to provide rapid solutions to the urgently required capabilities of US Army forces employed globally. The REF combines and integrates functions that cross several Army staff elements and Army Service Component Commands (ASCC) to accelerate materiel solutions and technology insertion to forces on a global scale. The REF provides the Army's rapid response capability to develop, prototype, acquire and integrate Commercial-Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) solutions to meet urgent combat requirements for deployed forces. It develops and inserts selected future force technologies, capabilities and surrogate material solutions into committed, deploying and transformational forces for operational evaluation, assessment and spiral development. It plans and executes assessments and studies of Army practices and issues concerning operational needs, desired future force capabilities and relevant Army business practices to provide feedback to Senior Army Leaders.

The REF bridges the gap between the lengthy acquisition process and immediate equipping needs. We pursue tangible solutions that can be equipped within a goal of 90 days. The REF focuses on finding effective game-changing capabilities to increase Soldier effectiveness, protection and lethality in any operational environment. The REF process provides the mechanism to respond rapidly to an adaptive enemy who changes in days and months, not years. The REF Teams deployed in theater work with Army Service Component Commands of the Combatant Commands (COCOMs) to understand their urgent needs, for which the REF acquisition capability may identify, procure and deliver solutions to the deployed units. A key element of this process is fiscal flexibility, permitting the REF to allocate funds against emerging threats and requirements in the year of fiscal execution.

The REF works directly with Operational Commanders at Brigade and below to find solutions to identified equipping requirements. These solutions may result in procurement of new or existing military/commercial materiel equipment, or accelerated development of a Future Force materiel solution for insertion into the current force now. The REF key tasks are:

- Be responsive to tactical unit commanders engage Brigade Combat Team/Brigade Commanders (BCT/BDE CDRs) early and often
- Bridge specific Operational Needs Statement/Joint Urgent Operational Needs Statement (ONS/JUONS) Gaps to meet urgent needs
- In coordination with Asymmetric Warfare Group (AWG) develop materiel solutions to counter Asymmetric Threats
- Ensure adequate training and sustainment are provided with every capability
- Cultivate and rapidly insert emerging technologies into Soldiers hands

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<ul style="list-style-type: none"> - Conduct operational assessments to provide useful operator feedback to the Army - Transition effective projects through Capability Development for Rapid Transition (CDRT) to support long-term sustainment - Be aggressive and push the acquisition envelope, but operate within the law - Integrate with existing Army organizations and systems to enable them to recognize and solve problems for tactical units <p>The REF Integrated Priority list (RIPL) consists of the REF top ten priorities based on requirements received from deployed units, and drives all REF efforts. The priorities with associated metrics, as of 06 February 2013, are:</p> <ol style="list-style-type: none"> 1. Dismounted Improvised Explosive Device (IED) Defeat (46 Requirements/42 Projects) 2. Small Combat Outpost (COP)/Patrol Base (PB) Force Protection and Sustainment (60 Requirements/52 Projects) 3. Dismounted Operations Support (40 Requirements/34 Projects) 4. Intelligence, Surveillance, and Reconnaissance (ISR) Shortfalls in Environmentally Inhospitable Operating Environments (OEs) (42 Requirements/42 Projects) 5. Dismounted Blue Force Tracking and Mission Command (24 Requirements/16 Projects) 6. Counter Ambush (Precision against Small Arms Fire (SAF) and Rocket Propelled Grenade (RPG) (4 Requirements/6 Projects) 7. Advanced Escalation of Force and Non-Lethal Messaging (10 Requirements/7 Projects) 8. Entry Control Point (ECP) Operations and Vehicle Search Operations (10 Requirements/5 Projects) 9. Route Clearance Support (8 Requirements/5 Projects) 10. Other (61 Requirements/60 Projects) <p>Total: 305 Requirements/269 Projects</p> <p>The REF FY14 RDT&E Request of \$1.515 million (Base) integrates, coordinates, deploys and provides urgent material capabilities to deployed and pre-deploying units in support of Joint and Army Forces Commanders to enhance the combat effectiveness of the operating force and enable the defeat of asymmetric threats. The emphasis for RDT&E funding is on Testing and Evaluation that supports projects in the areas of Force Protection, Improvised Explosive Device (IED) Detection and Defeat, enhanced Intelligence, Surveillance and Reconnaissance (ISR) capabilities, Tactical Command, Control and Communication tools.</p> <p>RDT&E funding also provides the REF the flexibility to invest in near-term, innovative solutions. RDT&E funds are necessary in the vast majority of all REF projects. REF uses RDT&E funds to work with industry and Other Governmental Agencies (OGAs) in order to further develop high (>6) Technology Readiness Level (TRL) or advanced technologies that often only need small amounts of funding in order to help them achieve a maturity level that is suitable to solve deployed US Army Forces problems with low investments for high payoffs. REF requires RDT&E funds to integrate several different Commercial-Off-The-Shelf/Government-Off-The-Shelf (COTS/GOTS) technologies into one capability that solves the tougher and more complex problems. REF uses RDT&E funds to conduct demonstrations and tests to validate technology solutions. REF requires RDT&E funds in order to modify existing technologies that were developed for one purpose but now may be suitable to solve another problem. REF Expeditionary Labs use RDT&E funds to develop and adapt technologies that meet immediate requirements forward in the theaters of operation</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT C08: <i>Rapid Equipping Force</i>
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with the active assistance of the Soldier in the solution development process. REF requires RDT&E funds to test technologies in order to ensure suitability and safety before equipping the Soldier- any modified Commercial-Off-The-Shelf/Government-Off-The-Shelf (COTS/GOTS) item has to be tested.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Rapid Equipping Force</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Accomplishments: Provide the Army's rapid response capability to develop, prototype, acquire and integrate Commercial-Off-The-Shelf/ Government-Off-The Shelf (COTS and GOTS) solutions to meet urgent combat requirements for deployed forces. Develop and insert selected future force technologies, capabilities and surrogate materiel solutions into committed, deploying and transformational forces for operational evaluation, assessment and spiral development. Plan and execute assessments and studies of Army practices and issues concerning operational needs, desired future force capabilities and relevant Army business practices to provide feedback to Senior Army Leaders.</p> <p>FY 2013 Plans: The pace of requirements is expected to continue at FY12 levels based on the increased tempo of transitioning brigades in Operation Enduring Freedom (OEF) with 9 month deployments; the expansion of brigades' operational environments (OE's) that will require smaller units to operate in more isolated areas; the expansion of Army Special Operations Forces Village Stability Operations (VSO) efforts; and finally the introduction of Security Force Advisory Assistance Teams (SFAATs) - a new force structure and role in Operation Enduring Freedom (OEF).</p> <p>FY 2014 Plans: REF mission expands to perform Direct Support (DS) to globally deployed Soldiers, Army Service Component Commands of the Combatant Commands, regionally aligned Brigade Combat Teams and other Department of Defense (DoD) organizations. During the same period we expect to see an increase in requirements submitted by Army Special Operations Forces (SOF) in other areas of the world as well as from brigades employed in more global roles, such as the regionally aligned Brigade Combat Teams. REF's Expeditionary Labs are deployed to provide engineer support directly to Battalion and Brigade Forward Operating Bases/ Combat Outposts/Patrol Bases and work side-by-side with Soldiers as they execute their missions. Engineers connect directly to Army, Department of Defense (DoD) and National Labs to conduct prototype design while including the users' immediate feedback. We also expect to play a much more deliberate role in providing support to the Army's Global Reaction Force (GRF) as they prepare for a wider range of response missions.</p>	<p>10.000</p> <p>0</p>	<p>25.919</p> <p>0</p>	<p>1.515</p>
Accomplishments/Planned Programs Subtotals	10.000	25.919	1.515

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT C08: <i>Rapid Equipping Force</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>
• M08101: <i>Other Procurement Army</i>	26.923	103.245	5.110		5.110	4.800	4.300	4.400	4.400	Continuing	Continuing
• 121018000: <i>Operations and Maintenance, Army</i>	137.400	127.912	7.248		7.248	7.370	7.639	7.699	7.838	Continuing	Continuing

Remarks

As of 21 February 2013: FY12 - OPA REF Base (\$4.923 million), OPA REF OCO (\$22.0 million)
FY12-OMA REF Base (\$6.788 million), REF OCO (\$180.695 million)

D. Acquisition Strategy

The United States Army Rapid Equipping Force harnesses current and emerging technologies to provide rapid solutions to the urgently required capabilities of US Army Forces employed globally. The REF focus is on rapidly placing game-changing capabilities into Soldiers' hands. This mission is accomplished in one of two ways: rapidly adapting Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) equipment to meet operational needs and developing emerging deployable capability via interaction with research and development organizations and academia. All capabilities are safety tested prior to insertion into operational environments. Training and sustainment is provided for every capability until it is transitioned to an approved program of record or terminated through the Capabilities Development for Rapid Transition (CDRT) process. Operational assessments are conducted to provide feedback in support of Army equipping and fielding decisions. REF capabilities routinely serve to bridge specific Operational Needs Statement (ONS) and Joint Urgent Operational Needs Statement (JUONS) gaps to meet urgent requirements.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603747A: <i>Soldier Support and Survivability</i>	PROJECT C08: <i>Rapid Equipping Force</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			
Dismounted Improvised Explosive Device (IED) Defeat	C/FFP	Various:Various	0.000	1.022		2.439		-		-		-	Continuing	Continuing	Continuing
Dismounted Operations Support	C/FFP	Various:Various	0.000	1.086		2.591		-		-		-	Continuing	Continuing	Continuing
Intelligence, Surveillance, and Reconnaissance (ISR) Shortfalls in Environmentally Inhospitable OE's	C/FFP	Various:Various	0.000	1.885		4.496		-		-		-	Continuing	Continuing	Continuing
Small Combat Outpost (COP) / Patrol Base (PB) Force Protection and Sustainment	C/FFP	Various:Various	0.000	1.853		4.420		-		-		-	Continuing	Continuing	Continuing
Other-REF RIPL Priorities (5-10)	C/FFP	Various:Various	0.000	4.154		9.908		-		-		-	Continuing	Continuing	0.000
Base: Various Projects-Protect the Force in Counter Insurgency	C/FFP	TBD:TBD	11.841	-		-		-		-		-	0.000	11.841	0.000
Base: Various Projects-Enhance Intelligence Surveillance Recon	C/FFP	TBD:TBD	9.009	-		-		-		-		-	0.000	9.009	0.000
Base: Various Projects-Logistics/Medical in Counterinsurgency Ops	C/FFP	TBD:TBD	1.639	-		-		-		-		-	0.000	1.639	0.000
Base: Various Projects-Timeliness of Analysis and Information Dissemination	C/FFP	TBD:TBD	6.961	-		-		-		-		-	0.000	6.961	0.000
Congressional Add-Squad Mission Support System (SMSS)	C/FFP	TBD:TBD	1.600	-		-		-		-		-	0.000	1.600	0.000
SSTR/Economic Assumptions/FFRDC and SBIR	C/FFP	TBD:TBD	1.090	-		-		-		-		-	0.000	1.090	0.000

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603766A: <i>Tactical Electronic Surveillance System - Adv 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	-	5.757	8.660	6.894	-	6.894	9.102	8.989	8.623	11.862	Continuing	Continuing
907: <i>Tactical Exploitation of National Capabilities-MIP</i>	-	5.757	8.660	6.894	-	6.894	9.102	8.989	8.623	11.862	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

A portion of the FY14 funding was realigned from Program Element (PE) 0603766A - 'Tactical Electronic Surveillance System - Adv Dev' (BA 6.4) into PE 0605766A, 'National Integration To Tactical Systems (MIP) - System Development and Demonstration' (BA 6.5) to properly capture and fund the TENCAP advanced technologies through their integration into Army Programs of Record (PORs).

A. Mission Description and Budget Item Justification

The Tactical Exploitation of National Capabilities (TENCAP) program serves as the Army's centralized lead to perform National Intelligence cross-agency engineering to evaluate, enhance, prototype, and transition Intelligence, Surveillance, and Reconnaissance (ISR) technologies/capabilities developed by Science and Technology (S&T) and other activities across the National Intelligence Community into Army systems and architectures. TENCAP (1) ensures continued access to current National and Theater sensors and supporting tactical architectures; and (2) exploits new developments that focus on improving the tasking, analysis, processing, exploitation, and dissemination of the intelligence data collected. This includes efforts to: (1) shorten targeting timelines down to Platoon level; (2) enhance target identification; (3) provide better target location (accuracy); (4) provide continued coverage of a target; and (5) develop in-theater analytic tools to enable data exploitation in near-real-time support to contingency operations.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	5.856	8.660	14.704	-	14.704
Current President's Budget	5.757	8.660	6.894	-	6.894
Total Adjustments	-0.099	0.000	-7.810	-	-7.810
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-0.099	-	-7.810	-	-7.810

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603766A: <i>Tactical Electronic Surveillance System - Adv Dev</i>	PROJECT 907: <i>Tactical Exploitation of National Capabilities-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
907: <i>Tactical Exploitation of National Capabilities-MIP</i>	-	5.757	8.660	6.894	-	6.894	9.102	8.989	8.623	11.862	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

0603766A - Tactical Electronic Surveillance System program element develops advanced prototypes and capabilities to meet Army intelligence and operational requirements while protecting Army equity and ensuring continued interoperability through changes and improvements in the National Intelligence Community systems and architectures.

A portion of the FY14 funding was realigned from Program Element (PE) 0603766A - 'Tactical Electronic Surveillance System - Adv Dev' (BA 6.4) into PE 0605766A, 'National Integration To Tactical Systems (MIP) - System Development and Demonstration' (BA 6.5) to properly capture and fund the TENCAP advanced technologies through their integration into Army Programs of Record (PORs).

A. Mission Description and Budget Item Justification

The Tactical Exploitation of National Capabilities (TENCAP) program serves as the Army's centralized lead to perform National Intelligence cross-agency engineering to evaluate, enhance, prototype, and transition Intelligence, Surveillance and Reconnaissance (ISR) technologies/capabilities developed by Science and Technology (S&T) and other activities across the National Intelligence Community into Army systems and architectures. TENCAP (1) ensures continued access to current National and Theater sensors and supporting tactical architectures; and (2) exploits new developments that focus on improving the tasking, analysis, processing, exploitation, and dissemination of intelligence data. This includes efforts to: (1) shorten targeting timelines down to Platoon level; (2) enhance target identification; (3) provide better target location (accuracy); (4) provide continued coverage of a target; and (5) develop in-theater analytic tools to enable data exploitation in near-real-time support to contingency operations.

FY2014 Base funding in the amount of \$6.894 million provides for engineering and collaborative development of National Intelligence Community advancements for continuous interoperability with those community assets; advanced development of more effective intelligence collection, processing, exploitation and dissemination; and advanced development of sensor capabilities for Air Vigilance (AV) Army Program of Record

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

	FY 2012	FY 2013	FY 2014
Title: TENCAP Cross-agency Core Engineering activities	5.667	6.542	6.374
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603766A: <i>Tactical Electronic Surveillance System - Adv Dev</i>		PROJECT 907: <i>Tactical Exploitation of National Capabilities-MIP</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: Collaborate, develop and exploit emerging multi-intelligence and Space-based technologies to satisfy/accelerate Army Intelligence, Surveillance, Reconnaissance (ISR), Battle Command and Force Protection requirements.</p> <p>FY 2012 Accomplishments: Ensured Army requirements in National developments; Ensured Army continued access to sensors and Space-based capabilities; Monitored emerging technologies and systems; Developed and/or exploited advancements for integration and standardization in Army processing, exploitation and data dissemination (PED) and theater net-centric geolocation (TNG) capabilities; Developed prototypes that improve Army intelligence products.</p> <p>FY 2013 Plans: Ensure Army requirements in National developments; Ensure Army continued access to sensors and Space-based capabilities; Monitor emerging technologies and systems; Continue to develop and/or exploit advancements for integration and standardization in Army processing, exploitation and data dissemination (PED) and theater net-centric geolocation (TNG) capabilities; Exploit advances in commercial imagery, specific emitter identification and full motion video technologies; Develop prototypes that improve Army intelligence products.</p> <p>FY 2014 Plans: Ensure Army requirements in National developments; Ensure Army continued access to sensors and Space-based capabilities; Monitor emerging technologies and systems; Continue to develop and centrally manage the theater net-centric geolocation (TNG) capabilities; Exploit advances in commercial imagery and specific emitter identification technologies; Develop prototypes that improve Army intelligence products.</p>				
<p>Title: Air Vigilance</p> <p align="right">Articles:</p> <p>Description: Prototype development capability initiated under Army TENCAP program.</p> <p>FY 2012 Accomplishments: Continue development of Air Vigilance prototype capability for initiation as an enduring Air Vigilance (AV) Army Program of Record.</p> <p>FY 2013 Plans: Establish new Air Vigilance (AV) Army Program of Record, development of remote and airborne capabilities.</p> <p>FY 2014 Plans:</p>		0.090 0	2.118 0	0.520

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603766A: <i>Tactical Electronic Surveillance System - Adv Dev</i>	PROJECT 907: <i>Tactical Exploitation of National Capabilities-MIP</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Advanced sensor development and enhancements for Air Vigilance (AV) Army Program of Record ingest and continued effectiveness.			
Accomplishments/Planned Programs Subtotals	5.757	8.660	6.894

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
• 0605766A RDTE: <i>National Integration To Tactical Systems (MIP), 0605766A</i>			21.143		21.143	15.472	8.772	1.434	1.950	Continuing	Continuing
• W60001 OPA: <i>Enemy UAS, OPA2 (W60001)</i>			2.800		2.800	5.000	6.000			Continuing	Continuing

Remarks
A portion of the FY14 funding was realigned from Program Element (PE) 0603766A - 'Tactical Electronic Surveillance System - Adv Dev' (BA 6.4) into PE 0605766A, 'National Integration To Tactical Systems (MIP) - System Development and Demonstration' (BA 6.5) to properly capture and fund the TENCAP advanced technologies through their integration into Army Programs of Record (PORs).

D. Acquisition Strategy
The Army Tactical Exploitation of National Capabilities (TENCAP) mission is a Congressionally mandated and chartered enduring requirement to leverage National intelligence capabilities useful to the tactical Army. The Army TENCAP acquisition strategy is driven by an annual TENCAP General Officer Steering Group (TGOSG), co-chaired by the Army G2; Army G8; and the Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology [ASA(ALT)]; and includes representatives from the Army G3; Army G6; Army Training and Doctrine Command (TRADOC); and the Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S). The TGOSG reviews, validates, prioritizes, and guides Army TENCAP efforts, according to Army and Defense strategy. Based on this TGOSG guidance, Army TENCAP invests BA 6.4 RDTE in Intelligence Community developments during the more cost-effective advanced development phase to ensure Army requirements are met with minimal redundancy. Army TENCAP then uses BA 6.5 RDTE to manage the transition of these advanced development efforts through system development and integration into Army Programs of Record (PORs). This strategy ensures these leveraged investments remain viable through multiple budget cycles, significantly increasing successful transition to recipient Army PORs. With acquisition discipline and oversight provided by PEO IEW&S, Army TENCAP executes the TGOSG approved efforts through use of multiple contracts and agreements with the military, National agencies, Labs, Industry Partners and Academia for the full duration required to complete development and transition these National capabilities into enduring Army programs.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603766A: <i>Tactical Electronic Surveillance System - Adv Dev</i>	PROJECT 907: <i>Tactical Exploitation of National Capabilities-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			
Intelligence Engineers (SETA)	C/FFP	TASC, Inc.:Alexandria, VA	0.000	2.375	Dec 2011	3.126	Dec 2012	3.045	Dec 2013	-		3.045	Continuing	Continuing	Continuing
Intelligence Engineers(Matrix Gov)	MIPR	AGC:Alexandria, VA	0.000	0.870	Dec 2011	0.950	Dec 2012	0.950		-		0.950	Continuing	Continuing	Continuing
Subtotal			0.000	3.245		4.076		3.995		0.000		3.995			

Remarks
 FY14 - Funding reflects adjusted distribution of support to proper cost elements

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			
TENCAP Core (Focus) Areas	Various	Multiple:Multiple	0.000	-		-		-		-		-	Continuing	Continuing	0.000
Air Vigilance	MIPR	Classified:MIPR	0.000	0.090	Feb 2012	1.838	Dec 2012	0.400	Dec 2013	-		0.400	Continuing	Continuing	0.000
Subtotal			0.000	0.090		1.838		0.400		0.000		0.400			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			
Prgm Mgmt-Dir Gov,travel,etc.	Allot	Army TENCAP:Alexandria, VA	0.000	2.422	Dec 2011	2.466	Oct 2012	1.611	Oct 2013	-		1.611	Continuing	Continuing	0.000
Facilities	MIPR	Army Geospatial:Ft. Belvoir, VA	0.000	-		-		0.768	Dec 2013	-		0.768	0.000	0.768	0.000
Subtotal			0.000	2.422		2.466		2.379		0.000		2.379			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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603766A: <i>Tactical Electronic Surveillance System - Adv Dev</i>	PROJECT 907: <i>Tactical Exploitation of National Capabilities-MIP</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
TGOSG - annual - guides FY15-19 POM				■																								
Material Dev Decision (MDD) for Air Vigilance (AV) Program							■																					
TGOSG - annual - guides FY16-20 POM								■																				
TGOSG - annual - guides FY17-21 POM												■																
TGOSG - annual - guides FY18-22 POM																■												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603766A: <i>Tactical Electronic Surveillance System - Adv Dev</i>	PROJECT 907: <i>Tactical Exploitation of National Capabilities-MIP</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TGOSG - annual - guides FY15-19 POM	4	2012	4	2012
Material Dev Decision (MDD) for Air Vigilance (AV) Program	3	2013	3	2013
TGOSG - annual - guides FY16-20 POM	4	2013	4	2013
TGOSG - annual - guides FY17-21 POM	4	2014	4	2014
TGOSG - annual - guides FY18-22 POM	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems Advanced 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	-	0.000	10.715	9.066	-	9.066	6.208	5.260	5.193	5.000	Continuing	Continuing
131: <i>NIGHT VISION SYS A/DEV</i>	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
VT7: <i>Soldier Maneuver Sensors - Adv Dev</i>	-	0.000	10.715	9.066	-	9.066	6.208	5.260	5.193	5.000	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:

A. Mission Description and Budget Item Justification

This program element focuses on efforts to evaluate and integrate technologies and representative prototype systems that facilitate the development of Soldier-borne sensor devices transitioning from the laboratory to operational use. Efforts focus on proving out commonality across as broad a spectrum of users as possible to provide enhanced Soldier products, giving them superiority on the battlefield.

Project VT7 (Soldier Maneuver Sensors-Advanced Development) Efforts focus on proving out commonality across as broader spectrum of users as possible to provide enhanced Soldier products, giving them superiority on the battlefield. Near term efforts include the integration of goggles with the weapon sights for Rapid Target Acquisition (RTA) in a realistic operating environment, thereby increasing Soldier lethality. This project also develops a Family of Weapon Sights (FWS) with fused electro-optical performance, including focal plane arrays and high resolution micro-displays. FWS enabling technologies increase product resolution, range, and imaging performance. New technologies will improve Soldier lethality, survivability, reduce weight, and improve affordability, mobility and comfort to combat and training environments. In addition this project will explore insertion of technology that improves the Soldier's ability to detect Improvised Explosive Devices (IED) Detection.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems Advanced 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	0.000	10.715	9.066	-	9.066
Current President's Budget	0.000	10.715	9.066	-	9.066
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT 131: <i>NIGHT VISION SYS A/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
131: <i>NIGHT VISION SYS A/DEV</i>	-	0.000	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 project supports the Army's transformation by developing payloads for brigade combat team, division, and corps Unmanned Aircraft Systems(UAS) and unmanned systems in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) priorities.

CSP Target Location Accuracy (TLA) is the final upgrade to CSP which will provide all of the CSP HD functionality but with significantly improved targeting accuracy. CSP TLA provides the Battlefield Commander a vastly improved TLA allowing timely use of Joint Direct Attack Munitions (JDAMs) and Coordinate Seeking Weapons (CSWs) across the battlespace. CSP TLA is being procured as an upgraded capability for the Gray Eagle UAS program and can be integrated onto other manned and unmanned aerial platforms. The funds associated with this funding line are for the technology maturity of the TLA Laser. Once this laser technology has been matured to the appropriate Technology Readiness Level (TRL), it will be cut into the TLA development effort and eventual production to replace the CSP HD payloads on the Gray Eagle platform.

This program has no FY 2013 Base or OCO requirement.

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

N/A

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</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>
• 0305204A - D11A: 0305204A - <i>Tactical Unmanned Aerial Vehicle (11A)</i>	15.910	6.247	7.180		7.180	7.386	11.994	3.094		0.000	51.811
• A00020: MQ-1 Payload - UAS - <i>A00020</i>	146.983	231.508	249.486		249.486	258.027	10.146	10.162		0.000	906.312

Remarks

0305204A - Tactical Unmanned Aerial Vehicle (11A) - Shared RDT&E development funding line between CSP, HD, TLA, STARLite, TSP and Advanced Payloads. TSP funding is being migrated to 0305204A 11B funding line as of FY 2012.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT 131: <i>NIGHT VISION SYS A/DEV</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>
MQ-1 Payload - UAS - A00020 - Shared APA procurement funding line between CSP, HD, TLA, STARLite, TSP and Advanced Payloads.											

D. Acquisition Strategy

The approved acquisition strategy was to award a Sole Source Task Order on the Navy Basic Order Agreement (BOA) to Raytheon to mature the Diode Pump laser technology to an appropriate Technology Readiness Level (TRL). Once sufficiently matured, the components/technology will be incorporated into test systems and transitioned into the Block upgrade program to undergo further system and qualification testing as part of RDTE efforts conducted in the TLA Block upgrade under Advanced Payloads (PE 0305204A Project D11A).

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT 131: <i>NIGHT VISION SYS A/DEV</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

HD/IR and Laser Technology Maturity	<div style="background-color: black; width: 100px; height: 15px; margin: 0 auto;"></div>
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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT 131: <i>NIGHT VISION SYS A/DEV</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
HD/IR and Laser Technology Maturity	3	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT VT7: <i>Soldier Maneuver Sensors - Adv 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
VT7: <i>Soldier Maneuver Sensors - Adv Dev</i>	-	0.000	10.715	9.066	-	9.066	6.208	5.260	5.193	5.000	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 supports efforts to evaluate and integrate technologies and representative prototype systems for the development of Soldier-borne sensor devices, transitioning from the laboratory to operational use. Efforts focus on proving out commonality across as broad a spectrum of users as possible to provide enhanced products that give Soldiers superiority on the battlefield. Near term efforts include the integration of Helmet Mounted Displays (HMDs) with weapon sights for a Rapid Target Acquisition (RTA) capability in a realistic environment, increasing Soldier situational awareness and lethality and integrates technology, which detects enemy snipers using precise target information to mitigate operational risk before sniper fire occurs. This project also integrates high resolution thermal focal plane arrays, integrated ballistic solutions for auto-adjusting reticles, and wireless technology with weapon sights, increasing range, performance, and capability, while decreasing system size and weight. These integration efforts improve Soldier situational awareness, lethality, survivability, mobility, and comfort to combat and training environments. Funds in this program are a realignment of funds from program Night Vision Systems Engineering Development , Program Element 0604710A; Project L67 for more efficient program management.

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

	FY 2012	FY 2013	FY 2014
Title: Family of Weapons Sights (FWS)	0.000	8.840	9.066
Articles:		0	
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 stand-alone mode. FWS-CS includes fused multi-band imagery and rapid target acquisition with ballistic equations, providing the Soldier with improved situational awareness and more rapid target detection and engagement during day and night operations. This program integrates smaller pixel (12 micron) uncooled long-wave infrared focal plane arrays in multiple large format sizes to improve sensitivity, clarity, and range, while simultaneously reducing the size, weight and power consumption of the Crew-Served and Sniper variants.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT VT7: <i>Soldier Maneuver Sensors - Adv Dev</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Demonstrate technology for the FWS-I at an Early User Assessment and develop FWS-CS technology including the build and testing of prototypes and evaluation of 12 micron Focal Plane Arrays (FPA). FY 2014 Plans: Will continue development of FWS-CS including integration of 12 micron thermal focal plane arrays, integrated ballistic solutions for auto-adjusting reticles, wireless technology, and HMDs demonstration of these technologies at an Early User Assessment.			
Title: Improvised Explosive Devices (IED) Detection Articles: Description: In response to JUONS 0269 for the LineFinder (counter-IED), this program funds the development of technological improvements to Soldier-borne sensors that automatically detect and alert to IED related signatures. In addition it funds improvements in the Size, Weight, and Power (SWaP) of head-borne Soldier sensors including the Enhanced Night Vision Goggle (ENVG). FY 2013 Plans: Initiate the integration of detection technologies to enable an Improvised Explosive Devices (IED) Detection system that can locate buried command wires and disturbed ground.	0.000	1.079 0	0.000
Title: Handheld Optical Augmentation (HOA) Sniper Detection Articles: Description: This Sniper Detection System is designed to detect and locate optical scopes used by snipers or optronic sight systems on the battlefield or urban zones. FY 2013 Plans: Initiate the development of a man portable sniper detection/laser warning system.	0.000	0.796 0	0.000
Accomplishments/Planned Programs Subtotals	0.000	10.715	9.066

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
• DL67: <i>DL67 Night Vision Systems</i> <i>-Eng Dev (PE 604710 L67)</i>	23.946		11.271		11.271	16.987	13.880	12.773	19.729	Continuing	Continuing
• <i>Helmet Mounted Enhanced</i> <i>Vision Devi: Helmet Mounted</i>	119.078	125.917	167.379		167.379	174.861	183.695	121.581	64.238	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT VT7: <i>Soldier Maneuver Sensors - Adv Dev</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>
<i>Enhanced Vision Devices (HMEVD) (SSN K36400)</i>											
• <i>Thermal Weapon Sight (TWS): Thermal Weapon Sight (TWS) 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 (SSN K41500)</i>	0.661	11.660						11.240	19.838	Continuing	Continuing
• <i>Multi Function Laser: Multi Function Laser (MFAL K35000)</i>						15.015	16.049	19.000	19.000	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems Advanced Development</i>	PROJECT VT7: <i>Soldier Maneuver Sensors - Adv 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			
FWS Program Management	Various	Various:Various	0.000	-		-		1.681	Dec 2013	-		1.681	0.000	1.681	0.000
Subtotal			0.000	0.000		0.000		1.681		0.000		1.681	0.000	1.681	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			
Family of Weapon Sights (FWS)	Various	ACC:ABERDEEN, MD	0.000	-		8.185	Nov 2012	-		-		-	Continuing	Continuing	0.000
Improvised Explosive Devices (IED) Detection	MIPR	ACC:ABERDEEN, MD	0.000	-		0.938	Feb 2013	-		-		-	0.000	0.938	0.000
FWS-Crew Served-Sniper	Various	ACC:ABERDEEN, MD	0.000	-		-		4.707	Jan 2014	-		4.707	0.000	4.707	0.000
Handheld Optical Augmentation (HOA) Sniper Detect	Various	TBD:TBD	0.000	-		0.740	Feb 2013	-		-		-	Continuing	Continuing	0.000
Subtotal			0.000	0.000		9.863		4.707		0.000		4.707			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			
Improvised Explosive Devices (IED) Detection	Various	NVESD:FT BELVOIR, VA	0.000	-		0.147	Feb 2013	-		-		-	0.000	0.147	0.000
Handheld Optical Augmentation (HOA) Sniper Detect	Various	NVESD:FT BELVOIR, VA	0.000	-		0.050	Feb 2013	-		-		-	0.000	0.050	0.000
Family of Weapon Sights (FWS)	MIPR	NVESD:FT BELVOIR, VA	0.000	-		0.405	Mar 2013	2.492	Dec 2013	-		2.492	0.000	2.897	0.000
Subtotal			0.000	0.000		0.602		2.492		0.000		2.492	0.000	3.094	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT VT7: <i>Soldier Maneuver Sensors - Adv 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
FWS-I MS B																												
FWS-CS Technology Development																												
FWS-CS MS B																												
FWS-Sniper (S) Technology Development																												
FWS-I Increment II Technology Development																												
IED Detection Development (IDD)																												
HANDHELD OPTICAL AUGMENTATION (HOA)																												
HOA MDD																												
HOA Technology Development																												
HOA MS B																												
Next Generation Enhanced Vision Devices 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603774A: <i>Night Vision Systems</i> <i>Advanced Development</i>	PROJECT VT7: <i>Soldier Maneuver Sensors - Adv Dev</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FWS-I MS B	1	2014	2	2014
FWS-CS Technology Development	2	2013	2	2015
FWS-CS MS B	2	2015	2	2015
FWS-Sniper (S) Technology Development	2	2014	1	2016
FWS-I Increment II Technology Development	1	2016	4	2017
IED Detection Development (IDD)	2	2013	2	2014
HANDHELD OPTICAL AUGMENTATION (HOA)	2	2012	2	2012
HOA MDD	2	2013	2	2013
HOA Technology Development	2	2013	1	2016
HOA MS B	1	2016	1	2016
Next Generation Enhanced Vision Devices Development	1	2016	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</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	-	4.788	4.631	2.633	-	2.633	5.835	5.046	4.179	4.286	Continuing	Continuing
035: <i>National Defense Cntr For Enviro Excellence</i>	-	4.376	4.232	2.202	-	2.202	5.835	4.729	3.899	3.969	Continuing	Continuing
04E: <i>Environmental Restoration Tech Validation</i>	-	0.412	0.399	0.431	-	0.431	0.000	0.317	0.280	0.317	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 Funds \$2.122M realigned to higher priority requirements.

A. Mission Description and Budget Item Justification

There is a broad application potential for environmental quality technology (EQT) to be applied to multiple Army weapon systems and installations. However technology must be demonstrated and validated (total ownership cost and performance data identified) before potential users will consider exploiting it. This program element includes projects focused on validating the general military utility or cost reduction potential of technology when applied to different types of infrastructure, military equipment or techniques. It may include validations and proof-of-principle demonstrations in field exercises to evaluate upgrades or provide new operational capabilities. The validation of technologies will be in as realistic an operating environment as possible to assess performance or cost reduction potential. EQT demonstration/validation is systemic; i.e., applies to a class of systems (e.g., vehicles or aircraft) or to a Department of Army-wide, multiple site/installation problem (e.g., unexploded ordnance detection and discrimination). This program will address, and eventually resource, programs in each of the Army environmental quality technology pillars (military materials in the environment, sustainable ranges and lands, compliance, and pollution prevention). All work must be endorsed by potential users and supported by a state-of-the-art assessment (i.e., "technology is heading for user to implement").

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</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	5.023	4.631	4.755	-	4.755
Current President's Budget	4.788	4.631	2.633	-	2.633
Total Adjustments	-0.235	0.000	-2.122	-	-2.122
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.235	-			
• Adjustments to Budget Years	-	-	-2.122	-	-2.122

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>	PROJECT 035: <i>National Defense Cntr For Enviro Excellence</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
035: <i>National Defense Cntr For Enviro Excellence</i>	-	4.376	4.232	2.202	-	2.202	5.835	4.729	3.899	3.969	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 National Defense Center for Environmental Excellence (NDCEE) was established by Congress in 1990 with a directive to "serve as a national leadership organization to address high priority environmental problems for the Department of Defense (DoD), other government organizations, and the industrial community." The NDCEE Program is a national resource for developing and disseminating advanced environmental technologies. The NDCEE is used to demonstrate environmentally acceptable technology to industry; validate new technology prior to transferring that technology; and assist in the training of potential users as part of that technology transfer process. The NDCEE is a DoD resource for environmental quality management and technology validation. This program is managed by the Army on behalf of the Office of the Assistant Deputy Under Secretary of Defense for Environment. In May 2008, the program name was redesignated from the National Defense for Environmental Excellence to the National Defense Center for Energy and Environment to ensure that the Center's mission recognizes and addresses the strategic interdependence of energy and environmental technology requirements within an overall sustainability framework in support of our installations, weapons systems and war fighters. This name change also directly supports the DoD's proactive implementation of Executive Order 13423, "Strengthening Federal Environmental, Energy and Transportation Management."

Our broadly encompassing and growing mobile, personal and stationary advanced energy technology requirements include infrastructure, alternative and synthetic fuels, surety, renewables, storage, distribution, advanced power, micro-grids, transportation, systems integration and others. Further, to train as we fight, validated energy and environmental technologies need to be available and implemented at our installations. The NDCEE will continue to demonstrate, validate, and transfer these technologies supporting our integrated environment, safety, occupational health and energy objectives with full consideration of the triple bottom line of mission, environment and community.

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

	FY 2012	FY 2013	FY 2014
Title: Management and operations of the NDCEE by the prime contractor.	1.300	1.468	0.330
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>		PROJECT 035: <i>National Defense Cntr For Enviro Excellence</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: Consists of the management and operation expenses required by the prime contractor to operate the NDCEE program.</p> <p>FY 2012 Accomplishments: Consisted of management and operations of the NDCEE by the prime contractor.</p> <p>FY 2013 Plans: Management and operations of the NDCEE by the prime contractor.</p> <p>FY 2014 Plans: Will consist of management and operations of the NDCEE by the prime contractor.</p>				
<p>Title: Industrial base integration, operation of the NDCEE environmental technology facility, and environmental information analysis.</p> <p align="right">Articles:</p> <p>Description: Funds the industrial base integration, operation of the NDCEE environmental technology facility, and environmental information analysis by the NDCEE prime contractor.</p> <p>FY 2012 Accomplishments: Funded industrial base integration, operation of the NDCEE environmental technology facility, and environmental information analysis.</p> <p>FY 2013 Plans: Industrial base integration, operation of the NDCEE environmental technology facility, and environmental information analysis.</p> <p>FY 2014 Plans: Will fund industrial base integration, operation of the NDCEE environmental technology facility, and environmental information analysis.</p>		0.500 0	0.500 0	0.250
<p>Title: Conduct demonstration/validation of environmentally acceptable technologies that enhance military readiness and reduce production, operating, and/or disposal costs.</p> <p align="right">Articles:</p> <p>Description: Supports the demonstration and validation of environmental, safety, occupational health, and energy technologies that support the Army's Environmental Quality Technology mission. The objective is to determine if the technology is ready for implementation that will enhance military readiness and reduce production, operating, and/or disposal costs.</p> <p>FY 2012 Accomplishments:</p>		2.282 0	1.859 0	0.847

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>	PROJECT 035: <i>National Defense Cntr For Enviro Excellence</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Conducted demonstrations of environmental technologies. Demonstrations conducted included a Department of Defense facility evaluation for the Chesapeake Bay Total Daily Maximum Load watershed implementation plan; a materiel acquisition life cycle assessment pilot test; and a sustainable procurement demonstration to support military installations.</p> <p>FY 2013 Plans: Conduct demonstration/validation of environmentally acceptable technologies that enhance military readiness and reduce production, operating, and/or disposal costs.</p> <p>FY 2014 Plans: Will conduct demonstration/validation of environmentally acceptable technologies that enhance military readiness and reduce production, operating, and/or disposal costs. Technologies to be demonstrated will consist of technologies selected Army's Environmental Technology Integrated Product Team, the operational level component of the Army's Environmental Quality Technology Program.</p>				
<p>Title: NDCEE Government program management during contract negotiations and during project formulation, execution, and technology transfer.</p> <p align="right">Articles:</p> <p>Description: Funds the government program management office for the NDCEE. This consists of personnel assisting in contract negotiations and during project formulation, execution, and technology transfer.</p> <p>FY 2012 Accomplishments: Funded NDCEE Government program management during contract negotiations and during project formulation, execution, and technology transfer.</p> <p>FY 2013 Plans: NDCEE Government program management during contract negotiations and during project formulation, execution, and technology transfer.</p> <p>FY 2014 Plans: Will fund NDCEE Government program management during contract negotiations and during project formulation, execution, and technology transfer.</p>		0.294 0	0.405 0	0.775
Accomplishments/Planned Programs Subtotals		4.376	4.232	2.202
C. Other Program Funding Summary (\$ in Millions)				
N/A				

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>	PROJECT 035: <i>National Defense Cntr For Enviro Excellence</i>

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

Remarks

D. Acquisition Strategy

The NDCEE is a national asset focused on DoD applications that include technology transfer to appropriate DoD organizations. The NDCEE fosters an outreach program to describe its products and capabilities that include publication of results and participation in professional meetings, symposia, conferences, and appropriate coordination with industry. The management strategy for the NDCEE centers on a DoD Executive Advisory Board (EAB) chaired by the DoD NDCEE Executive Agent on behalf of the Assistant Deputy Under Secretary of Defense for Environment and composed of senior DoD leadership to oversee NDCEE operations. The EAB is supported by an EAB Working Group (EABWG) that includes staff members from each of the offices represented on the EAB. The EABWG coordinates all NDCEE activities and reports back to the EAB Principals. The EABWG is, in turn, supported by a Technical Working Group that addresses the details of NDCEE program execution. The Army's Environmental Quality Technology Program also assists in the formulation of suggested technology projects to be demonstrated within the NDCEE Program. The contracting strategy of the NDCEE is based on using an NDCEE Contracting Officer's Representative to validate all the contractual portions of the NDCEE and by technical monitors (TM) to oversee the technical aspects of each contracted task. A prime contractor operates NDCEE test facility to validate environmentally compatible technologies on a representative "shop floor". The NDCEE accounts for and conducts work for: (1) direct funded Army tasks; (2) reimbursable tasks from within DoD and from other Government agencies; and (3) when applicable Congressionally directed and funded tasks.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>	PROJECT 035: <i>National Defense Cntr For Enviro Excellence</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	RDECOM:Aberdeen, MD	21.847	0.508	Aug 2012	0.405	Aug 2013	0.775		-		0.775	Continuing	Continuing	Continuing
Subtotal			21.847	0.508		0.405		0.775		0.000		0.775			

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			
To Be Determined	TBD	To Be Determined:To Be Determined	8.797	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			8.797	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			
Technical Data	Various	Concurrent Technologies Corporation (CTC):Johnstown, PA	19.367	1.780	Feb 2012	1.968	Mar 2013	0.580		-		0.580	Continuing	Continuing	Continuing
Subtotal			19.367	1.780		1.968		0.580		0.000		0.580			

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 Testing and Evaluation	Various	Concurrent Technologies Corp.:Johnstown, PA	21.889	2.088	Feb 2012	1.859	Mar 2013	0.847		-		0.847	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>	PROJECT 04E: <i>Environmental Restoration Tech Validation</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
04E: <i>Environmental Restoration Tech Validation</i>	-	0.412	0.399	0.431	-	0.431	0.000	0.317	0.280	0.317	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

Environmental Information Technology Management (EITM) includes support for Knowledge Based Corporate Reporting system (KBCRS) and Defense Environmental Network Information Exchange (DENIX). This new request for research, development, test and evaluation (RDTE) is to enhance KBCRS to a net-centric all services transactional system of record and reporting tool set. Also includes EITM upgrades to incorporate new security and other requirements.

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

	FY 2012	FY 2013	FY 2014
Title: Environmental Restoration Technology Validation	0.412	0.399	0.431
Articles:	0	0	
Description: Conducts system enhancements as required to meet data management requirements for the Knowledge Based Corporate Reporting System and the Defense Environmental Network Information Exchange components.			
FY 2012 Accomplishments: Provided system upgrades and interfaces to support users with reporting requirements, for example the Annual Report to Congress.			
FY 2013 Plans: Provide system upgrades to support users with reporting requirements, for example the Annual Report to Congress.			
FY 2014 Plans: Will provide system upgrades and interfaces to support users with reporting requirements, for example the Annual Report to Congress and Chemical Management Enterprise Information Integration.			
Accomplishments/Planned Programs Subtotals	0.412	0.399	0.431

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>	PROJECT 04E: <i>Environmental Restoration Tech Validation</i>

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

Remarks

D. Acquisition Strategy

The Environmental Information Technology Management (EITM) Program is an Office of the Secretary of Defense sponsored program that was assigned to the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health as the Department of Defense (DoD) Executive Agent by the Under Secretary of Defense for Acquisition, Technology and Logistics in 2001. The DoD Directive 4715.1E defined EITM mission is to ensure efficient use of enterprise environment, safety and occupational health (ESOH) corporate information management processes by providing and sustaining requirement-driven ESOH corporate data management, Congressional-reporting and public outreach tools to the DoD, and other DoD stakeholders. Funding provided for this program will allow EITM to develop a Deputy Under Secretary of Defense for Installations and Environment directed Chemical Management Enterprise Information Integration capability that will allow Army net-centric hazardous material and ESOH 2.0 NetCentric data management capabilities per the Secretary of the Army Directive 2009-03 "Army Data Management" and DoD Directive 8320.2 "Data Sharing in a Net-Centric Department of Defense." Prior to funding being committed, Army and DoD environmental information technology stakeholders meet to determine which high priority EITM interface requirements need upgrades to incorporate new security and other information technology requirements.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603779A: <i>Environmental Quality Technology - Dem/Val</i>	PROJECT 04E: <i>Environmental Restoration Tech Validation</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 testing and evaluation for required network interfaces.	C/FFP	Delta Resources:Arlington, VA	0.000	0.412	Feb 2012	0.399	Mar 2013	0.431		-		0.431	0.000	1.242	0.000
Subtotal			0.000	0.412		0.399		0.431		0.000		0.431	0.000	1.242	0.000
Project Cost Totals			0.000	0.412		0.399		0.431		0.000		0.431	0.000	1.242	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL</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	-	177.122	278.018	272.384	-	272.384	325.584	97.886	71.000	21.699	Continuing	Continuing
367: <i>Win-T Increment 2 -Initial Networking</i>	-	9.821	2.786	1.100	-	1.100	0.000	21.508	0.000	0.000	Continuing	Continuing
372: <i>WIN-T Increment 3 - Full Networking</i>	-	167.301	275.232	271.284	-	271.284	325.584	76.378	71.000	21.699	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
 Inc 2 PB 2013 \$5.999
 Inc 2 PB 2014 \$1.100
 Funding for Inc 2 in FY 2014 was reduced because of changes in the test schedule.

Inc 3 PB 2013 \$76.252
 Inc 3 PB 2014 \$271.284
 Delta \$195.032
 Funding for Inc 3 in FY 2014 increased to support the updated schedule of the Development Test (DT), New Equipment Training (NET) and Limited User Test (LUT). Inc 3 will provide production representative hardware for the DT/NET/LUT for the Inc 3 configuration items to include JC4ISR radio, antenna and WIN-T Communications Payload (WCP) for the air tier.

A. Mission Description and Budget Item Justification

The Defense Acquisition Executive (DAE), through the Nunn-McCurdy certification process, certified a restructured WIN-T program on June 5, 2007. The certification Acquisition Decision Memorandum (ADM) stated that the Army will restructure the WIN-T Major Defense Acquisition Program (MDAP) to absorb the former Joint Network Node (JNN) Network program. It further stated that the restructured program will consist of four Increments: Inc 1, Inc 2, Inc 3, and Inc 4.

WIN-T is key to the Army's Network Modernization program. The WIN-T program's focus is to design, develop, produce and field the Future Modular Force transport network, while leveraging mature technologies that can enhance the Current Modular Force to operate in an emerging noncontiguous environment.

Inc 2 (PE 643782/367) FY 2014 funds will support the Follow-on Production Award.

Inc 3 (PE 643782/372) FY 2014 funds will continue the Engineering Manufacturing Development (EMD) phase.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL</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	185.819	278.018	82.251	-	82.251
Current President's Budget	177.122	278.018	272.384	-	272.384
Total Adjustments	-8.697	0.000	190.133	-	190.133
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-8.697	-	-4.899	-	-4.899
• Other Adjustments 2	-	-	195.032	-	195.032

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL</i>	PROJECT 367: <i>Win-T Increment 2 -Initial Networking</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
367: <i>Win-T Increment 2 -Initial Networking</i>	-	9.821	2.786	1.100	-	1.100	0.000	21.508	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

Warfighter Information Network Tactical (WIN-T) Increment 2 provides the Army with initial On-The-Move (OTM) networking capability. The Increment 2 network retains capabilities delivered by WIN-T Increment 1 and by leveraging proven Government and Commercial technologies, adds greater network throughput and automated Network Management to optimize planning (to include spectrum use), initialization, monitoring and troubleshooting. WIN-T Increment 2 extends the network in maneuver Brigade Combat Teams (BCTs) to Company level for the first time. Using equipment mounted on combat platforms, WIN-T Increment 2 delivers a mobile capability that reduces reliance on fixed infrastructure and allows key leaders to move on the battlefield while retaining Situational Awareness and Mission Command capabilities. Using the Highband Networking Radio, with the Highband Networking Waveform and high performance antennas, the WIN-T Increment 2 Line-of-Sight network offers an adaptive 30 Megabit per second (Mbps) aggregate throughput to key leaders in their Command Post or in their vehicle. The WIN-T Increment 2 network is self-forming, which means that it automatically creates transmission paths based on terrain and environmental conditions; and self-healing, meaning that the paths will automatically re-route traffic to complete network transactions and calls even if one or more nodes break down or loses connectivity. This offers greater network reliability and better end-to-end connectivity than traditional point-to-point networks. WIN-T Increment 2 introduces the network management capability needed to keep the mobile and dispersed forces networked together through automated planning, initialization, monitoring, and troubleshooting. Finally, WIN-T adopts "Colorless Core" technology that encrypts both classified and unclassified user information in the network and minimizes the number of users on the "core" of the network. The Colorless Core allows commanders to utilize the tactical network without fear of the enemy intercepting information. Colorless Core is a technical insertion in the WIN-T Increment 1b network which enables information sharing between Increment 1b and Increment 2.

The WIN-T Increment 2 capabilities are identified for fielding to Armored, Infantry, and Stryker BCTs and Division Headquarters. The Point of Presence and the Tactical Communications Node have both satellite and Line-of-Sight communication capability. The Soldier Network Extension provides satellite communication only. The Point of Presence and the Tactical Communications Node are deployed at Division, Brigade and Battalion echelons. The Soldier Network Extension serves as the S3 vehicle at Battalion level and is also deployed down to Company level.

WIN-T Increment 3 mature technologies will be inserted into Increment 2 units.

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

	FY 2012	FY 2013	FY 2014
Title: Test and Evaluation	9.083	2.583	1.033

PE 0603782A: *WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL*
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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER</i> <i>INFORMATION NETWORK-TACTICAL -</i> <i>DEM/VAL</i>	PROJECT 367: <i>Win-T Increment 2 -Initial Networking</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: Testing and Evaluation</p> <p>FY 2012 Accomplishments: WIN-T Increment 2 provided government test support for New Equipment Training, Cold Region Test, Force Development Test and Experimentation (FDT&E), Initial Operational Test (IOT) as well as the support required for the Full Rate Production Decision Review.</p> <p>FY 2013 Plans: WIN-T Increment 2 will support First Unit Equipped and Follow-On Test and Evaluation (FOT&E), Initial Operational Capability (IOC) and Full Rate Production Decision Review.</p> <p>FY 2014 Plans: WIN-T Increment 2 will support follow-on production award.</p>	0	0	
<p>Title: Product Development</p> <p>Description: Increment 2 continues the development of Inc 2 system hardware and software development.</p> <p>FY 2014 Plans: Support for the Follow-on Production Award.</p>	0.000	0.000	0.067
<p>Title: Management Services</p> <p align="right">Articles:</p> <p>Description: System Engineering and Program Management Support</p> <p>FY 2012 Accomplishments: Program Management support.</p> <p>FY 2013 Plans: Program Management support.</p>	0.738 0	0.203 0	0.000
Accomplishments/Planned Programs Subtotals	9.821	2.786	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL</i>	PROJECT 367: <i>Win-T Increment 2 -Initial Networking</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>
• WIN-T Inc 2: <i>Procurement</i>	761.105	731.068	680.438		680.438	598.230	548.960	154.606	200.959	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Defense Acquisition Executive (DAE), through the Nunn-McCurdy certification process, certified a restructured WIN-T program on June 5, 2007. The certification Acquisition Decision Memorandum (ADM) stated that the Army will restructure the WIN-T Major Defense Acquisition Program (MDAP) to absorb the former Joint Network Node (JNN) Network program. It further stated that the restructured program will consist of four Increments: Incs 1, 2, 3, and 4.

Inc 2 fields new capabilities to the current force. Inc 2 accomplishes this with planned early fieldings of mature technologies from Inc 3. Inc 2 will be upgraded with technology from Inc 3 in the form of technology inserts. A Follow-on Test and Evaluation (FOTE) will be conducted in FY2013 followed by a Full Rate Production (FRP) decision review. There is no plan to rebuy and replace Inc 2 with Inc 3. These technical inserts will upgrade the Inc 2 architecture to include the following elements: Joint Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (JC4ISR) radio, Highband Radio Frequency Unit Multiband Terrestrial antenna (HRFU-MT) (Dual band C/Ku), and Network Operations (NetOps) Build 3.0. The JC4ISR radio and antenna upgrades will be placed in the Tactical Communication Node (TCN) v1, Point of Presence (PoP) v1, and Tactical Relay Tower (TR-T) v1 and will upgrade those configuration items to TCN v1A, PoP v1A, and TR-T v1A. The Inc 3 production program will also provide retrofits to Inc 2 fielded units. Inc 3 will tech-insert the Modular Communications Node Advanced Enclave (MCN-AE) to all the Inc 2 units. Inc 3 will also provide the JC4ISR radio and antenna retrofits for the Inc 2 units procured before FY2016 and for TR-T inserts to ensure interoperability. Increment 3 introduces the air tier through the use of Unmanned Aerial Systems (UAS) and a Top Secret Sensitive Compartmented Information (SCI) Local Area Network (LAN) with a port for National Security Agency intranet (NSAnet).

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL</i>	PROJECT 367: <i>Win-T Increment 2 -Initial Networking</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	Various	Various:Various	25.878	0.738		0.203		-		-		-	Continuing	Continuing	Continuing
Subtotal			25.878	0.738		0.203		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			
Platform Integration	Various	Various:Various	19.641	-		-		-		-		-	Continuing	Continuing	Continuing
WIN-T EMD Contract	Various	General Dynamics C4 Systems Inc:Taunton, MA	138.598	-		-		0.067		-		0.067	Continuing	Continuing	Continuing
Subtotal			158.239	0.000		0.000		0.067		0.000		0.067			

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 Services adn Research Studies	Various	General Dynamics C4 Systems Inc:Taunton, MA	7.086	-		-		-		-		-	Continuing	Continuing	0.000
Subtotal			7.086	0.000		0.000		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			
Test and Modeling & Simulation	Various	Various:Various	51.709	9.083		2.583		1.033		-		1.033	Continuing	Continuing	Continuing
Subtotal			51.709	9.083		2.583		1.033		0.000		1.033			

PE 0603782A: *WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL*
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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER</i> <i>INFORMATION NETWORK-TACTICAL -</i> <i>DEM/VAL</i>	PROJECT 367: <i>Win-T Increment 2 -Initial Networking</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 2 NET	■																											
Cold Region Test	■																											
Force Development Test and Experimentation			■																									
Initial Operational Test			■																									
Delivery Order Award				■																								
First Unit Equipped						■																						
Follow-On Test and Evaluation							■																					
Initial Operating Capability								■																				
FRP Decision Review								■																				
Full Rate Production									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Delivery Order 2 Award								■																				
Follow-on Production Contract Award										■																		
Delivery Order 3 Award												■																
Delivery Order 4 Award																■												
Army Decision Review																■												
Production Qualification Test - Contractor																				■								
Follow-on Operational Test																								■				
Army Integrated Program Review																											■	
Full Operational Capability																												■

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER</i> <i>INFORMATION NETWORK-TACTICAL -</i> <i>DEM/VAL</i>	PROJECT 367: <i>Win-T Increment 2 -Initial Networking</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 2 NET	2	2012	2	2012
Cold Region Test	2	2012	2	2012
Force Development Test and Experimentation	3	2012	3	2012
Initial Operational Test	3	2012	3	2012
Delivery Order Award	4	2012	4	2012
First Unit Equipped	1	2013	1	2013
Follow-On Test and Evaluation	3	2013	3	2013
Initial Operating Capability	4	2013	4	2013
FRP Decision Review	4	2013	4	2013
Full Rate Production	4	2013	4	2018
Delivery Order 2 Award	4	2013	4	2013
Follow-on Production Contract Award	2	2014	2	2014
Delivery Order 3 Award	1	2015	1	2015
Delivery Order 4 Award	3	2016	3	2016
Army Decision Review	3	2016	3	2016
Production Qualification Test - Contractor	3	2017	3	2017
Follow-on Operational Test	1	2018	1	2018
Army Integrated Program Review	3	2018	3	2018
Full Operational Capability	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL</i>	PROJECT 372: <i>WIN-T Increment 3 - Full Networking</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
372: <i>WIN-T Increment 3 - Full Networking</i>	-	167.301	275.232	271.284	-	271.284	325.584	76.378	71.000	21.699	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

Warfighter Information Network Tactical (WIN-T) Increment 3 (Inc 3) provides full network mobility and introduces an additional Line-of-Sight link using an airborne platform, building on the capabilities of previous WIN-T Increments. WIN-T Inc 3 connects all users to each other from theater down to the maneuver company level, to Joint and multinational elements, and to the Defense Information System Network (DISN). WIN-T Inc 3 is key to the Army's Network Modernization program. It provides a leap forward in network capacity with improved system reliability and robustness, made possible by the new Highband Networking Waveform (HNW) version 3.0 embedded on the Joint Command, Control, Communications, Computers, Intelligence, Surveillance (JC4ISR) radios. The technology advances in the combination of the JC4ISR radios and HNW will provide a throughput capability four times greater than currently fielded networking radios. The Air Tier implementation of the JC4ISR radios and HNW 3.0 will offload significant amounts of traffic from satellites with reduced operating cost to the Army, freeing satellite bandwidth and providing the Commander the ability to allocate bandwidth resources at the critical point on the battlefield. WIN-T Inc 3 Network Operations (NetOps) software provides the on the move capability to meet the Global Information Grid (GIG) NetCentric Vision including Information Assurance and Network Centric Enterprise Services with mature planning, monitoring, and controlling capabilities; additionally implementation of the WIN-T Inc 3 NetOps solution supports the Army's NetOps convergence goals. WIN-T Inc 3 mature technologies will be inserted into WIN-T Inc 2 units.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Product Development</p> <p style="text-align: right;">Articles:</p> <p>Description: Increment 3 Engineering Manufacturing Development (EMD) continues development of Inc 3 system, hardware and software development, prototype manufacturing of test assets for the Inc 3 system.</p> <p>FY 2012 Accomplishments: Increment 3 continued the detailed design, prototype development and conducted Engineering Manufacturing and Development (EMD) testing of Air Tier using WIN-T Communications Payload.</p> <p>FY 2013 Plans:</p>	149.531 0	245.171 0	234.494

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER</i> <i>INFORMATION NETWORK-TACTICAL -</i> <i>DEM/VAL</i>		PROJECT 372: <i>WIN-T Increment 3 - Full Networking</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
Increment 3 completes detailed design of network architecture, waveform, radio, Aerial Tier Payload and continues software coding of waveform and Network Operations. Conducts Critical Design Review (CDR) and continues integration of aerial tier payload with Grey Eagle Unmanned Aerial System and purchases long lead items for Limited User Test (LUT) prototypes. FY 2014 Plans: Increment 3 begins integration of LUT prototypes. Completes software code for Network Operations, completes software integration and testing of waveform, completes integration and testing of aerial tier payload on Grey Eagle Unmanned Aerial System which provides Air Worthiness Certification. Inc 3 begins platform integration and development of training materials and technical manuals.	FY 2012	FY 2013	FY 2014	
Title: Support Cost	4.714	4.799	5.878	
Articles:	0	0		
Description: Technical Engineering Services and Research Studies				
FY 2012 Accomplishments: Technical Engineering Services and Research Studies				
FY 2013 Plans: Technical Engineering Services and Research Studies				
FY 2014 Plans: Technical Engineering Services, Research Studies and NIE testing support.				
Title: Test and Evaluation	0.718	11.119	11.079	
Articles:	0	0		
Description: Testing and Evaluation				
FY 2012 Accomplishments: Increment 3 completed Aerial Tier payload testing on surrogate aircraft.				
FY 2013 Plans: Increment 3 continues analysis of multi node network. Conducts component level development tests and continues testing of Network Operations Build and Modular Communications Node Advanced Enclave (MCN-AE) for insertion of mature technology.				
FY 2014 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
Increment 3 continues planning for LUT. Design and develop test plans in support of LUT. The Government will conduct Air Worthiness Testing of Aerial Tier payload on Grey Eagle Unmanned Aerial System. Continue annual testing of the Network Operations Builds. Conduct HNW 3.0 parameter analysis using simulator and develops multi-node emulator to support future scalability simulation work.			
Title: Management Services	12.338	14.143	19.833
Articles:	0	0	
Description: Provides System Engineering and Program Management Support.			
FY 2012 Accomplishments: Continued System Engineering and Program Management Support.			
FY 2013 Plans: Continues System Engineering and Program Management Support.			
FY 2014 Plans: Continues Program Management Support.			
Accomplishments/Planned Programs Subtotals	167.301	275.232	271.284

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>
• Inc 3: <i>Procurement</i>						236.510	412.946	740.768	1,851.317	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Defense Acquisition Executive (DAE), through the Nunn-McCurdy certification process, certified a restructured WIN-T program on June 5, 2007. The certification Acquisition Decision Memorandum (ADM) stated that the Army will restructure the WIN-T Major Defense Acquisition Program (MDAP) to absorb the former Joint Network Node (JNN) Network program. It further stated that the restructured program will consist of four Increments: Incs 1, 2, 3, and 4.

An evolutionary acquisition strategy is being utilized to provide for the timely insertion of new technologies into Army communication systems by adhering to the basic principles of the DoD Modular Open Systems Approach (MOSA). This allows the Army to keep pace with changing commercial technology and maintain required interoperability with other joint, strategic and commercial standards-based networks. Building on previous increments, Inc 3 provides better connectivity and greater network access via JC4ISR radio and antenna, Network Centric Waveform (NCW), Highband Networking Waveform (HNW) version 3.0, and 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER</i> <i>INFORMATION NETWORK-TACTICAL -</i> <i>DEM/VAL</i>	PROJECT 372: <i>WIN-T Increment 3 - Full Networking</i>
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Operations. It manages, prioritizes, and protects information through NetOps while reducing organizational and operational support. It ensures communications interoperability with Joint, Allied, Coalition, Current Force, and Commercial voice and data networks. Inc 3 shall be interoperable with the other WIN-T increments while maintaining interoperability with the Army currently fielded transport systems. The technologies in Inc 3 have matured to a level that provide significant capability enhancement over the current network. Inc 3 technology is being tested and released over time and, once proven; Inc 3 technology will be available for insertion into WIN-T Increment 1 and Increment 2.

The ADM of May 18, 2009 approved an initial Acquisition Program Baseline (APB) for Inc 3. A follow-on Increment 3 ADM on July 31, 2009 permitted the obligation of remaining FY2009 Research, Development, Test and Evaluation (RDT&E) funds to resource EMD efforts including development of the Joint Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance radio (JC4ISR) to support the air-tier capability. A revised ADM was approved on October 22, 2010. Inc 3 received approval for program restructure at the October 31, 2011 Army Configuration Steering Board (CSB). Efforts in accordance with the restructured program are performed under the current Engineering Manufacturing Development (EMD) contract. A Follow-on EMD contract is anticipated to be awarded in 3QFY13 followed by a Critical Design Review (CDR) in 4QFY13. A Production Readiness Review (PRR) is scheduled for 2QFY16 leading to a Milestone C decision in 3QFY16.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER INFORMATION NETWORK-TACTICAL - DEM/VAL</i>	PROJECT 372: <i>WIN-T Increment 3 - Full Networking</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	Various	Various:Various	73.532	12.338		14.143		19.833		-		19.833	Continuing	Continuing	Continuing
Subtotal			73.532	12.338		14.143		19.833		0.000		19.833			

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			
Increment 3 Engineering Manufacturing and Development	Various	General Dynamics C4 Systems Inc:Taunton, MA	659.050	138.189		212.782		234.494		-		234.494	Continuing	Continuing	Continuing
Inc 3 Data Rights	Various	Harris GCSD:Melbourne, FL	0.000	4.417		-		-		-		-	0.000	4.417	0.000
Platform Integration	Various	Various:Various	5.800	6.925		32.389		-		-		-	Continuing	Continuing	Continuing
Subtotal			664.850	149.531		245.171		234.494		0.000		234.494			

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 Services and Research Studies	Various	General Dynamics C4 Systems Inc:Taunton, MA	18.249	4.714		4.799		5.878		-		5.878	Continuing	Continuing	Continuing
Subtotal			18.249	4.714		4.799		5.878		0.000		5.878			

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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
Follow-on EMD Contract Award																												
Critical Design Review																												
Development Test/New Equipment Training/ Limited User Test																												
Production Readiness Review																												
Milestone C																												
Contract Award																												
Delivery Order 1																												
Delivery Order 2																												
Production Qualification Test - Contractor																												
Production Qualification Test - Government																												
Logistics Demonstration																												
New Equipment Training																												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603782A: <i>WARFIGHTER</i> <i>INFORMATION NETWORK-TACTICAL -</i> <i>DEM/VAL</i>	PROJECT 372: <i>WIN-T Increment 3 - Full Networking</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Follow-on EMD Contract Award	3	2013	3	2013
Critical Design Review	4	2013	4	2013
Development Test/New Equipment Training/Limited User Test	3	2015	1	2016
Production Readiness Review	1	2016	2	2016
Milestone C	3	2016	3	2016
Contract Award	3	2016	3	2016
Delivery Order 1	1	2017	1	2017
Delivery Order 2	1	2018	1	2018
Production Qualification Test - Contractor	1	2018	3	2018
Production Qualification Test - Government	3	2018	3	2018
Logistics Demonstration	4	2018	4	2018
New Equipment Training	4	2018	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and 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	-	4.612	4.961	3.874	-	3.874	6.069	5.601	5.146	5.239	Continuing	Continuing
691: <i>NATO RSCH & DEVEL</i>	-	4.612	4.961	3.874	-	3.874	6.069	5.601	5.146	5.239	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 implements the provisions of Title 10 U.S. Code, Section 2350a, Cooperative Research and Development (R&D) Projects: Allied Countries. The objective is to improve, through the application of emerging technologies, the conventional defense capabilities of the United States and our cooperative partners, including the North Atlantic Treaty Organization (NATO), U.S. major non-NATO allies and Friendly Foreign countries. Through technology sharing and joint equipment development these projects help reduce U.S. acquisition costs and leverage important technologies for the Army Transformation and the development of the Future Combat system. Cooperative efforts also improve multinational force compatibility with potential coalition partners through the development and use of similar equipment and improved interfaces. The program focuses specifically on international cooperative technology demonstration, validation, and interoperability of Army weapon and command, control, communications and information (C3I) systems, including the NATO Defense Against Terrorism initiatives. Projects are implemented through international agreements with foreign partners that define scope, cost and work sharing arrangements, management, contracting, security, data protection and third party transfers. Funds are used to pay for only the U.S. work share that occurs in the United States at U.S. Government and U.S. contractors facilities.

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	4.839	4.961	5.599	-	5.599
Current President's Budget	4.612	4.961	3.874	-	3.874
Total Adjustments	-0.227	0.000	-1.725	-	-1.725
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.227	-			
• Adjustments to Budget Years	-	-	-1.725	-	-1.725

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>	PROJECT 691: <i>NATO RSCH & DEVEL</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
691: <i>NATO RSCH & DEVEL</i>	-	4.612	4.961	3.874	-	3.874	6.069	5.601	5.146	5.239	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 implements the provisions of Title 10 U.S. Code, Section 2350a, Cooperative Research and Development (R&D) Projects: Allied Countries. The objective is to improve, through the application of emerging technologies, the conventional defense capabilities of the United States and our cooperative partners, including the North Atlantic Treaty Organization (NATO), U.S. major non-NATO allies and Friendly Foreign countries. Through technology sharing and joint equipment development these projects help reduce U.S. acquisition costs and leverage important technologies for the Army Transformation and the development of the Future Combat system. Cooperative efforts also improve multinational force compatibility with potential coalition partners through the development and use of similar equipment and improved interfaces. The program focuses specifically on international cooperative technology demonstration, validation, and interoperability of Army weapon and command, control, communications and information (C3I) systems, including the NATO Defense Against Terrorism initiatives. Projects are implemented through international agreements with foreign partners that define scope, cost and work sharing arrangements, management, contracting, security, data protection and third party transfers. Funds are used to pay for only the U.S. work share that occurs in the United States at U.S. Government and U.S. contractors facilities.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Scientific and Technology Enterprise Management</p> <p style="text-align: right;">Articles:</p> <p>Description: Scientific and Technology Enterprise Management (STEM)/International Online (IOL) Development and Implementation NATO/International Cooperative R&D (AR 70-41) and International Acquisition (AR 70-1, AR 70-3)</p> <p>FY 2012 Accomplishments: The goal of this program was to expand worldwide allied standardization and interoperability through cooperative research and development (R&D) and technology sharing per SECDEF guidance and especially in support of the U.S. Army. This program funded the travel costs and administrative support (studies, analysis, interpretation, equipment, etc.) required to participate in internationally, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), Defense Against Terrorism (DAT) and to pursue new cooperative R&D initiatives and international cooperative agreements such as memoranda of understanding. This program also included: the United States' share of costs of the NATO Civil Budget, Chapter IX, which funded the NATO Industrial Advisory Group (NIAG) and the Special Fund for Cooperative Planning (U. S. Army is Executive Agent for this</p>	<p>0.819</p> <p>0</p>	<p>0.897</p> <p>0</p>	<p>0.699</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>NATO bill); partially funded the Five Power Senior National Representatives, Army [SNR (A)], the Technical Cooperative Program, Bilateral SNR(A)s, and Army armaments working groups with many nations.</p> <p>FY 2013 Plans: The goal of this program is to expand worldwide allied standardization and interoperability through cooperative research and development (R&D) and technology sharing per SECDEF guidance and especially in support of the U.S. Army. This program funds the travel costs and administrative support (studies, analysis, interpretation, equipment, etc.) required to participate in internationally, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), Defense Against Terrorism (DAT) and to pursue new cooperative R&D initiatives and international cooperative agreements such as memoranda of understanding. This program also includes: the United States' share of costs of the NATO Civil Budget, Chapter IX, which funds the NATO Industrial Advisory Group (NIAG) and the Special Fund for Cooperative Planning (U. S. Army is Executive Agent for this NATO bill); partially funds the Five Power Senior National Representatives, Army [SNR (A)], the Technical Cooperative Program, Bilateral SNR(A)s, and Army armaments working groups with many nations.</p> <p>FY 2014 Plans: The goal of this program will be to expand worldwide allied standardization and interoperability through cooperative research and development (R&D) and technology sharing per SECDEF guidance and especially in support of the U.S. Army. This program will fund the travel costs and administrative support (studies, analysis, interpretation, equipment, etc.) required to participate in internationally, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), Defense Against Terrorism (DAT) and to pursue new cooperative R&D initiatives and international cooperative agreements such as memoranda of understanding. This program will also include: the United States' share of costs of the NATO Civil Budget, Chapter IX, which funds the NATO Industrial Advisory Group (NIAG) and the Special Fund for Cooperative Planning (U. S. Army is Executive Agent for this NATO bill); partially will fund the Five Power Senior National Representatives, Army [SNR (A)], the Technical Cooperative Program, Bilateral SNR(A)s, and Army armaments working groups with many nations.</p>				
<p>Title: Multilateral Interoperability Program</p> <p align="right">Articles:</p> <p>Description: Multilateral Interoperability Program (MIP) (Partners: Germany, France, United Kingdom, Canada, Italy): Continued integration work from the Command and Control Systems Interoperability Program (C2SIP) into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extend the effort into a sustainable program to incorporate lessons learned into national systems (e.g. AFATDS, FADC2).</p> <p>FY 2012 Accomplishments:</p>		0.645 0	0.693 0	0.540

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2012
				FY 2013
				FY 2014
Continued integration work from the Command and Control Systems Interoperability Program into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extended the effort into a sustainable program to incorporate lessons learned into national systems (e.g. AFATDS, FADC2). FY 2013 Plans: Continues integration work from the Command and Control Systems Interoperability Program into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and also extend the effort into a sustainable program to incorporate lessons learned into national systems (e.g. AFATDS, FADC2). FY 2014 Plans: Will continue integration work from the Command and Control Systems Interoperability Program into an Advanced Concept Technology Demonstration (ACTD) to achieve NATO levels four (messaging) and five (database) interoperability and will also extend the effort into a sustainable program to incorporate lessons learned into national systems (e.g. AFATDS, FADC2).				
Title: Low Level Air Defense Interoperability				0.199
				0.224
				0.170
				0
				0
Articles:				
Description: Low Level Air Defense Interoperability (LLAPI) (Partners: Major NATO Allies): The objective of this program is to successfully demonstrate Command and Control (C2) interoperability among the participant nations' Short Range Air Defense (shared) assets for automated air picture exchange.				
FY 2012 Accomplishments: The objective of this program was to successfully demonstrate Command and Control (C2) interoperability among the participant nations' Short Range Air Defense (shared) assets for automated air picture exchange.				
FY 2013 Plans: The objective of this program is to successfully demonstrate Command and Control (C2) interoperability among the participant nations' Short Range Air Defense (shared) assets for automated air picture exchange.				
FY 2014 Plans: The objective of this program will be to successfully demonstrate Command and Control (C2) interoperability among the participant nations' Short Range Air Defense (shared) assets for automated air picture exchange				
Title: Multi-National Network Enabled Capabilities				0.525
				0.577
				0.449
				0
				0
Articles:				
Description: Multi-National Network Enabled Capabilities (MNNEC) related Command, Control, Communications, Computers, Intelligence Surveillance and Reconnaissance (C4ISR)(Potential Partners: United Kingdom, France, Italy, Germany and major NATO Allies) MNNEC would focus on developing a single solutions standard avoiding development of multiple unique solutions				

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>	PROJECT 691: <i>NATO RSCH & DEVEL</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2012	FY 2013	FY 2014
<p>and leverage existing interoperability standards developed by NATO as well as other international forums such as the Five Power Net Centrick PA. A single solution standard will include common doctrine, technical and procedural specifications to make better use of existing information, shared data, leverage national operating picture capabilities and enable the development of interoperability of data, databases, applications, security domains and national networks architectures. The MNNEC is more than interoperability of information systems; it is the complete networking of information systems with sensors and shooters focusing on building Net-Centric interoperability among coalition tactical land components operating in a Joint Environment, focused at the Brigade and Below level, but not excluding using the services provided at higher echelons. The MNNEC has a future force focus, endeavoring to define migration strategies for Net-Centric capabilities in the 2010-2025 timeframe with part of the work to determine the time-phased implementations of a Multi-National Network Enabled Capability. The end results would be an integration of national C2/C4ISR systems into an NCES environment to include the NATO Network Enabled Capabilities (NNEC) and the 5 Powers Net Centric Project Agreement.</p> <p><i>FY 2012 Accomplishments:</i> Multi-National Network Enabled Capabilities (MNNEC) related Command, Control, Communications, Computers, Intelligence Surveillance and Reconnaissance (C4ISR)(Potential Partners: United Kingdom, France, Italy, Germany and major NATO Allies) MNNEC would focus on developing a single solutions standard avoiding development of multiple unique solutions and leverage existing interoperability standards developed by NATO as well as other international forums such as the Five Power Net Centrick PA. A single solution standard included common doctrine, technical and procedural specifications to make better use of existing information, shared data, leverage national operating picture capabilities and enable the development of interoperability of data, databases, applications, security domains and national networks architectures. The MNNEC was more than interoperability of information systems; it was the complete networking of information systems with sensors and shooters focusing on building Net-Centric interoperability among coalition tactical land components operating in a Joint Environment, focused at the Brigade and Below level, but not excluding using the services provided at higher echelons. The MNNEC had a future force focus, endeavoring to define migration strategies for Net-Centric capabilities in the 2010-2025 timeframe with part of the work to determine the time-phased implementations of a Multi-National Network Enabled Capability. The end results would be an integration of national C2/ C4ISR systems into an NCES environment to include the NATO Network Enabled Capabilities (NNEC).</p> <p><i>FY 2013 Plans:</i> Multi-National Network Enabled Capabilities (MNNEC) related Command, Control, Communications, Computers, Intelligence Surveillance and Reconnaissance (C4ISR)(Potential Partners: United Kingdom, France, Italy, Germany and major NATO Allies) MNNEC would focus on developing a single solutions standard avoiding development of multiple unique solutions and leverage existing interoperability standards developed by NATO as well as other international forums such as the Five Power Net Centrick PA. A single solution standard includes common doctrine, technical and procedural specifications to make better use of existing information, shared data, leverage national operating picture capabilities and enable the development of interoperability of data,</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>databases, applications, security domains and national networks architectures. The MNNEC is more than interoperability of information systems; it is the complete networking of information systems with sensors and shooters focusing on building Net-Centric interoperability among coalition tactical land components operating in a Joint Environment, focused at the Brigade and Below level, but not excluding using the services provided at higher echelons. The MNNEC has a future force focus, endeavoring to define migration strategies for Net-Centric capabilities in the 2010-2025 timeframe with part of the work to determine the time-phased implementations of a Multi-National Network Enabled Capability. The end results would be an integration of national C2/C4ISR systems into an NCES environment to include the NATO Network Enabled Capabilities (NNEC).</p> <p>FY 2014 Plans: Multi-National Network Enabled Capabilities (MNNEC) related Command, Control, Communications, Computers, Intelligence Surveillance and Reconnaissance (C4ISR)(Potential Partners: United Kingdom, France, Italy, Germany and major NATO Allies) MNNEC would focus on developing a single solutions standard avoiding development of multiple unique solutions and leverage existing interoperability standards developed by NATO as well as other international forums such as the Five Power Net Centrick PA. A single solution standard will include common doctrine, technical and procedural specifications to make better use of existing information, shared data, leverage national operating picture capabilities and enable the development of interoperability of data, databases, applications, security domains and national networks architectures. The MNNEC will be more than interoperability of information systems; it is the complete networking of information systems with sensors and shooters focusing on building Net-Centric interoperability among coalition tactical land components operating in a Joint Environment, focused at the Brigade and Below level, but not excluding using the services provided at higher echelons. The MNNEC will have a future force focus, endeavoring to define migration strategies for Net-Centric capabilities in the 2010-2025 timeframe with part of the work to determine the time-phased implementations of a Multi-National Network Enabled Capability. The end results would be an integration of national C2/C4ISR systems into an NCES environment to include the NATO Network Enabled Capabilities (NNEC).</p>				FY 2013
				FY 2014
<p>Title: Combat Identification</p> <p align="right">Articles:</p> <p>Description: Combat Identification (Partners: UK, Germany, France and Italy): Combat ID will pursue the extension of tasks required for implementing the associated NATO Standardization Agreement (STANAG 4579), allied participation in Coalition Combat ID Advanced Concept Technology Demonstrator (ACTD), will pursue the NATO Staff Requirement and a STANAG for the Dismounted Soldier ID.</p> <p>FY 2012 Accomplishments:</p>				0.048 0
				0.060 0
				0.043

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>CI (Partners: UK, Germany, France and Italy): Combat ID pursued the extension of tasks required for implementing the associated NATO Standardization Agreement (STANAG 4579), allied participation in Coalition Combat ID Advanced Concept Technology Demonstrator (ACTD), pursued the NATO Staff Requirement and a STANAG for the Dismounted Soldier ID.</p> <p>FY 2013 Plans: Combat Identification (Partners: UK, Germany, France and Italy): Combat ID pursues the extension of tasks required for implementing the associated NATO Standardization Agreement (STANAG 4579), allied participation in Coalition Combat ID Advanced Concept Technology Demonstrator (ACTD), pursues the NATO Staff Requirement and a STANAG for the Dismounted Soldier ID.</p> <p>FY 2014 Plans: CI (Partners: UK, Germany, France and Italy): Combat ID will pursue the extension of tasks required for implementing the associated NATO Standardization Agreement (STANAG 4579), allied participation in Coalition Combat ID Advanced Concept Technology Demonstrator (ACTD), will pursue the NATO Staff Requirement and a STANAG for the Dismounted Soldier ID.</p>				
<p>Title: Technology Research and Development Projects</p> <p align="right">Articles:</p> <p>Description: Technology Research and Development Projects (TRDP) (Partners: United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU encompasses R&D collaboration on basic, exploratory and advanced Land Warfare Concepts and Technologies that are focused on Future Combat System enabling technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.</p> <p>FY 2012 Accomplishments: Technology Research and Development Projects (TRDP) (United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU encompassed R&D collaboration on basic, exploratory and advanced Land Warfare Concepts and Technologies that were focused on Future Combat System enabling technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.</p> <p>FY 2013 Plans: Technology Research and Development Projects (TRDP) (United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU encompasses R&D collaboration on basic, exploratory and advanced Land Warfare Concepts and Technologies that are focused on Future Combat System enabling technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.</p> <p>FY 2014 Plans:</p>		0.771 0	0.795 0	0.617

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Technology Research and Development Projects (TRDP) (United Kingdom, Germany, France, Canada, Australia, Netherlands, Korea, Norway): The scope of this MOU will encompass R&D collaboration on basic, exploratory and advanced Land Warfare Concepts and Technologies that will be focused on Future Combat System enabling technologies, the maturation of which may lead to the development of technologically superior conventional weapon systems.				
Title: Senior National Representatives (Army) (SNR-(A))		0.761	0.768	0.597
		Articles: 0	0	
Description: Senior National Representatives (Army) (SNR-(A)) Projects (Partners: France, Germany, United Kingdom and Italy): Supports harmonization of programs at various levels: exchanging information, identifying knowledge gaps and conducting feasibility studies to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations. Technology Demonstrations hosted by the U.S. reps to Land Group 6, NATO Army Armaments Group (NAAG), will provide an opportunity to observe and demonstrate the current and future capability of participating NATO nations with a view to assisting future operational and materiel interoperability. Army support of NAAG studies, analysis and technology demonstrations.				
FY 2012 Accomplishments: Senior National Representatives (Army) (SNR-(A)) Projects (Partners: France, Germany, United Kingdom and Italy): Supports harmonization of programs at various levels: exchanging information, identifying knowledge gaps and conducting feasibility studies to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations. Technology Demonstrations hosted by the U.S. reps to Land Group, NATO Army Armaments Group (NAAG), provided an opportunity to observe and demonstrate the current and future capability of participating NATO nations with a view to assisting future operational and materiel interoperability. Army supported of NAAG studies, analysis and technology demonstrations.				
FY 2013 Plans: Senior National Representatives (Army) (SNR-(A)) Projects with international partners: Supports harmonization of programs at various levels: exchanging information, identifying knowledge gaps and conducting feasibility studies to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations. Technology Demonstrations hosted by the U.S. reps to Land Group, NATO Army Armaments Group (NAAG), provides an opportunity to observe and demonstrate the current and future capability of participating NATO nations with a view to assisting future operational and materiel interoperability. Army support of NAAG studies, analysis and technology demonstrations.				
FY 2014 Plans: Senior National Representatives (Army) (SNR-(A)) Projects (Partners: France, Germany, United Kingdom and Italy): Supports harmonization of programs at various levels: exchanging information, identifying knowledge gaps and conducting feasibility				

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
studies to further promote cooperative development; standardizing, fielding and roadmapping various processes; distributing the workload among the different nations. Technology Demonstrations hosted by the U.S. reps to Land Group, NATO Army Armaments Group (NAAG), will provide an opportunity to observe and demonstrate the current and future capability of participating NATO nations with a view to assisting future operational and materiel interoperability. Army support of NAAG studies, analysis and technology demonstrations.				
Title: Joint Tactical Radio System		0.252	0.263	0.202
		0	0	
Articles:				
Description: Joint Tactical Radio System (JTRS) (Partners: Japan, Sweden, UK): The participants in these programs will develop and implement Software-enabled radios as replacements to current radio systems. The projects shall be focused on maintaining interoperability as the countries pursue their own separate software radio programs. The project agreements (PAs) will include a joint development of software radio specifications, separate development and testing of software waveforms, and joint interoperability testing using the system assets developed as part of the agreements.				
FY 2012 Accomplishments: Joint Tactical Radio System (JTRS) (Japan, Sweden, UK): The participants in these programs developed and implemented Software-enabled radios as replacements to current radio systems. The projects focused on maintaining interoperability as the countries pursue their own separate software radio programs. The project agreements (PAs) included a joint development of software radio specifications, separate development and testing of software waveforms, and joint interoperability testing using the system assets developed as part of the agreements.				
FY 2013 Plans: Joint Tactical Radio System (JTRS) (Japan, Sweden, UK): The participants in these programs develops and implements Software-enabled radios as replacements to current radio systems. The projects focuses on maintaining interoperability as the countries pursue their own separate software radio programs. The project agreements (PAs) includes a joint development of software radio specifications, separate development and testing of software waveforms, and joint interoperability testing using the system assets developed as part of the agreements.				
FY 2014 Plans: Joint Tactical Radio System (JTRS) (Japan, Sweden, UK): The participants in these programs will develop and implement Software-enabled radios as replacements to current radio systems. The projects shall be focused on maintaining interoperability as the countries pursue their own separate software radio programs. The project agreements (PAs) will include a joint development of software radio specifications, separate development and testing of software waveforms, and joint interoperability testing using the system assets developed as part of the agreements.				
Title: Artillery Command and Control Interoperability		0.348	0.387	0.300

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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p align="right">Articles:</p> <p>Description: Artillery Command and Control Interoperability (ASCA) (Partners: France, Germany, Italy, UK): The Participants in this program will develop an automated software interface between their national field artillery command and control systems. The nations will be able to receive and provide mutual fire support (i.e. cannon and rocket fire) in combined operations more rapidly and with minimal errors.</p> <p>FY 2012 Accomplishments: ASCA (Partners: France, Germany, Italy, UK): The Participants in this program developed an automated software interface between their national field artillery command and control systems. The nations were able to receive and provide mutual fire support (i.e. cannon and rocket fire) in combined operations more rapidly and with minimal errors.</p> <p>FY 2013 Plans: ASCA (Partners: France, Germany, Italy, UK): The Participants in this program develops an automated software interface between their national field artillery command and control systems. The nations are able to receive and provide mutual fire support (i.e. cannon and rocket fire) in combined operations more rapidly and with minimal errors.</p> <p>FY 2014 Plans: ASCA (Partners: France, Germany, Italy, UK): The Participants in this program will develop an automated software interface between their national field artillery command and control systems. The nations will be able to receive and provide mutual fire support (i.e. cannon and rocket fire) in combined operations more rapidly and with minimal errors.</p>		0	0	
<p>Title: Force Protection Projects</p> <p align="right">Articles:</p> <p>Description: Force Protection Projects (FPP) (Partners: United Kingdom, France, Germany, Italy, Sweden, Canada): Force Protection Projects will include R&D collaborationon technologies such as Counter Rocket and Mortar (C-RAM) and Counter Improvised Explosive Devices (C-IED). Programs include Military Operations in Urban Terrain (MOUT) and a variety of Defense Against Terrorism (DAT) initiatives such as Defense Against Mortar Attacks (DAMA) and Joint Precision Air Drop System (JPADS).</p> <p>FY 2012 Accomplishments: Force Protection Projects (FPP) (United Kingdom, France, Germany, Italy, Sweden, Canada): Force Protection Projects included R&D collaborationon technologies such as Counter Rocket and Mortar (C-RAM) and Counter Improvised Explosive Devices (C-</p>		0.244 0	0.297 0	0.257

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>		PROJECT 691: <i>NATO RSCH & DEVEL</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>IED). Programs included Military Operations in Urban Terrain (MOUT) and a variety of Defense Against Terrorism (DAT) initiatives such as Defense Against Mortar Attacks (DAMA) and Joint Precision Air Drop System (JPADS).</p> <p>FY 2013 Plans: Force Protection Projects (FPP) (United Kingdom, France, Germany, Italy, Sweden, Canada): Force Protection Projects includes R&D collaborationon technologies such as Counter Rocket and Mortar (C-RAM) and Counter Improvised Explosive Devices (C-IED). Programs includes Military Operations in Urban Terrain (MOUT) and a variety of Defense Against Terrorism (DAT) initiatives such as Defense Against Mortar Attacks (DAMA) and Joint Precision Air Drop System (JPADS). NA</p> <p>FY 2014 Plans: Force Protection Projects (FPP) (United Kingdom, France, Germany, Italy, Sweden, Canada): Force Protection Projects will include R&D collaborationon technologies such as Counter Rocket and Mortar (C-RAM) and Counter Improvised Explosive Devices (C-IED). Programs will include Military Operations in Urban Terrain (MOUT) and a variety of Defense Against Terrorism (DAT) initiatives such as Defense Against Mortar Attacks (DAMA) and Joint Precision Air Drop System (JPADS).</p>				
Accomplishments/Planned Programs Subtotals		4.612	4.961	3.874
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
None				
D. Acquisition Strategy				
All projects are test or technical demonstrations to feed into potential new requirements in support of Army Transformation to the Future Force or as product improvements to the Current Force.				
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>	PROJECT 691: <i>NATO RSCH & DEVEL</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			
STEM/IOL	TBD	RDECOM,;Ft. Belvoir, VA	0.418	0.033		0.087		0.067		-		0.067	Continuing	Continuing	0.000
Low Level Air Defense Interoperability (LLAPI)	TBD	AMCOM,;Redstone Arsenal, AL	0.407	-		-		-		-		-	Continuing	Continuing	0.000
MIP	Various	PEO C3S,;Ft. Monmouth, NJ	1.086	0.133		-		-		-		-	Continuing	Continuing	0.000
Combat Identification	TBD	CECOM,;Ft. Monmouth, NJ	0.547	0.024		-		-		-		-	Continuing	Continuing	0.000
SNR(A)	TBD	ARL,;APG, MD	0.642	-		-		-		-		-	Continuing	Continuing	0.000
TRDP	TBD	REDCOM,;Ft. Belvoir, VA	2.381	0.295		0.295		0.228		-		0.228	Continuing	Continuing	0.000
Artillery Command and Control Interoperability (ASCA)	TBD	CECOM,;Ft. Monmouth, NJ	0.125	0.014		-		-		-		-	Continuing	Continuing	0.000
Force Protection Projects (FPP)	TBD	RDECOM,;Ft. Belvoir, VA	0.051	0.048		0.035		0.028		-		0.028	0.000	0.162	0.000
Subtotal			5.657	0.547		0.417		0.323		0.000		0.323			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			
Multilateral Interoperability Program (MIP)	TBD	Various:Various	2.057	0.169		0.193		0.151		-		0.151	Continuing	Continuing	Continuing
STEM-IOL	TBD	LSS/GDIT,;Fairfax, VA	5.675	0.567		0.597		0.466		-		0.466	Continuing	Continuing	Continuing
Low Level Air Defense Interoperability (LLAPI)	TBD	AMCOM,;Redstone Arsenal, AL	1.299	0.114		0.120		0.093		-		0.093	Continuing	Continuing	Continuing
Combat Identification	TBD	CECOM,;Ft. Monmouth, NJ	1.017	-		0.025		0.018		-		0.018	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>	PROJECT 691: <i>NATO RSCH & DEVEL</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			
Multi-National Network Enabled Capabilities (MNNEC) related to C4ISR	TBD	CECOM,;Ft. Monmouth, NJ	3.501	0.434		0.500		0.366		-		0.366	Continuing	Continuing	Continuing
Senior National Representatives (Army) (SNR[A])	Various	ARDEC,;Arlington, VA	8.097	0.547		0.568		0.440		-		0.440	Continuing	Continuing	Continuing
TRDP	Various	Batelle/LMI,;McLean, VA	2.382	0.185		0.205		0.159		-		0.159	Continuing	Continuing	Continuing
Artillery Command and Control Interoperability (ASCA)	Various	CECOM,;Fort Monmouth, NJ	2.025	0.176		0.197		0.154		-		0.154	Continuing	Continuing	Continuing
Joint Tactical Radio System (JTRS)	Various	PM JTRS,;San Diego, CA	0.968	0.157		0.163		0.127		-		0.127	Continuing	Continuing	Continuing
Force Protection Projects (FPP)	Various	RDECOM,;Ft Belvoir, VA	0.325	0.110		0.117		0.111		-		0.111	0.000	0.663	Continuing
Subtotal			27.346	2.459		2.685		2.085		0.000		2.085			

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			
MIP	Various	CECOM:Ft. Monmouth, NJ	1.443	0.191		0.225		0.174		-		0.174	Continuing	Continuing	Continuing
Low Level Air Defense Interoperability (LLAPI)	Various	AMCOM,;Redstond Arsenal, AL	0.622	0.085		0.104		0.077		-		0.077	Continuing	Continuing	Continuing
STEM/IOL	Various	GDIT:Fairfax, VA	1.298	0.124		0.150		0.116		-		0.116	Continuing	Continuing	Continuing
Combat Identification	Various	CECOM:Ft Monmouth, Nj	0.614	0.024		0.035		0.025		-		0.025	Continuing	Continuing	Continuing
Multi-National Network Enabled Capabilities (MNNEC) related to C4ISR	Various	CECOM:Fort Monmouth, NJ	0.916	0.091		0.107		0.083		-		0.083	Continuing	Continuing	Continuing
SNR(A)	Various	ARL,;Aberdeen, Md	1.873	0.076		0.100		0.078		-		0.078	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>	PROJECT 691: <i>NATO RSCH & DEVEL</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			
TRDP	Various	RDECOM,;Ft. Belvoir, VA	2.436	0.291		0.295		0.230		-		0.230	Continuing	Continuing	Continuing
Joint Tactical Radio System (JTRS)	Various	PM JTRS,;San Diego, VA	0.617	0.095		0.100		0.075		-		0.075	Continuing	Continuing	Continuing
Artillery Command and Control Interoperability (ASCA)	Various	CECOM:Ft Monmouth, Nj	0.568	0.110		0.100		0.076		-		0.076	Continuing	Continuing	Continuing
Force Protection Projects (FPP)	Various	RDECOM,;Fort Belvoir, VA	0.042	0.048		0.050		0.052		-		0.052	0.000	0.192	Continuing
Subtotal			10.429	1.135		1.266		0.986		0.000		0.986			

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			
MIP	Various	CECOM:Ft. Monmouth, NJ	1.282	0.152		0.275		0.215		-		0.215	Continuing	Continuing	0.000
STEM/IOL	Various	RDECOM,;Various	0.895	0.095		0.063		0.050		-		0.050	Continuing	Continuing	0.000
Low Level Air Defense Interoperability (LLAPI)	Various	AMCOM,;Redstone Aresnal, AL	0.244	-		-		-		-		-	Continuing	Continuing	0.000
SNR(A)	TBD	various;various	1.319	0.138		0.100		0.079		-		0.079	Continuing	Continuing	0.000
ASCA	TBD	CECOM:Ft. Monmouth, NJ	0.329	0.048		0.090		0.070		-		0.070	Continuing	Continuing	0.000
Joint Tactical Radio System (JTRS)	TBD	CECOM:Ft. Monmouth, NJ	0.302	-		-		-		-		-	Continuing	Continuing	0.000
Force Protection Projects (FPP)	TBD	RDECOM,;Ft. Belvoir, VA	0.052	0.038		0.065		0.066		-		0.066	0.000	0.221	0.000
Subtotal			4.423	0.471		0.593		0.480		0.000		0.480			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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603790A: <i>NATO Research and Development</i>			PROJECT 691: <i>NATO RSCH & DEVEL</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	47.855	4.612	4.961	3.874	0.000	3.874				

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv 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	-	6.879	8.602	5.018	-	5.018	10.041	8.880	7.880	7.000	Continuing	Continuing
B32: <i>Adv Maint Concepts/Eq</i>	-	6.879	8.602	5.018	-	5.018	10.041	8.880	7.880	7.000	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

This Program Element provides advanced development aviation support of programs that include advanced maintenance concepts and equipment. The FY 2014 budget request funds Aviation Advanced Development which supports Aviation Ground Support Equipment development prototypes that will enhance the functionality of current and future aircraft by improving the effectiveness of maintenance and servicing operations through validating new maintenance concepts to improve man and machine interfaces, improve aircraft maintenance processes, reduce Operation and Support costs, and insert diagnostics technologies to replace obsolete and unsupportable equipment. This program provides for development of rapid battle repair procedures, tools development to speed the return of aircraft to a full mission status, and development of new equipment for aerial recovery of damaged aircraft. Included in this program are: diagnostics/prognostic monitoring systems, Aircraft Clean System (ACS), Aviation Ground Power Unit (AGPU) equipment familiarization software, redesign and incorporation of AGPU modularity capabilities, Aviation Light Utility Mobile Maintenance Cart (ALUMMC), Aviation Vibration Analyzer (AVA), Aviation Intermediate Maintenance Shop Set (AVIM SS), Battle Damage Assessment & Repair (BDAR), Common Aviation Tool System (CATS), Digital Aircraft Weighing Scales II (DAWS II), Hand Held Fire Extinguisher (HHFE), Family of Aviation Lifting Devices (F-ALD), Flexible Engine Diagnostic System (FEDS), Modernized Maintenance Platform (formerly referred to as Aviation B1/B4 Maintenance Stands), Non-Destructive Test Equipment System (NDTE), Pitot Static Test Set (PSTS), Unit Maintenance Aerial Recovery Kit (UMARK) and development support for tools needed to provide maintenance support to modernized/future force aircraft.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv 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	7.218	8.602	8.426	-	8.426
Current President's Budget	6.879	8.602	5.018	-	5.018
Total Adjustments	-0.339	0.000	-3.408	-	-3.408
• Congressional General Reductions	-0.011	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.217	-			
• Adjustments to Budget Years	-	-	-3.408	-	-3.408
• Other Adjustments 1	-0.111	-	-	-	-

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>	PROJECT B32: <i>Adv Maint Concepts/Eq</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
B32: <i>Adv Maint Concepts/Eq</i>	-	6.879	8.602	5.018	-	5.018	10.041	8.880	7.880	7.000	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

This Project provides advanced development aviation support of programs that include advanced maintenance concepts and equipment. The FY 2014 budget request funds Aviation Advanced Development which supports Aviation Ground Support Equipment development prototypes that will enhance the functionality of current and future aircraft by improving the effectiveness of maintenance and servicing operations through validating new maintenance concepts to improve man and machine interfaces, improve aircraft maintenance processes, reduce Operation and Support costs, and insert diagnostics technologies to replace obsolete and unsupportable equipment. This program provides for development of rapid battle repair procedures, tools development to speed the return of aircraft to a full mission status, and development of new equipment for aerial recovery of damaged aircraft. Included in this program are: diagnostics/prognostic monitoring systems, Aircraft Clean System (ACS), Aviation Ground Power Unit (AGPU) equipment familiarization software, redesign and incorporation of AGPU modularity capabilities, Aviation Light Utility Mobile Maintenance Cart (ALUMMC), Aviation Vibration Analyzer (AVA), Aviation Intermediate Maintenance Shop Set (AVIM SS), Battle Damage Assessment & Repair (BDAR), Common Aviation Tool System (CATS), Digital Aircraft Weighing Scales II (DAWS II), Hand Held Fire Extinguisher (HHFE), Family of Aviation Lifting Devices (F-ALD), Flexible Engine Diagnostic System (FEDS), Modernized Maintenance Platform (formerly referred to as Aviation B1/B4 maintenance Stands), Non-Destructive Test Equipment System (NDTE), Pitot Static Test Set (PSTS), Unit Maintenance Aerial Recovery Kit (UMARK) and development support for tools needed to provide maintenance support to modernized/future force aircraft.

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

	FY 2012	FY 2013	FY 2014
Title: Aircraft Cleaning System (ACS)	0.000	0.000	0.500
Description: The ACS will provide aviation maintenance units with a capability to clean external and internal aircraft surfaces and components when in the field and deployed locations.			
FY 2014 Plans: Perform market survey, trade studies, generate Purchase Item Description (PID) and Request For Proposal (RFP), technical review of proposals, source selection, systems performance test demonstration for evaluation, and conduct systems safety evaluation to certify and qualify the ACS for Army aircraft operation.			
Title: Aviation Ground Power Unit (AGPU)	0.000	4.191	1.342

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>		PROJECT B32: <i>Adv Maint Concepts/Eq</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p align="right">Articles:</p> <p>Description: The AGPU provides the capability to meet Army helicopter servicing requirements into the next decade by providing a modular, diagnostic/prognostic monitoring system with external hydraulic, pneumatic, and AC/DC electrical power to all Modernized Force Aircraft.</p> <p>FY 2013 Plans: Perform AGPU Hudrolic Module redesign to meet requirements of updated CPD, develop and integrate AGPU diagnostic system, and prepare test plans for newly integrated capabilities.</p> <p>FY 2014 Plans: Conduct developmental and operational test of newly integrated capabilities.</p>			0	
<p>Title: Aviation Light Utility Mobile Maintenance Cart (ALUMMC)</p> <p align="right">Articles:</p> <p>Description: ALUMMC will enhance mission performance of current forces by reducing the burden on Army Aviation units currently using TDA and TOE tactical vehicles to support flight line operations and providing a standardized and sustainable vehicle to move personnel and equipment along the flight line.</p> <p>FY 2012 Accomplishments: Developed operational test plans, selected site, purchased prototypes, completed testing and down selected ALUMMC.</p> <p>FY 2013 Plans: Finalize product evaluation and operational test plans.</p>		0.872 0	0.546 0	0.000
<p>Title: Aviation Vibration Analyzer (AVA)</p> <p>Description: AVA provides a rugged, portable, and safe means of performing helicopter, one per revolution (1P) maintenance, for both main and tail rotors. Measures, records, and processes vibration and blade position information to diagnose and present measurement, diagnostic, and corrective information to maintenance personnel to correct faults.</p> <p>FY 2014 Plans: Conduct testing on AVA-E prototypes, complete qualification and certification and obtain airworthiness release.</p>		0.000	0.000	0.400
<p>Title: Aviation Intermediate Maintenance Shop Set (AVIM SS)</p> <p>Description: The AVIM Shop Set complex is comprised of ten (10) class 7 shop sets in new or refurbished One Side Expandable (OSE) International Standardization Organization (ISO) Shelters. These shop sets include: Powertrain, Non-Descriptive</p>		0.000	0.000	0.300

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>		PROJECT B32: <i>Adv Maint Concepts/Eq</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Inspection, Engine, Pneudraulic, Composite, Tool Crib, Production Control/Quality Control, Sheet Metal, Machine Weld and Armament & Electrical Shops.				
FY 2014 Plans: Analyze, identify, and develop hardware to permanently repair the aircraft composite shop set. Develop the required hardware procedures for repairing the composite structures and have the newly identified components tested, qualified and certified.				
Title: Battle Damage Assessment and Repair Kit (BDAR) Description: The BDAR is a transportable and expeditious means to assess combat damage, defer and/or repair Army helicopters in a battlefield environment.		0.000	0.000	0.300
FY 2014 Plans: Analyze, identify, and develop hardware to repair aircraft composite. Develop the required hardware procedures for repairing the composite structures.				
Title: Common Aviation Tool System (CATS) Description: CATS is a component of A-SKOT and consists of individual aviation mechanics tool kit containers, aerospace standard tools, foam shadowed drawers and a component listing with picture diagrams for ease of inventory and to minimize foreign object damage to aircraft. CATS provides standardized tools, kits and outfits which meet transformation modularity, flexibility and mobility requirements for repair of rotary wing aircraft during combat, contingency and training operations.	Articles:	0.301 0	0.000	0.000
FY 2012 Accomplishments: Completed technical review of proposals, source selection, systems performance test demonstration and test plan for evaluation, and conducted systems safety evaluation to certify and qualify the CATS for Army aircraft maintenance operation.				
Title: Digital Aircraft Weighing Scales (DAWS) II Description: DAWS II is an electronic/digital weighing scale. It is used to perform weight and balance without leveling the aircraft and produces a computerized DD Form 365 outlining results.	Articles:	0.000	0.600 0	0.000
FY 2013 Plans: Conduct research into the availability of modern technology, assess the need for system modernization, and complete product evaluation and operational testing.				
Title: Flexible Engine Diagnostics System (FEDS)		2.182	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>	PROJECT B32: <i>Adv Maint Concepts/Eq</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Articles:		0		
Description: FEDS is a Turbo-Shaft Engine Test Stand that verifies flight readiness/safety of engines removed from aircraft for maintenance. This test stand supports the CH-47, AH-64 and UH-60 aviation aircraft.				
FY 2012 Accomplishments: Completed correction of deficiencies identified during the User and Maintainer Assessment (UMA) Phase I.				
Title: Non-Destructive Test Equipment (NDTE)		0.000	0.925	0.225
Articles:			0	
Description: NDTE provides Army Aviation Maintenance units with an electronic test instrument to inspect aircraft components and structures without complete disassembly or removal of components from the aircraft.				
FY 2013 Plans: Begin research and development of Non-Destructive Test Equipment (eddy current, ultrasonic, harmonic bond, and radiography) for modernization and technology advancements.				
FY 2014 Plans: Continue research and development of Non-Destructive Test Equipment (Eddy Current, ultrasonic, harmonic bond and radiography), purchase samples and conduct testing.				
Title: Hand Held Fire Extinguisher (HHFE)		0.910	0.000	0.000
Articles:		0		
Description: The HHFE is being reviewed to find a replacement for the Halon 1301 agent currently fielded on Aviation Rotary Wing aircraft.				
FY 2012 Accomplishments: Completed testing and evaluation on the replacement Halon 1301 extinguisher and completed documentation for release of the selected HALON 1301 extinguisher. Finalized the development of the HHFE hardware, specification and the technical data package.				
Title: Unit Maintenance Aerial Recovery Kit (UMARK)		1.510	1.100	0.600
Articles:		0	0	
Description: UMARK provides Aviation Support Company and Aviation Maintenance Company units with the ability to quickly rig for transport crash-damaged non-flyable modernized aircraft or aircraft undergoing maintenance for evacuation.				

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>		PROJECT B32: <i>Adv Maint Concepts/Eq</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<i>FY 2012 Accomplishments:</i> Completed ground development and flight testing for the recovery of crash damaged aircraft.				
<i>FY 2013 Plans:</i> Continue ground and flight testing verification				
<i>FY 2014 Plans:</i> Finalize UMARK Test Data Package, procedures, and manuals.				
<i>Title:</i> Management Support Services		0.520	0.400	0.258
	<i>Articles:</i>	0	0	
<i>Description:</i> Management Support Services in Support of the Aviation Ground Support Equipment Product Management Office.				
<i>FY 2012 Accomplishments:</i> Management Support Services				
<i>FY 2013 Plans:</i> Management Support Services.				
<i>FY 2014 Plans:</i> Management Support Services				
<i>Title:</i> RDTE Project Test Support		0.384	0.430	0.300
	<i>Articles:</i>	0	0	
<i>Description:</i> RDTE Project Test Support for the Aviation Ground Support Equipment Product Management Office.				
<i>FY 2012 Accomplishments:</i> RDTE Project Test Support				
<i>FY 2013 Plans:</i> RDTE Project Test Support.				
<i>FY 2014 Plans:</i> RDTE Project Test Support				
<i>Title:</i> Technical Engineering Services		0.200	0.410	0.793
	<i>Articles:</i>	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>	PROJECT B32: <i>Adv Maint Concepts/Eq</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Description: Technical Engineering Services in support of Aviation Ground Support Equipment Product Management Office.</p> <p>FY 2012 Accomplishments: Technical Engineering Services.</p> <p>FY 2013 Plans: Technical Engineering Services.</p> <p>FY 2014 Plans: Technical Engineering Services.</p>			
Accomplishments/Planned Programs Subtotals	6.879	8.602	5.018

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>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>
• Aviation Ground Support Equipment: <i>Aviation Ground Support Equipment, SSN AZ3520</i>	114.517	82.511	65.397		65.397	56.445	57.984	51.088	59.779	Continuing	Continuing

Remarks

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

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>						R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>					PROJECT B32: <i>Adv Maint Concepts/Eq</i>				

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 Support Services	Various	PM AGSE:RSA, AL	0.629	0.520	Mar 2012	0.400	Feb 2013	0.258	Jan 2014	-		0.258	Continuing	Continuing	Continuing
Subtotal			0.629	0.520		0.400		0.258		0.000		0.258			

Remarks
None

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			
ACS	Various	AATD, Ft. Eustis, VA, Aberdeen Test Center (ATC);:Aberdeen Proving Ground MD.	0.000	-		-		0.500	Jan 2014	-		0.500	Continuing	Continuing	Continuing
AGPU	Various	RTTC, Redstone Arsenal (RSA), AL; AMRDEC, RSA, AL; Aberdeen Test Center (ATC);:Aberdeen Proving Ground, MD	11.351	-		4.191	Feb 2013	1.342	Mar 2014	-		1.342	0.000	16.884	0.000
ALUMMC	Various	ATTD, Ft. Eustis, VA, Aberdeen Test Center (ATC);:Aberdeen Proving Ground MD	0.000	0.872	Mar 2012	0.546	Jan 2013	-		-		-	0.000	1.418	0.000
AVA	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC);:Aberdeen Proving Ground	0.000	-		-		0.400	Jan 2014	-		0.400	0.000	0.400	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>	PROJECT B32: <i>Adv Maint Concepts/Eq</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
AVIM SS	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC):Aberdeen, MD	0.000	-		-		0.300	Feb 2014	-		0.300	Continuing	Continuing	Continuing
BDAR	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC):Aberdeen Proving Ground, MD	0.656	-		-		0.300	Jan 2014	-		0.300	Continuing	Continuing	Continuing
CATS (A-SKOT)	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC):Aberdeen Proving Ground, MD.	0.475	0.301	May 2012	-		-		-		-	0.000	0.776	0.000
FEDS	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC):Aberdeen Proving Ground, MD	9.005	2.182	Jun 2012	-		-		-		-	0.000	11.187	0.000
DAWS II	Various	AMRDEC (RSA), AL, Aberdeen Test Center:Aberdeen Proving Ground	0.000	-		0.600	Feb 2013	-		-		-	0.000	0.600	0.000
HHFE	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC):Aberdeen Proving Ground, MD	5.687	0.910	Apr 2012	-		-		-		-	0.000	6.597	0.000
NDTE	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC):Aberdeen Proving Ground, MD.	0.404	-		0.925	Feb 2013	0.225	Mar 2014	-		0.225	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>	PROJECT B32: <i>Adv Maint Concepts/Eq</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			
UMARK	Various	AMRDEC, (RSA), AL, Aberdeen Test Center (ATC);Aberdeen Proving Ground, MD	3.820	1.510	Jul 2012	1.100	Jan 2013	0.600	Feb 2014	-		0.600	Continuing	Continuing	Continuing
Subtotal			31.398	5.775		7.362		3.667		0.000		3.667			

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 Services	RO	AATD;:Ft. Eustis, VA	6.776	0.200	Jun 2012	0.410	Jan 2013	0.437	Feb 2014	-		0.437	Continuing	Continuing	Continuing
Technical Engineering Services	RO	AED:Redstone Arsenal, AL	0.000	-		-		0.356	Jan 2014	-		0.356	Continuing	Continuing	Continuing
Subtotal			6.776	0.200		0.410		0.793		0.000		0.793			

Remarks
None

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			
RDTE Project Test Support	MIPR	ATC;:Aberdeen Proving Ground, MD	1.234	0.384	Jun 2012	0.430	Feb 2013	0.300	Jan 2014	-		0.300	Continuing	Continuing	Continuing
Subtotal			1.234	0.384		0.430		0.300		0.000		0.300			

Remarks
None

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>			PROJECT B32: <i>Adv Maint Concepts/Eq</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	40.037	6.879	8.602	5.018	0.000	5.018				

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>		PROJECT B32: <i>Adv Maint Concepts/Eq</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
Aircraft Cleaning System (ACS)																												
Aviation Ground Power Unit (AGPU)																												
Aviation Ground Power Unit (AGPU) Next Generation																												
Aviation Light Utility Mobile Maintenance Cart																												
Aviation Vibration Analyzer (AVA)																												
Family Aviation Lifting Device																												
Battle Damage Assessment and Repair Kit																												
Aviation Intermediate Maintenance Shop Set (AVIM SS)																												
Common Aviation Tool System (CATS) - (Aviation Sets, Kits, Outfits and Tools)																												
Digital Flexible Engine Diagnostic System																												
Non-Destructive Test Equipment																												
Pitot Static Test Set (PSTS)																												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>	PROJECT B32: <i>Adv Maint Concepts/Eq</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aircraft Cleaning System (ACS)	2	2014	4	2015
Aviation Ground Power Unit (AGPU)	3	2013	4	2014
Aviation Ground Power Unit (AGPU) Next Generation	3	2015	4	2016
Aviation Light Utility Mobile Maintenance Cart	2	2012	3	2014
Aviation Vibration Analyzer (AVA)	2	2014	4	2014
Family Aviation Lifting Device	2	2015	4	2016
Battle Damage Assessment and Repair Kit	2	2014	4	2015
Aviation Intermediate Maintenance Shop Set (AVIM SS)	2	2014	4	2015
Common Aviation Tool System (CATS) - (Aviation Sets, Kits, Outfits and Tools)	3	2012	1	2013
Digital Flexible Engine Diagnostic System	3	2016	4	2017
Non-Destructive Test Equipment	2	2013	4	2015
Pitot Static Test Set (PSTS)	2	2015	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv 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	-	12.107	14.605	11.556	-	11.556	14.559	20.643	15.827	13.868	Continuing	Continuing
526: <i>Marine Orien Log Eq Ad</i>	-	2.614	2.836	2.369	-	2.369	3.790	3.473	3.167	3.535	Continuing	Continuing
G11: <i>Adv Elec Energy Con Ad</i>	-	0.669	3.921	2.501	-	2.501	0.788	7.401	4.192	0.823	Continuing	Continuing
G14: <i>Materials Handling Equipment - Ad</i>	-	0.000	0.149	0.649	-	0.649	0.898	0.402	0.304	0.750	Continuing	Continuing
K39: <i>Field Sustainment Support Ad</i>	-	2.857	2.970	2.161	-	2.161	3.061	3.434	2.727	2.801	Continuing	Continuing
K41: <i>Water And Petroleum Distribution - Ad</i>	-	3.990	2.706	2.263	-	2.263	3.617	3.314	3.022	3.544	Continuing	Continuing
VR8: <i>Combat Service Support Systems - Ad</i>	-	1.977	2.023	1.613	-	1.613	2.405	2.619	2.415	2.415	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: Decrease is due to several PROJECTs.

A. Mission Description and Budget Item Justification

This program element supports advanced component development and prototypes of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in watercraft, bridging, electric power generators, potable water, material-handling, environmental control, shelter systems, cargo aerial delivery, field service systems, mortuary affairs equipment and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational capability, lethality and survivability on the digital battlefield and to provide for greater sustainment while reducing the logistics support burden.

Decrease from FY 2013 to FY 2014 reflects decrease of several projects.

For FY14, Joint Light Tactical Vehicle (JLTV) moved to PE: 655812/Project: VU9

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv 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	12.706	14.605	13.734	-	13.734
Current President's Budget	12.107	14.605	11.556	-	11.556
Total Adjustments	-0.599	0.000	-2.178	-	-2.178
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.599	-	-2.178	-	-2.178

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>				PROJECT 526: <i>Marine Orien Log Eq Ad</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
526: <i>Marine Orien Log Eq Ad</i>	-	2.614	2.836	2.369	-	2.369	3.790	3.473	3.167	3.535	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 FY14 dollars in the amount of \$2.369 million supports project advanced component study and development, and prototype of equipment and sub-systems supporting the Army Watercraft mission to provide critical capabilities in support of full-spectrum land combat operations, by extending the Commander's available maneuver space into and throughout the littorals, inland waterways and near coastal regions. Army watercraft equipment supports the conduct of riverine, Logistics Over The Shore (LOTS), Joint Logistics Over The Shore (JLOTS), inter and intratheater transport, movement and maneuver, mission command and sustainment, as identified in DODD 5100-01 (Functions of the Department of Defense and its Major Components). Army Watercraft exploit the inland waterway and littoral regions as waterborne maneuver and supply routes, conduct operations through littoral entry points, developed, undeveloped, and austere access points, and in non-permissive, and/or denied access scenarios. The Army uses a spectrum of lighterage and floating craft, from heavy sustainment ocean going landing craft capable of intratheater and ship to shore transport and undeveloped beach or harbor access, to ocean-going and harbor utility tug boats and barge derricks for transport and denied port/salvage operations, and modular causeway systems to support LOTS/JLOTS. Capability will be appropriately incorporated into development of the Family of Maneuver Support Vessels (FMSV) Initial Capabilities Document (ICD) studies.

Funding will also be used to enhance the maturation of equipment, systems and sub-systems into Army Watercraft for the purposes of improved performance, energy efficiency, environmental, and regulatory compliance. Funding is also used to enhance the seaworthiness, safety, survivability, supportability, and reliability of existing systems. Funded efforts will advance critical gaps in these areas for the current fleet, while at the same time studying, developing, and testing emergent technologies in a manner to support future acquisitions and future fleet planning, as those areas are to be imminently informed by the Army Watercraft Systems Board of Directors (AWS BOD).

Fleet wide funding requirements will complete core requirements for development, prototype operational testing, and military unit assessment of externally mounted accommodation units in support of crew and supercargo berthing, integration of Escalation of Force (EoF) force protection enhancements, to include both lethal and non-lethal, development of Battle Command on the Move (BCOTM) and Common Operating Picture (COP)/interoperability aspects of existing C4ISR, enhancement of developing environmental and energy efficiency technologies to ensure continued compliance with increasingly stringent regulatory requirements, and study/development of digital technology integration in the areas of near and real time logistics management, area situational awareness, trend analysis, Condition Based Maintenance Plus (CBM+), equipment monitoring and diagnostics/prognostics and related functional areas, as well as study, and development of Terminal Operations (ship to shore).

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT 526: <i>Marine Orien Log Eq Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Title: WATERCRAFT - FAMILY OF MANEUVER SUPPORT VESSELS (FMSV) INITIAL CAPABILITIES DOCUMENT (ICD) CAPABILITIES AND FEASIBILITY STUDY/DEVELOPMENT Description: VSB - Vessel to Shore Bridging Study/Development FY 2012 Accomplishments: VSB - Vessel to Shore Bridging Study/Development FY 2013 Plans: Family of Maneuver Support Vessels (FMSV) Initial Capabilities Document (ICD) support. FY 2014 Plans: Family of Maneuver Support Vessels (FMSV) Initial Capabilities Document (ICD) support.		0.502 0	0.230 0	0.055
Title: WATERCRAFT -LANDING CRAFT MECHANIZED (LCM8) STUDY/DEVELOPMENT Description: Landing Craft Mechanized 8 FY 2012 Accomplishments: LCM 8 - Landing Craft Mechanized 8 Study/Development FY 2013 Plans: Watercraft - Landing Craft Mechanized (LCM8) Study/Development FY 2014 Plans: Watercraft - Landing Craft Mechanized (LCM8) Study/Development		0.441 0	0.150 0	0.125
Title: WATERCRAFT - HEAVY LIFT VESSEL STUDY/DEVELOPMENT Description: AWS Heavy Lift Vessel FY 2012 Accomplishments: Heavy Lift Vessel Study/Development FY 2013 Plans: Heavy Lift Vessel Study/Development		0.441 0	0.200 0	0.000
Title: WATERCRAFT - ARMY WATERCRAFT MODULE, BERTHING (AWMB) STUDY/DEVELOPMENT		0.441	0.300	0.500

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT 526: <i>Marine Orien Log Eq Ad</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012	FY 2013	FY 2014
<i>Articles:</i>				0	0	
Description: AWS - Army Watercraft Module, Berthing (AWMB)						
FY 2012 Accomplishments: People Pods Study/Development						
FY 2013 Plans: People Pods Study/Development						
FY 2014 Plans: Prototype operational testing and military unit assessment of crew and supercargo accommodations and berthing units.						
Title: WATERCRAFT - FORCE PROTECTION STUDY/DEVELOPMENT				0.391	0.350	0.600
<i>Articles:</i>				0	0	
Description: AWS - Force Protection						
FY 2012 Accomplishments: Force Protection Study/Development						
FY 2013 Plans: Force Protection Study/Development						
FY 2014 Plans: Force Protection; lethal and non-lethal Escalation of Force (EoF) Study/Development						
Title: WATERCRAFT - C4ISR STUDY/DEVELOPMENT				0.276	0.150	0.150
<i>Articles:</i>				0	0	
Description: AWS - C4ISR						
FY 2012 Accomplishments: C4ISR Study/Development						
FY 2013 Plans: C4ISR Study/Development						
FY 2014 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Orien Log Eq Ad</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
C4ISR interoperability, Common Operating Picture (COP), and Battle Command on the Move (BCOTM) Study/Development.				
Title: ARMY WATERCRAFT PROGRAM SUPPORT				
Description: SALARY SUPPORT				
FY 2012 Accomplishments: SALARY				
FY 2013 Plans: Support				
FY 2014 Plans: SALARY SUPPORT				
Title: WATERCRAFT MARKET SURVEYS AND BUSINESS ANALYSIS				
Description: Funding is provided for the following effort				
FY 2013 Plans: Continues Watercraft Market Surveys and Business Analysis				
FY 2014 Plans: Continues Watercraft Market Surveys and Business Analysis				
Title: WATERCRAFT - RIVERINE CRAFT STUDY/DEVELOPMENT				
Description: Riverine Craft Study/Development				
FY 2013 Plans: Riverine Craft Study/Development				
FY 2014 Plans: Riverine Craft Study/Development				
Title: WATERCRAFT - MEDIUM TUG AND BARGE STUDY/DEVELOPMENT				
Description:				
FY 2013 Plans:				
FY 2014 Plans:				
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Orien Log Eq Ad</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2012	FY 2013	FY 2014
Description: Tug and Barge Study/Development FY 2013 Plans: Tug and Barge Study/Development FY 2014 Plans: Medium Tug and Barge Study/Development					
Title: WATERCRAFT - TERMINAL OPERATIONS STUDY/DEVELOPMENT Description: Terminal Operations and Ship to Shore Study/Development FY 2013 Plans: Terminal Operations and Ship to Shore Study/Development FY 2014 Plans: Terminal Operations and Ship to Shore Study/Development			Articles: 0.000	0.200 0	0.075
Title: WATERCRAFT - PORT/HARBOR UTILITY DEVELOPMENT Description: Port/Harbor Utility Study/Development FY 2013 Plans: Port/Harbor Utility and Light Landing Craft Study/Development FY 2014 Plans: Port/Harbor Utility Study/Development			Articles: 0.000	0.150 0	0.050
Title: WATERCRAFT - AMPHIBIOUS CRAFT STUDY/DEVELOPMENT Description: Amphibious Craft Study/Development FY 2013 Plans: Amphibious Craft Study/Development			Articles: 0.000	0.100 0	0.000
Title: WATERCRAFT - DIGITAL INTEGRATION STUDY/DEVELOPMENT			Articles: 0.000	0.150 0	0.050

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Orien Log Eq Ad</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Description: Digital Integration Study/Development FY 2013 Plans: Digital Integration Study/Development FY 2014 Plans: Digital Integration Study/Development				
Title: WATERCRAFT - AT SEA TRANSFER STUDY/DEVELOPMENT Description: At Sea Transfer Study/Development FY 2013 Plans: At Sea Transfer Study/Development		Articles: 0.000	0.100 0	0.000
Title: WATERCRAFT - ENERGY EFFICIENCY AND ENVIRONMENTAL COMPLIANCE STUDY/DEVELOPMENT Description: Energy Efficiency and Environmental Compliance FY 2013 Plans: Energy Efficiency and Environmental Compliance FY 2014 Plans: Adaptation of developing energy efficiency and environmental compliance technologies IAW evolving regulatory requirements.		Articles: 0.000	0.150 0	0.300
Title: WATERCRAFT - SMALL BUSINESS INCENTIVE RESEARCH (SBIR); SBIR AND TECHNOLOGY TRANSER RESEARCH (STTR) Description: Watercraft - Small Business Incentive Research (SBIR); SBIR and Technology Transfer Research FY 2012 Accomplishments: Watercraft - Small Business Incentive Research (SBIR); SBIR and Technology Transfer Research		Articles: 0.072 0	0.000	0.000
Accomplishments/Planned Programs Subtotals		2.614	2.836	2.369

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Oriented Log Eq Ad</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>
• MA4500 Modification on In-Service: <i>MA4500 Modification on In-Service Equipment (OPA3)</i>	72.271	41.903	96.661		96.661	110.909	76.108	67.363	68.321	Continuing	Continuing

Remarks

Other program funding. MA4500, Modification on In-Service Equipment (OPA3) includes funding for modifications to systems other than watercraft.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Orien Log Eq Ad</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			
WATERCRAFT - ARMY WATERCRAFT SYSTEMS PROGRAM SUPPORT	SS/BA	PM TRANSPORTATION SYSTEMS:TACOM	3.129	-		0.156		0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
SMALL BUSINESS INCENTIVE RESEARCH (SBIR); SBIR AND TECHNOLOGY TRANSFER RESEARCH TAX	TBD	Various:Various	0.000	0.072	Aug 2012	-		-		-		-	0.000	0.072	0.083
Subtotal			3.129	0.072		0.156		0.050		0.000		0.050			

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			
FAMILY OF MANEUVER SUPPORT VESSELS (FMSV) INITIAL CAPABILITIES DOCUMENT (ICD)STUDY/ DEVELOPMENT	C/ FFPLOE	TBD:TBD	0.000	0.502	Mar 2012	0.230	Dec 2012	0.055	Dec 2013	-		0.055	Continuing	Continuing	Continuing
LANDING CRAFT MECHANIZED (LCM8) STUDY/DEVELOPMENT	C/ FFPLOE	TBD:TBD	0.000	0.441	Mar 2012	0.150	Dec 2012	0.125	Dec 2013	-		0.125	Continuing	Continuing	Continuing
HEAVY LIFT VESSEL STUDY/DEVELOPMENT	C/ FFPLOE	TBD:TBD	0.000	0.441	Mar 2012	0.200	Dec 2012	-		-		-	Continuing	Continuing	Continuing
ARMY WATERCRAFT MODULE, BERTHING (AWMB) STUDY/ DEVELOPMENT	C/ FFPLOE	PM Force Sustainment Systems:Natick, MA	0.000	0.441	Mar 2012	0.400	Dec 2012	0.500	Dec 2013	-		0.500	Continuing	Continuing	Continuing
FORCE PROTECTION STUDY/DEVELOPMENT	C/ FFPLOE	NSWCDD:Crane, IN	0.000	0.391	Mar 2012	0.350	Dec 2012	0.600	Dec 2013	-		0.600	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Oriented Log Eq Ad</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			
C4ISR STUDY/DEVELOPMENT	C/FFPLOE	SPAWAR:Charleston, SC	0.000	0.276	Mar 2012	0.150	Dec 2012	0.150	Dec 2013	-		0.150	Continuing	Continuing	Continuing
ARMY WATERCRAFT PROGRAM SUPPORT	SS/TBD	Warren, MI:PdAWS	0.000	0.050		-		-		-		-	0.000	0.050	0.000
MARKET SURVEYS/BUSINESS ANALYSIS	C/FP	TBD:TBD	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
RIVERINE CRAFT STUDY/DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
MEDIUM TUG AND BARGE STUDY/DEVELOPMENT	C/FFPLOE	ARO - Battelle:Columbus, OH	0.000	-		0.150	Dec 2012	0.314	Dec 2013	-		0.314	Continuing	Continuing	Continuing
TERMINAL OPERATIONS STUDY/DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.200	Dec 2012	0.075	Dec 2013	-		0.075	Continuing	Continuing	Continuing
PORT/HARBOR UTILITY DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
AMPHIBIOUS CRAFT STUDY/DEVELOPMENT	C/FFPLOE	TBD:TBD	0.000	-		0.100	Dec 2012	-		-		-	Continuing	Continuing	Continuing
DIGITAL INTEGRATION STUDY/DEVELOPMENT	C/FFPLOE	SPAWAR:Charleston, SC	0.000	-		0.150	Dec 2012	0.050	Dec 2013	-		0.050	Continuing	Continuing	Continuing
ENERGY EFFICIENCY AND ENVIRONMENTAL COMPLIANCE	C/FFPLOE	Various:Various	0.000	-		0.150	Dec 2012	0.300	Dec 2013	-		0.300	Continuing	Continuing	Continuing
Subtotal			0.000	2.542		2.680		2.319		0.000		2.319			

	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	3.129	2.614	2.836	2.369	0.000	2.369			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Oriented Log Eq Ad</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
RIVERINE CRAFT STUDY/DEVELOPMENT																												
MEDIUM TUG AND BARGE STUDY/DEVELOPMENT																												
TERMINAL OPERATIONS STUDY/DEVELOPMENT																												
PORT/HARBOR UTILITY STUDY/DEVELOPMENT																												
AMPHIBIOUS CRAFT STUDY/DEVELOPMENT																												
DIGITAL INTEGRATION STUDY/DEVELOPMENT																												
ENERGY EFFICIENCY AND ENVIRONMENTAL COMPLIANCE																												
WATERCRAFT - AT SEA TRANSFER STUDY/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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT 526: <i>Marine Orien Log Eq Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RIVERINE CRAFT STUDY/DEVELOPMENT	1	2013	4	2017
MEDIUM TUG AND BARGE STUDY/DEVELOPMENT	1	2013	4	2017
TERMINAL OPERATIONS STUDY/DEVELOPMENT	1	2013	4	2017
PORT/HARBOR UTILITY STUDY/DEVELOPMENT	1	2013	4	2017
AMPHIBIOUS CRAFT STUDY/DEVELOPMENT	1	2013	4	2014
DIGITAL INTEGRATION STUDY/DEVELOPMENT	1	2013	4	2017
ENERGY EFFICIENCY AND ENVIRONMENTAL COMPLIANCE	1	2013	4	2017
WATERCRAFT - AT SEA TRANSFER STUDY/DEVELOPMENT	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</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
G11: <i>Adv Elec Energy Con Ad</i>	-	0.669	3.921	2.501	-	2.501	0.788	7.401	4.192	0.823	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 Tactical Electric Power (TEP) program was established by the Department of Defense to develop modernized, standard families of mobile electric power sources and power distribution systems for all Services throughout the Department of Defense. Project Manager Mobile Electric Power (PM MEP) derives concept and technology developments that will improve the performance, mobility, readiness and survivability of the next generation of tactical power sources in support of all Services. It supports initiatives that are essential to the development and fielding of modernized TEP sources from Watts to Megawatts level that comply with environmental statues and provide noise and signature-suppressed, energy-efficient, lightweight, deployable and reliable equipment. FY13 and 14 will fund test and evaluation of technologies for Large Advanced Mobile Power Sources (LAMPS), Small Tactical Electric Power (STEP), alternative energy, and Intelligent Power Distribution Systems. Out years will support investigation of general advancements in engine, power equipment and power distribution equipment that are applicable to current equipment and emerging requirements.

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

	FY 2012	FY 2013	FY 2014
Title: Contract Activity	0.000	2.409	1.500
Articles:		0	
Description: Continue development of technology supporting the Large Advanced Mobile Power Sources (LAMPS) program, the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources.			
FY 2013 Plans: Procure various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include STEP components, hybrid/alternative energy power sources, and intelligent power distribution/management systems.			
FY 2014 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT G11: <i>Adv Elec Energy Con Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Procure various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include STEP components, hybrid/alternative energy power sources, and intelligent power distribution/management systems.				
<p>Title: Government System Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: Continue development of technology supporting the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources.</p> <p>FY 2012 Accomplishments: Evaluation and testing of various technologies related to tactical electric power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include performance testing of small generator sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems. Also supports new equipment demonstrations at Network Integration Evaluation (NIE) 12.2 and 13.1.</p> <p>FY 2013 Plans: Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include performance testing of small generator sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems. Program also supports Rapid Equipping Force deployments of alternative energy systems in support of Village Stability Operation. Program Supports new equipment and concept demonstrations at NIE 13.2 and 14.1.</p> <p>FY 2014 Plans: Continue evaluation and testing of various technologies related to tactical electric power and power distribution and management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will be limited to small generator system testing due to limited funding.</p>		0.080 0	0.291 0	0.350
<p>Title: Other Contracts and Gov't agencies</p> <p align="right">Articles:</p> <p>Description: Continue development of technology supporting the Large Advanced Mobile Power Sources (LAMPS) program, the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources.</p>		0.506 0	0.994 0	0.400

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> Evaluation and testing of various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include development of STEP, and evaluation of hybrid/alternative energy power sources and intelligent power distribution/management systems.</p> <p><i>FY 2013 Plans:</i> Evaluation and testing of various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will include development of STEP, and evaluation of hybrid/alternative energy power sources and intelligent power distribution/management systems.</p> <p><i>FY 2014 Plans:</i> Evaluation and testing of various technologies related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Specific efforts will be limited to the development of STEP given limited funding.</p>			
<p><i>Title:</i> Government Program Management</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Continue development of technology supporting the Large Advanced Mobile Power Sources (LAMPS) program, the Small Tactical Electric Power (STEP) programs, Intelligent Power Management and Distribution Systems (IPMDS), and Alternative Energy Sources.</p> <p><i>FY 2012 Accomplishments:</i> Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the STEP program and the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include development of large sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems.</p> <p><i>FY 2013 Plans:</i> Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the STEP program and the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will include development of large sets, hybrid/alternative energy power sources, and intelligent power distribution/management systems.</p> <p><i>FY 2014 Plans:</i></p>	0.083 0	0.227 0	0.251

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Oversight and management of various technology projects related to Tactical Electric Power and power distribution/management across the DoD power spectrum. Efforts will be aimed at resolving technology gaps to meet Army User requirements. Efforts will support the STEP program and the Tactical Electric Power Capabilities Production Document (TEP CPD). Specific efforts will be limited to small power sources given limited funding.			
Accomplishments/Planned Programs Subtotals	0.669	3.921	2.501

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
• 654804.194: <i>Logistics and Engineer Equipment - Eng Dev 194</i>	10.854	9.692	5.027		5.027	11.503	9.332	4.596	1.244	Continuing	Continuing
• MA9800: <i>OPA 3, Generators and Associated Eq.</i>	67.897	67.897	129.437		129.437	176.107	254.448	273.954	45.435	Continuing	Continuing

Remarks

D. Acquisition Strategy

Complete advanced development pre-milestone B technology assessments and analysis, and transition of tactical electric power and power distribution products to Engineering and Manufacturing Development (EMD) phase (Milestone B) and subsequent transition to production (Milestone C).

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</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			
Step Components	Various	PM-MEP:Fort Belvoir, VA	0.176	0.040	Dec 2011	0.100	Nov 2012	0.200	Nov 2013	-		0.200	Continuing	Continuing	0.000
LAMPS Components	Various	PM-MEP:Fort Belvoir, VA	0.089	-		-		-		-		-	Continuing	Continuing	Continuing
Alternative Energy	Various	PM MEP:Ft. Belvoir, VA	0.125	0.021	Dec 2011	0.067	Nov 2012	0.051	Nov 2013	-		0.051	Continuing	Continuing	Continuing
Power Distribution/Management	Various	PM MEP:Ft. Belvoir, VA	0.103	0.022	Dec 2011	0.060	Nov 2012	-		-		-	Continuing	Continuing	Continuing
Small Business Innovative Research/Small Business Technology Transfer Programs	Various	TBD:TBD	0.066	-		-		-		-		-	Continuing	Continuing	0.000
Subtotal			0.559	0.083		0.227		0.251		0.000		0.251			

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			
STEP Components	Various	CERDEC:Fort Belvoir, VA	0.590	-		1.500	Mar 2013	1.000	Mar 2014	-		1.000	Continuing	Continuing	Continuing
LAMPS Components	Various	CERDEC:Fort Belvoir, VA	0.140	-		-		-		-		-	Continuing	Continuing	Continuing
Alternative Energy	Various	Multiple Vendors:TBD	0.815	-		0.500	Mar 2013	0.250	Mar 2014	-		0.250	Continuing	Continuing	Continuing
AMMPS Components	Various	CERDEC:Fort Belvoir, VA	0.001	-		-		-		-		-	0.000	0.001	0.000
Power Distribution/Management	Various	CERDEC:Fort Belvoir, VA	0.250	-		0.409	Mar 2013	0.250	Mar 2014	-		0.250	Continuing	Continuing	Continuing
Subtotal			1.796	0.000		2.409		1.500		0.000		1.500			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</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			
STEP Components	MIPR	CERDEC:Fort Belvoir, VA	0.300	0.106	Dec 2011	0.500	Nov 2012	0.400	Nov 2013	-		0.400	Continuing	Continuing	Continuing
AMMPS Components	MIPR	CERDEC:Fort Belvoir, VA	0.059	-		-		-		-		-	0.000	0.059	0.000
LAMPS Components	MIPR	CERDEC:Fort Belvoir, VA	0.300	-		-		-		-		-	Continuing	Continuing	Continuing
Alternative Energy	MIPR	CERDEC:Fort Belvoir, VA	0.465	0.200	Dec 2011	0.300	Nov 2012	-		-		-	Continuing	Continuing	Continuing
Power Distribution/Management	MIPR	CERDEC:Fort Belvoir, VA	0.474	0.200	Dec 2011	0.194	Nov 2012	-		-		-	Continuing	Continuing	Continuing
Subtotal			1.598	0.506		0.994		0.400		0.000		0.400			

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			
STEP Components	MIPR	CERDEC:Fort Belvoir, VA	0.150	0.030	Feb 2012	0.200	Nov 2012	0.250	Nov 2013	-		0.250	Continuing	Continuing	Continuing
Alternative Energy	MIPR	CERDEC:Fort Belvoir, VA	0.115	0.050	Feb 2012	0.050	Nov 2012	0.050	Nov 2013	-		0.050	Continuing	Continuing	Continuing
Power Distribution/Management	MIPR	CERDEC:Fort Belvoir, VA	0.306	-		0.041	Nov 2012	0.050	Nov 2013	-		0.050	Continuing	Continuing	Continuing
Subtotal			0.571	0.080		0.291		0.350		0.000		0.350			

	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		4.524	0.669	3.921	2.501	0.000	2.501		

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</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
Complete Test and Evaluation-STEP																												
Transfer to Engineering and Manufacturing Development-STEP																												
Complete Proof of Principle Prototype (Commercial Components)--AEP																												
Coordinate Requirements with USMC; Analyze Field Data																												
Develop Ruggedized Prototypes for Field Evaluations																												
Complete Test and Evaluation--AEP																												
Transfer to Engineering and Manufacturing Development--AEP																												
Complete Test and Evaluation - Commercial IPD/M																												
Test Ruggedized IPP/M with AMMPS Microgrid																												
Transfer to Engineering and Manufacturing Development-IPD/M																												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G11: <i>Adv Elec Energy Con Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Complete Test and Evaluation-STEP	4	2014	4	2014
Transfer to Engineering and Manufacturing Development-STEP	4	2014	4	2014
Complete Proof of Principle Prototype (Commercial Components)--AEP	4	2012	4	2012
Coordinate Requirements with USMC; Analyze Field Data	1	2013	4	2013
Develop Ruggedized Prototypes for Field Evaluations	1	2014	4	2015
Complete Test and Evaluation--AEP	1	2016	4	2016
Transfer to Engineering and Manufacturing Development--AEP	1	2017	1	2017
Complete Test and Evaluation - Commercial IPD/M	3	2012	4	2012
Test Ruggedized IPP/M with AMMPS Microgrid	1	2013	4	2014
Transfer to Engineering and Manufacturing Development-IPD/M	2	2014	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>					PROJECT G14: <i>Materials Handling Equipment - Ad</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
G14: <i>Materials Handling Equipment - Ad</i>	-	0.000	0.149	0.649	-	0.649	0.898	0.402	0.304	0.750	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 component development and Material Handling Equipment (MHE) prototyping and stays abreast of emerging and available technologies to be integrated into military MHE to address identified capability gaps and warfighter objectives. This project enables the development of selected technologies and transition to system integration and development or production of MHE products. MHE includes Rough Terrain Forklifts, Rough Terrain Container Handlers and Cranes, as well as ancillary MHE equipment, to support distribution of critical supplies in the theater of operations. FY14 funding will allow innovative maintenance support technologies to be investigated with the goal to improve diagnostic tasks and to reduce safety and environmental hazards when performing maintenance on tactical MHE in the field.

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

	FY 2012	FY 2013	FY 2014
Title: Field Maintenance and Training Aids for Material Handling Equipment (MHE)	0.000	0.149	0.400
Description: Field Maintenance and Training Aids for Material Handling Equipment (MHE)		0	
FY 2013 Plans: Evaluate the efficacy of proposed devices to improve diagnostic tasks and to prevent spillage of hazardous materials.			
FY 2014 Plans: Develop a solution to eliminate the physical insertion of system faults for maintenance training.			
Title: Baseline Fuel Efficiency of Material Handling Equipment (MHE)	0.000	0.000	0.249
Description: Baseline Fuel Efficiency of Material Handling Equipment (MHE)			
FY 2014 Plans: Instrument and Test MHE equipment to baseline fuel consumption during standard operations.			
Accomplishments/Planned Programs Subtotals	0.000	0.149	0.649

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</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>
• RDT&E: <i>0604804A, Logistics and Engineer Equipment, Engineering Development (H14)</i>	1.613	1.415	0.298		0.298	0.576	0.986	0.964	0.615	Continuing	Continuing

Remarks

D. Acquisition Strategy

Procure prototype test items for engineering tests and demonstrations with subject matter experts. Conduct trades between cost and improved maintainability and environmental risk reduction. Process engineering change proposals, update technical manuals and training materials, and prepare supporting acquisition documents and data to procure new training aids.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</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	MIPR	TARDEC:Warren, MI	0.000	-		0.022		0.186		-		0.186	0.000	0.208	0.000
Subtotal			0.000	0.000		0.022		0.186		0.000		0.186	0.000	0.208	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			
Field Maintenance Aids for MHE	SS/FFP	Kalmar RT Center:Cibolo, TX	0.000	-		0.087		0.340		-		0.340	0.000	0.427	0.000
Subtotal			0.000	0.000		0.087		0.340		0.000		0.340	0.000	0.427	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			
Field Maintenance Aids for MHE	SS/FFP	Kalmar RT Center:Cibolo, TX	0.000	-		0.040		-		-		-	Continuing	Continuing	0.000
Baseline Fuel Efficiency of MHE Equipment	TBD	TBD:TBD	0.000	-		-		0.123		-		0.123	0.000	0.123	0.000
Subtotal			0.000	0.000		0.040		0.123		0.000		0.123			0.000

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
	0.000	0.000	0.149	0.649	0.000	0.649			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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</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				
Evaluate proposed field maintenance and training aids					██████████																											
Develop solution for field maintenance and training aids																																
Baseline fuel efficiency of equipment													██████████																			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT G14: <i>Materials Handling Equipment - Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Evaluate proposed field maintenance and training aids	1	2013	4	2013
Develop solution for field maintenance and training aids	2	2014	2	2014
Baseline fuel efficiency of equipment	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>				PROJECT K39: <i>Field Sustainment Support Ad</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
K39: <i>Field Sustainment Support Ad</i>	-	2.857	2.970	2.161	-	2.161	3.061	3.434	2.727	2.801	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 critical soldier support and sustainment systems including shelter systems (rigid and soft wall), cargo aerial delivery, field service systems, mortuary affairs equipment, heaters, camouflage systems to counter emerging enemy threat technologies, and other combat service support equipment. These systems will fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. This project also supports Advanced Component Development and Prototyping of Critical Distribution Capabilities to include cargo aerial delivery systems; which provide improved safety and accuracy while increasing survivability of aircraft, personnel, and equipment. The project supports the development of tactical heater systems that support mobile Joint Service command and control, medical, and maintenance platforms. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment through aerial delivery initiatives and reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support.

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

	FY 2012	FY 2013	FY 2014
Title: Low Cost Aerial Delivery System P31 (LCADS)	0.700	0.000	0.000
Articles:	0		
Description: LCADS is a modular suite of low cost, expendable parachute/container air items that can be used in lieu of current low and high velocity systems. System includes a low-cost container, high-velocity parachute (70 - 90 feet per second (fps)) and low-velocity parachute (less than 28.5 fps). System is compatible with United States Air Force Aircraft (USAF A/C) and aerial port handling equipment. LCADS is a proven means to execute critical resupply missions without having to place soldiers and ground vehicle convoys on the road.			
FY 2012 Accomplishments: Improvement of LCLA cross and Low velocity parachutes.			
Title: Advanced Cargo Parachute Release System (ACPRS)	0.500	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT K39: <i>Field Sustainment Support Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: The ACPRS will replace the existing M-1 and M-2 cargo parachute release and is intended to decrease the number of inoperable payloads due to rollovers, while also providing a capability to airdrop loads at 500 ft Above Ground Level (AGL).</p> <p>FY 2012 Accomplishments: Initiate OT and work towards Milestone C/Full rate Production Decision.</p>				
<p>Title: Advanced Low Velocity Airdrop System Light and Heavy (ALVADS-L or ALVADS-H)</p> <p align="right">Articles:</p> <p>Description: ALVADS - Light and Heavy are capable of airdrop operations at an altitude of 500-ft Above Ground Level (AGL) with increased aircraft survivability, and improved accuracy. Light Gross rigged weight of 2,520-22,000 pounds (lbs) and Heavy Gross rigged weight of 22,001-42,000 lbs.</p> <p>FY 2012 Accomplishments: Conduct ALVADS-L Design Validation (DV) testing.</p> <p>FY 2013 Plans: Complete ALVADS-L Design Validation (DV), initiate Developmental Testing (DT) and complete Milestone A for ALVADS-H.</p> <p>FY 2014 Plans: Complete ALVADS Design Validation (DV) and system downselect.</p>		1.121 0	1.400 0	1.720
<p>Title: Rapid Rigging and Derigging System (RRDAS)</p> <p align="right">Articles:</p> <p>Description: RRDAS creates a roll-on and roll-off capability for rolling stock, reduces exposure time on the drop zone, and reduces reliance on energy-dissipating material (Honeycomb), thus reducing rigging and de-rigging time.</p> <p>FY 2012 Accomplishments: Award competitive contracts for prototype systems for RRDAS and conduct initial testing of potential candidate systems.</p> <p>FY 2013 Plans: Obtain MS B and award competitive contracts for prototype systems for RRDAS. Begin Design Validation (DV) testing.</p>		0.446 0	1.570 0	0.000
<p>Title: High Speed Container Delivery System (HSCDS)</p> <p>Description: Provides a high speed (250 knot), low altitude (250 ft AGL) capability for up to eight Container Delivery Systems (CDS) containers to enhance aircraft and aircrew safety while improving accuracy and reducing dispersion for receiving ground units.</p>		0.000	0.000	0.441

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
FY 2014 Plans: Complete HSCDS Design Validation (DV) testing.			
Title: SBIR+STTR	0.090	0.000	0.000
Articles:	0		
Description: SBIR+STTR			
FY 2012 Accomplishments: SBIR+STTR			
Accomplishments/Planned Programs Subtotals	2.857	2.970	2.161

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
• OPA MA7806: <i>Precision Airdrop</i>	16.707	5.935	9.500		9.500	7.209	7.395	7.400	5.628	Continuing	Continuing
• RDT&E 643804.VR8: <i>Combat Service Support Systems AD</i>	1.977	2.023	1.613		1.613	2.405	2.619	2.415	2.415	Continuing	Continuing
• RDT&E 654804.VR7: <i>Combat Service Support Systems</i>	2.465	1.745	1.193		1.193	1.965	2.054	1.915	1.915	Continuing	Continuing
• RDT&E 654804.L39: <i>Field Sustainment Support ED</i>	4.094		1.789		1.789	2.753	2.588	2.269	2.456	Continuing	Continuing

Remarks

D. Acquisition Strategy
Accelerate Joint Precision Aerial Delivery System (JPADS) product improvements to transition to 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</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 Support	Various	PM Force Sustainment Sys (FSS), Natick:Natick, MA	4.039	0.595	Dec 2011	0.470		0.450		-		0.450	Continuing	Continuing	Continuing
SBIR+STTR	TBD	Various:Various	0.000	0.090		-		-		-		-	0.000	0.090	0.000
Subtotal			4.039	0.685		0.470		0.450		0.000		0.450			

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			
Soldier Support Equipment	Various	PM Force Sustainment Sys (FSS), Natick:Natick, MA	15.934	-		-		-		-		-	Continuing	Continuing	Continuing
LCADS P3I Effort	Various	Various:Various	1.200	0.100	Dec 2011	-		-		-		-	Continuing	Continuing	Continuing
JPADS 2K and 10K product improvements	Various	Various:Various	5.900	-		-		-		-		-	Continuing	Continuing	Continuing
High Speed Container Delivery System (HSCDS)	Various	Various:Various	1.097	-		-		0.116		-		0.116	Continuing	Continuing	Continuing
ALVADS Development	Various	Various:Various	7.900	0.550	Dec 2011	0.400		0.495		-		0.495	Continuing	Continuing	Continuing
RRDAS Development	Various	Various:Various	2.000	0.200	Aug 2012	0.750		-		-		-	Continuing	Continuing	Continuing
Next Generation Human Remains Transfer Case Development	Various	Various:Various	2.220	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			36.251	0.850		1.150		0.611		0.000		0.611			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</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
Obtain Milestone B on Advanced Low Velocity Airdrop System -Light(ALVADS-L)	■																											
Conduct Milestone A on RRDAS							■																					
Conduct MS B on Rapid Rigging Derigging Airdrop System (RRDAS)							■																					
Conduct DV and DT on RRDAS								■																				
Conduct Milestone A (MS A) for ALVADS (H)								■																				
Conduct MS B for ALVADS							■																					
Conduct DV on ALVADS										■	■	■	■	■	■													
Conduct DV for ALVADS (L)		■	■	■	■	■	■																					
Obtain Milestone B for MBPS stand alone version	■																											
Obtain MS B for JPADS Block I upgrade														■														
Conduct DV for JPADS Block I upgrade														■	■	■	■	■	■									
Initiate DT for JPADS Block I upgrade																												
Obtain Milestone B on High Speed Container Delivery System (HSCDS)								■																				
Conduct DV on HSCDS												■	■	■	■	■												
Conduct DT on HSCDS																												
Complete Advanced Development on HSCDS																												
Conduct Milestone A on Autoload Hookup/ Rotary A/C																												
Fabricate DV systems on Autoload Hookup/ Rotary A/C																												
Complete DV on Autoload Hookup/Rotary A/C																												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</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				
Conduct Milestone B on Autoload Hookup/ Rotary A/C																																
Fabricate OT systems for Autoload Hookup/ Rotary A/C																																
Conduct Milestone B for Next Generation LCADS																																
Fabricate DT systems for Next Generation LCADS																																
Complete DT for Next Generation LCADS																																

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Obtain Milestone B on Advanced Low Velocity Airdrop System -Light(ALVADS-L)	2	2012	2	2012
Conduct Milestone A on RRDAS	3	2013	3	2013
Conduct MS B on Rapid Rigging Derigging Airdrop System (RRDAS)	3	2013	3	2013
Conduct DV and DT on RRDAS	4	2013	4	2013
Conduct Milestone A (MS A) for ALVADS (H)	4	2013	4	2013
Conduct MS B for ALVADS	3	2013	3	2013
Conduct DV on ALVADS	1	2014	1	2015
Conduct DV for ALVADS (L)	3	2012	2	2013
Obtain Milestone B for MBPS stand alone version	2	2012	2	2012
Obtain MS B for JPADS Block I upgrade	1	2015	1	2015
Conduct DV for JPADS Block I upgrade	2	2015	1	2016
Initiate DT for JPADS Block I upgrade	3	2016	4	2016
Obtain Milestone B on High Speed Container Delivery System (HSCDS)	4	2013	4	2013
Conduct DV on HSCDS	3	2014	2	2015
Conduct DT on HSCDS	3	2015	1	2016
Complete Advanced Development on HSCDS	2	2016	3	2016
Conduct Milestone A on Autoload Hookup/Rotary A/C	2	2016	2	2016
Fabricate DV systems on Autoload Hookup/Rotary A/C	4	2016	4	2016
Complete DV on Autoload Hookup/Rotary A/C	1	2017	4	2017
Conduct Milestone B on Autoload Hookup/Rotary A/C	4	2017	4	2017
Fabricate OT systems for Autoload Hookup/Rotary A/C	2	2018	2	2018
Conduct Milestone B for Next Generation LCADS	2	2017	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K39: <i>Field Sustainment Support Ad</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Fabricate DT systems for Next Generation LCADS	4	2017	4	2017
Complete DT for Next Generation LCADS	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>				PROJECT K41: <i>Water And Petroleum Distribution - Ad</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
K41: <i>Water And Petroleum Distribution - Ad</i>	-	3.990	2.706	2.263	-	2.263	3.617	3.314	3.022	3.544	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 and demonstrates the potential of prototype equipment and technologies to satisfy petroleum storage, distribution, and quality surveillance system requirements. The Concept and Technology Development program supports the development and enhancement of rapidly deployable Petroleum and Water equipment. The mission includes developing onboard fuels quality analysis systems; achieving greater capabilities in the removal of Nuclear, Biological, Chemical (NBC) and other contaminants from water sources; reducing the logistics foot print; developing water reutilization systems to reduce the requirement for transport of water into the theater; and material systems to decrease the logistics foot print and employment time for the transfer of liquid logistics in the theater. This vital equipment enables the Army to achieve its mission by providing the Army with the means to be highly mobile and self-sustaining in very hostile theaters of operations. Future Force operations demand that combat systems be rapidly deployable to the theater, rapidly emplaced upon arrival, and rapidly relocated to support a fast moving non-linear battlefield.

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

	FY 2012	FY 2013	FY 2014
Title: Water Systems Capability Improvements	0.265	0.250	0.268
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2012 Accomplishments: Evaluate improved Tactical Water Purification Systems (TWPS) microfilters.			
FY 2013 Plans: Develop alternative pretreatment membranes for Tactical Water Purification Systems (TWPS) and Lightweight Water Purifier (LWP).			
FY 2014 Plans: Continue developing alternative pretreatment membranes for Tactical Water Purification Systems (TWPS) and Lightweight Water Purifier (LWP).			
Title: Expeditionary Water Packaging System (EWPS).	1.477	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Description: Funding is provided for the following effort.				
FY 2012 Accomplishments: Prepare program documentation and purchase demonstration system.				
Title: 3K Tactical Water Purification System (3K TWPS).		0.822	2.096	1.495
		Articles: 0	0	
Description: Funding is provided for the following effort				
FY 2012 Accomplishments: Perform pilot test of potential components.				
FY 2013 Plans: Fabricate full scale prototype 3K Tactical Water Purification System (TWPS).				
FY 2014 Plans: Continue fabrication and testing of full scale prototype 3K Tactical Water Purification System (TWPS).				
Title: Water Quality Monitoring.		0.200	0.000	0.000
		Articles: 0		
Description: Funding is provided for the following effort				
FY 2012 Accomplishments: Integrate and test in-line water quality analysis equipment developed under TARDEC S&T program.				
Title: Fuel System Supply Points (FSSPs)		1.000	0.360	0.500
		Articles: 0	0	
Description: Funding is provided for the following effort				
FY 2012 Accomplishments: Develop prototype common pumping assembly for use in all Fuel System Supply Points (FSSPs). Test prototype automated tank gauging for collapsible fabric tanks in FSSPs.				
FY 2013 Plans: Market investigation for family of meters for fuel dispensing systems and commercial on-board truck meters.				
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Address the capability gap for automated gauging to capture fuel quantities in collapsible tanks in the Fuel System Supply Point (FSSP). This includes the development of a data device that will transmit and store the data internally for the system and externally to high command.			
Title: Modular Tactical Refueling System (MTRS)	0.100	0.000	0.000
Articles:	0		
Description: Funding is provided for the following effort			
FY 2012 Accomplishments: Product development of the Modular Tactical Refueling System (MTRS). Down select components and begin subassemble.			
Title: SBIR and STIR	0.126	0.000	0.000
Articles:	0		
Description: Funding is provided for the following effort.			
FY 2012 Accomplishments: SBIR and STIR			
Accomplishments/Planned Programs Subtotals	3.990	2.706	2.263

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
• PM PAWS Project L41 654804: <i>Logistics and Engineer Equipment - Engineering Development</i>	2.012	3.839	2.650		2.650	4.186	4.106	3.789	3.817	Continuing	Continuing
• Distribution Sys Petroleum & Water: <i>Distribution Systems Petroleum & Water</i>	75.457	38.385	60.612		60.612	63.364	66.259	61.996	56.038	Continuing	Continuing

Remarks

D. Acquisition Strategy
C. Develop engineering prototypes or select Non-Developmental Item based on market surveys and proposals from industry. Competitive; sole source contracts.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</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	TBD	TBD:TBD	0.000	0.126		-		-		-		-	0.000	0.126	0.000
Subtotal			0.000	0.126		0.000		0.000		0.000		0.000	0.000	0.126	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			
Water System Capability Improvements	Various	TBD:TBD	0.645	0.100	Feb 2012	0.100		0.100	Oct 2012	-		0.100	Continuing	Continuing	Continuing
3K Tactical Water Purification System (3K TWPS)	Various	TARDEC:Warren, MI	0.061	0.100	Feb 2012	0.596		0.600	Oct 2012	-		0.600	Continuing	Continuing	Continuing
Water Quality Monitoring	Various	TARDEC:Warren, MI	0.250	0.020	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
3K Tactical Water Purification System (3K TWPS)	Various	NFESC:Port Hueneme, CA	0.389	0.300	Feb 2012	0.600		0.395	Oct 2012	-		0.395	Continuing	Continuing	Continuing
Fuel Gauging Improvements	Various	TBD:TBD	0.424	-		0.360		0.500	Jan 2014	-		0.500	Continuing	Continuing	Continuing
Bulk Fuel Distribution	Various	TBD:TBD	0.704	0.700	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Expeditionary Water Packaging System (EWPS)	SS/FFPLOE	TARDEC:Warren, MI	0.000	1.177	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Modular Tactical Refueling System (MTRS)	RO	TARDEC:Warren, MI	0.000	0.100	Feb 2012	-		-		-		-	Continuing	Continuing	0.000
Subtotal			2.473	2.497		1.656		1.595		0.000		1.595			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</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			
Water System Capability Improvements	Various	TARDEC:Warren, MI	0.853	-		0.150		-		-		-	Continuing	Continuing	Continuing
3K Tactical Water Purification System (TWPS)	Various	TARDEC:Warren, MI	0.000	-		0.500		0.200	Oct 2012	-		0.200	Continuing	Continuing	Continuing
Subtotal			0.853	0.000		0.650		0.200		0.000		0.200			

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			
Water Systems Capability Improvements	Various	TARDEC:Warren, MI	1.016	0.165	Feb 2012	-		0.168	Oct 2012	-		0.168	Continuing	Continuing	Continuing
Water Quality Monitoring	Various	Aberdeen Proving Ground,MD:APG, MD	0.000	0.030	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Water Quality Monitoring	Various	TARDEC:Warren, MI	0.150	0.150	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
3K Tactical Water Purification System (3K TWPS)	RO	TARDEC:Warren, MI	0.000	0.422	Feb 2012	0.400		0.300	Oct 2012	-		0.300	Continuing	Continuing	Continuing
Fuel Pumping Assembly Improvements	Various	TARDEC:Warren, MI	0.100	0.600	Feb 2012	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			1.266	1.367		0.400		0.468		0.000		0.468			

			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			4.592	3.990	2.706	2.263	0.000	2.263			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</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
Water from Air																												
Future Fuels Storage Systems																												
Small Unit Water Purifier																												
Waste Water/Water Recycle Systems																												
Battlefield Fluid Delivery System (BFDS) 50 Mile Early Entry																												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT K41: <i>Water And Petroleum Distribution - Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Water from Air	1	2016	4	2017
Future Fuels Storage Systems	4	2016	4	2018
Small Unit Water Purifier	1	2015	4	2015
Waste Water/Water Recycle Systems	4	2017	4	2018
Battlefield Fluid Delivery System (BFDS) 50 Mile Early Entry	4	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</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
VR8: <i>Combat Service Support Systems - Ad</i>	-	1.977	2.023	1.613	-	1.613	2.405	2.619	2.415	2.415	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 critical soldier support and sustainment systems including shelter systems (rigid and soft wall), base camp subsystems, field service systems, mortuary affairs equipment, heaters, camouflage systems to counter emerging enemy threat technologies, and other combat service support equipment. These systems will fill identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. This project supports Advanced Component Development and Prototyping of Critical tactical support systems that support mobile Joint Service command and control, medical, and maintenance platforms. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and The Army's Modular Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment and reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support.

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

	FY 2012	FY 2013	FY 2014
Title: Zero-Footprint Base Camp	0.984	0.751	0.000
Articles:	0	0	
Description: Zero-Footprint Base Camp reduces the operational energy and logistics footprint of the expeditionary base camp system, with the goal being a significant reduction in fuel, water, and power requirements to sustain operations in the field. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an enormous amount of by products, both of which cost money, human effort (that means a risk in the form of soldiers on the road), and represents a potential vulnerability.			
FY 2012 Accomplishments: Conduct Developmental Testing and Operational Testing (DT/OT) on Zero-Footprint Base Camp capabilities for Joint base camp systems in support of the Office of Secretary of Defense (OSD) Joint Expeditionary Basing Work Group initiative			
FY 2013 Plans: Conduct evaluation of integrated technologies that are transitioning for the RDECOM 6.3 programs in a realistic operating environment at the Ft Devens Base Camp Systems Integration Laboratory (SIL). Efforts are focused on proving out subsystem			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT VR8: <i>Combat Service Support Systems - Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
maturity and the potential of these technologies before transitioning into System Development and Demonstration and putting them into operational use within the Army Force Provider base camps as a Pre-Planned Product Improvements (P3I). Focus will be on evaluating technologies that will improve upon the environmental and energy efficiency performance of the base camp. Specifically: 1) Evaluation of a variety of high performance insulating materials that are light-weight, durable, and cost effective; 2) Integration and evaluation of micro-grid / smart power / renewable energy solutions that can be incorporated into the standard Army Force Provider modules; and 3) Integration and evaluation of smart and energy efficient Environmental Control Units / Heaters that will compliment improved shelter efficiencies and significantly reduce the fuel demand on base camp operations.				
Title: Net-Zero Energy Efficiency Solutions		0.490	1.050	0.885
		Articles: 0	0	
Description: Net-Zero Energy Efficiency Solutions reduce the logistics footprint of the expeditionary base camp system, with the goal being a significant reduction in fuel, water, and power requirements to sustain operations in the field. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an enormous amount of by products, both of which cost money, human effort (that means a risk in the form of soldiers on the road), and represents a potential vulnerability.				
FY 2012 Accomplishments: Conduct evaluation on Net-Zero energy efficiency solutions for Force Provider				
FY 2013 Plans: Continue evaluation of Net-Zero energy efficiency solutions for Force Provider. In early FY 13 transition Energy Efficiency (E2) shelter kit solutions into System Development and Demonstration for Developmental Testing (DT).				
FY 2014 Plans: Conduct evaluation of integrated technologies that are transitioning for the RDECOM 6.3 programs in a realistic operating environment at the Ft Devens Base Camp Integration Laboratory (BCIL). Efforts are focused on proving out subsystem maturity and the potential of these technologies before transitioning into System Development and Demonstration and putting them into operational use within the Army Force Provider base camps as a Pre-Planned Product Improvements (P3I). Focus will be on evaluating technologies that will improve upon the environmental and energy efficiency performance of the base camp. Specifically: 1) Integration and evaluation of micro-grid / smart power / renewable energy/ power storage solutions that can be incorporated into Force Provider modules to complement the Advanced Medium-sized Mobile Power Source (AMMPS) for standard Army Force Provider modules; and 2) Integration and evaluation of energy efficient Expeditionary Rigid Wall Shelters with integrated Environmental Control Units / Heaters that will compliment improved shelter efficiencies and significantly reduce the fuel demand on base camp operations.				
Title: Modular Ballistic Protection System (MBPS)		0.441	0.222	0.378

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>		PROJECT VR8: <i>Combat Service Support Systems - Ad</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p align="right">Articles:</p> <p>Description: MBPS is a lightweight, rapidly deployable and reusable ballistic protection system that can be installed in commonly used military shelters in expeditionary and remote base camps and outposts where more robust forms of ballistic protection (i.e. sandbags, concrete barriers) are not readily available or logistically feasible.</p> <p>FY 2012 Accomplishments: Conduct Developmental Testing (DT) on internal TEMPER Modular Ballistic Protection System (MBPS). Prepare documentation to support Milestone B for stand-alone variant of MBPS. Obtain Milestone B and initiate development of stand-alone version.</p> <p>FY 2013 Plans: Complete development of stand-alone variant, conduct DT on stand-alone variant, and transition to System Development and Demonstration.</p> <p>FY 2014 Plans: Complete DT for MBPS stand-alone variant and Rigid Wall Shelter panels. Transition into System Development and Demonstration.</p>		0	0	
<p>Title: Ultralightweight Camouflage Net System (ULCANS)</p> <p>Description: ULCANS is durable, robust, snag resistant state of the art camouflage system that provides increased survivability against multi-spectral visual, infrared and radar threats, thermal signature suppression and significant thermal/solar reduction capability. ULCANS utilizes a snag-free design and is capable of use in all types of weather and climatic conditions except in heavy snow and in winds greater than 46 MPH. ULCANS Desert Radar Scattering, Desert Radar Transparent, Woodland Radar Scattering, and Woodland Radar Transparent Variants are integrated systems that are very lightweight, easily deployable, versatile, user friendly and tailored to the equipment meeting the requirements of operations for combat systems, command and control equipment, logistic support sites, tactical facilities, and fixed facilities for mobile systems. RDT&E funding supports formal development of new ULCANS variants (snow, urban, aviation, 2 sided system) and necessary technology/signature enhancements for current ULCANS variants.</p> <p>FY 2014 Plans: Prepare documentation to obtain Milestone B decision approval, conduct contract planning and execution, and initiate development for ULCANS technology enhancements/new variants.</p>		0.000	0.000	0.350
<p>Title: SBIR+STTR</p> <p>Description: SBIR+STTR</p>		0.062 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
FY 2012 Accomplishments: SBIR+STTR			
Accomplishments/Planned Programs Subtotals	1.977	2.023	1.613

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>
• RDT&E 643804.K39: <i>Field Sustainment Support AD</i>	2.857	2.970	2.161		2.161	3.061	3.434	2.727	2.801	Continuing	Continuing
• RDT&E 654804.L39: <i>Field Sustainment Support ED</i>	4.094	2.550	1.789		1.789	2.753	2.588	2.269	2.456	Continuing	Continuing
• RDT&E 654804.VR7: <i>Combat Service Support Systems</i>	2.465	1.745	1.193		1.193	1.965	2.054	1.915	1.915	Continuing	Continuing
• OPA M80200: <i>Force Provider</i>	68.000									0.000	68.000

Remarks

D. Acquisition Strategy

Accelerate Base Camp efficiency and safety initiatives to incorporate in deployed camps and/or incorporate during reset of 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 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</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 Support	Various	PM Force Sustainment Systems:Natick, MA	0.000	0.203		0.199		0.185		-		0.185	Continuing	Continuing	0.000
SBIR+STTR	TBD	various:Various	0.000	0.062		-		-		-		-	0.000	0.062	0.000
Subtotal			0.000	0.265		0.199		0.185		0.000		0.185			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			
Soldier Support Equipment	Various	Various:Various	0.000	0.780		0.920		0.578		-		0.578	Continuing	Continuing	0.000
Subtotal			0.000	0.780		0.920		0.578		0.000		0.578			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			
Soldier Support Equipment	Various	Various:Various	0.000	0.932		0.904		0.850		-		0.850	Continuing	Continuing	0.000
Subtotal			0.000	0.932		0.904		0.850		0.000		0.850			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	1.977	2.023	1.613	0.000		1.613	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</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
Obtain Milestone B on Mobile Integrated Shop Shelter System																												
Conduct DT/OT on Mobile Integrated Shop Shelter System																												
Obtain MS B on SoS Base Camp Efficiency & Environ (E2) project																												
Conduct DT on SoS Base Camp Efficiency & Environ(E2) project																												
Obtain Milestone B on Advanced Mortuary Affairs Systems																												
Execute technology improvements to ULCANS variants and conduct DT/OT																												
Obtain Milestone B on MBPS																												
Conduct DT/OT on MBPS																												
Obtain Milestone B on ULCANS																												
Conduct DV on Force Provider Renewable Energy Kit																												
Conduct DT/OT on Microgrid Loadshedding Kit for Force Provider																												
Conduct DT/OT on Force Provider Renewable Energy Kits																												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603804A: <i>Logistics and Engineer Equipment - Adv Dev</i>	PROJECT VR8: <i>Combat Service Support Systems - Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Obtain Milestone B on Mobile Integrated Shop Shelter System	2	2015	2	2015
Conduct DT/OT on Mobile Integrated Shop Shelter System	1	2016	4	2016
Obtain MS B on SoS Base Camp Efficiency & Environ (E2) project	2	2014	2	2014
Conduct DT on SoS Base Camp Efficiency & Environ(E2) project	1	2015	2	2016
Obtain Milestone B on Advanced Mortuary Affairs Systems	2	2018	2	2018
Execute technology improvements to ULCANS variants and conduct DT/OT	3	2014	4	2018
Obtain Milestone B on MBPS	4	2013	4	2013
Conduct DT/OT on MBPS	2	2014	4	2014
Obtain Milestone B on ULCANS	2	2014	2	2014
Conduct DV on Force Provider Renewable Energy Kit	3	2017	4	2017
Conduct DT/OT on Microgrid Loadshedding Kit for Force Provider	3	2017	1	2018
Conduct DT/OT on Force Provider Renewable Energy Kits	1	2018	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and 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
Total Program Element	-	5.090	5.054	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
091: <i>CBT SVC SPT CONTRL SYS</i>	-	5.090	5.054	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 Battle Command Sustainment Support System (BCS3) is the logistics Command and Control (C2) solution for U.S. land forces. BCS3 Provides Integrated Battle Command Capabilities, training and support to the Joint Land Component Warfighter. It is the logistics/sustainment part of Mission Command. BCS3 provides commanders the capability to execute end-to-end distribution and deployment management and brings better situational awareness resulting in better decision-making capability to Warfighters. It enables Warfighters to acquire, scale and tailor critical logistics information in near-real time in order to enable the Warfighter in the planning and execution of operations. BCS3 provides an effective means to gather and integrate asset and in-transit information to manage distribution and deployment missions. BCS3 combines distribution management to include commodity and convoy tracking, and deployment management into a logistics Common Operating Picture (COP) for one mission-focused visual display. It is an inherent part of the common operating environment (COE). It provides the sustainment functionality in the command post computing environment (CP/CE).

BCS3 has been adopted and integrated into Joint and strategic logistics (C2) processes. BCS3 is the only near-term end-to-end logistics COP solution for the Joint commander. BCS3 will maintain its core capabilities and continue to advance in development while integrating into the Joint (C2) architecture. This continued development will enable decision superiority via advanced collaborative information sharing achieved through interoperability.

BCS3 has immediate, high pay-off benefit to Warfighters and additional future growth in its capabilities. BCS3 is a force multiplier, a precision tool for sustainment/logistics planning and execution. It is a core part of CP/CE.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and Analysis</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	5.250	5.054	0.000	-	0.000
Current President's Budget	5.090	5.054	0.000	-	0.000
Total Adjustments	-0.160	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and Analysis</i>				PROJECT 091: <i>CBT SVC SPT CONTRL 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
091: <i>CBT SVC SPT CONTRL SYS</i>	-	5.090	5.054	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 Battle Command Sustainment Support System (BCS3) is the logistics Command and Control (C2) solution for U.S. land forces. BCS3 Provides Integrated Battle Command Capabilities, training and support to the Joint Land Component Warfighter. It is the logistics/sustainment part of Mission Command (MC). BCS3 provides commanders the capability to execute end-to-end distribution and deployment management and brings better situational awareness resulting in better decision-making capability to Warfighters. It enables Warfighters to acquire, scale and tailor critical logistics information in near-real time in order to enable the Warfighter in the planning and execution of operations. BCS3 provides an effective means to gather and integrate asset and in-transit information to manage distribution and deployment missions. BCS3 combines distribution management to include commodity and convoy tracking, and deployment management into a logistics Common Operating Picture (COP) for one mission-focused visual display. It is an inherent part of the common operating environment (COE). It provides the sustainment functionality in the command post computing environment (CP/CE).

BCS3 has been adopted and integrated into Joint and strategic logistics (C2) processes. BCS3 is the only near-term end-to-end logistics COP solution for the Joint commander. BCS3 will maintain its core capabilities and continue to advance in development while integrating into the Joint (C2) architecture. This continued development will enable decision superiority via advanced collaborative information sharing achieved through interoperability.

BCS3 has immediate, high pay-off benefit to Warfighters and additional future growth in its capabilities. BCS3 is a force multiplier, a precision tool for sustainment/logistics planning and execution. It is a core part of CP/CE.

This program has no FY14 Base or OCO request.

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

Title: Program Office Management	FY 2012	FY 2013	FY 2014
	0.577	0.450	0.000
Articles:	0	0	
Description: Funding is provided for the following efforts			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and Analysis</i>	PROJECT 091: <i>CBT SVC SPT CONTRL SYS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continues program management support. FY 2013 Plans: Continues program management support.			
Title: MC Migration & SW Development Description: Funding is provided for the following effort	3.713	3.904	0.000
Articles:	0	0	
FY 2012 Accomplishments: Development efforts for National Data Portal, Logistics Web Services, and Thick & Thin clients. FY 2013 Plans: Development efforts for National Data Portal, Logistics Web Services, and Thick & Thin clients.			
Title: Systems Engineering and Test Description: Funding is provided for the following effort	0.800	0.700	0.000
Articles:	0	0	
FY 2012 Accomplishments: Continues System Engineering and Testing FY 2013 Plans: Continues System Engineering and Testing			
Accomplishments/Planned Programs Subtotals	5.090	5.054	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>
• SSN W34600: <i>Battle Command Sustainment Support System</i>	22.454	10.511	14.446		14.446					0.000	47.411

Remarks

D. Acquisition Strategy
The program provides essential logistical/sustainment capabilities to Tactical Operations Center utilizing a common platform (Mission Command Work Station), and will provide a complete set of capabilities via web enabled services.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and Analysis</i>	PROJECT 091: <i>CBT SVC SPT CONTRL SYS</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and Analysis</i>	PROJECT 091: <i>CBT SVC SPT CONTRL 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 Office Management	TBD	PMO Support:APG, MD	29.293	0.577	Aug 2012	0.450	Jan 2013	-		-		-	Continuing	Continuing	Continuing
Subtotal			29.293	0.577		0.450		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			
Software Development	TBD	Northrop Grumman:Carson, CA	166.871	-		-		-		-		-	0.000	166.871	0.000
Software Development - (National Enterprise Data Portal, Logistics Web Services)	C/CPFF	IBM:Bethesda, MD	10.982	1.246	Apr 2012	1.227	Dec 2012	-		-		-	Continuing	Continuing	Continuing
Client Development - (Thick & Thin Clients)	C/CPFF	IBM:Bethesda, MD	0.000	2.467	Sep 2012	2.677	Sep 2013	-		-		-	0.000	5.144	0.000
JUONS CC-0445 Development	SS/CPFF	IBM:Bethesda, MD	6.900	-		-		-		-		-	0.000	6.900	0.000
Subtotal			184.753	3.713		3.904		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			
Technical Support	TBD	Technical Support:APG, MD	9.797	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			9.797	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and Analysis</i>	PROJECT 091: <i>CBT SVC SPT CONTRL 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

PM Mission Command COE Version 2.0 (CS 15-16) Software Development	<div style="background-color: black; width: 100%; height: 100%;"></div>
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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603805A: <i>Combat Service Support Control System Evaluation and Analysis</i>	PROJECT 091: <i>CBT SVC SPT CONTRL SYS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PM Mission Command COE Version 2.0 (CS 15-16) Software Development	2	2012	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv 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	-	34.809	24.384	15.603	-	15.603	30.796	28.442	25.763	25.015	Continuing	Continuing
808: <i>DoD Drug & Vacc Ad</i>	-	11.970	9.987	6.892	-	6.892	13.652	15.008	14.353	13.292	Continuing	Continuing
811: <i>Mil HIV Vac&Drug Dev</i>	-	2.273	2.294	0.550	-	0.550	1.096	0.987	0.859	1.023	Continuing	Continuing
836: <i>Field Medical Systems Advanced Development</i>	-	19.003	11.638	7.599	-	7.599	15.591	12.447	10.551	10.700	Continuing	Continuing
VST7: <i>MEDEVAC Mission Equipment Package (MEP) - Adv Dev</i>	-	1.563	0.465	0.562	-	0.562	0.457	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

FY14 adjustment was due to higher priorities in DoD.

A. Mission Description and Budget Item Justification

This program element (PE) funds development of medical materiel at the start of an official program of record, within the early system integration portion of the System Development and Demonstration phase of the acquisition life cycle using 6.4 funding. Program efforts support transition of promising Science and Technology candidate medical technologies (drugs, vaccines, medical devices, diagnostics, and mechanisms for detection and control of disease carrying insects) to larger scale testing in humans for safety and effectiveness. Programs are aligned to meet Future Force (F2) requirements stressed within concept documents and organizational structures. The PE provides funding for Food and Drug Administration (FDA) regulated human clinical trials to gain additional information about safety and effectiveness on the path to licensure for use in humans. The Projects supported by this PE are:

(PROJ 836) funds the demonstration and validation of medical products for enhanced combat casualty care and follow-on care, including rehabilitation. This project also funds the human clinical trials that test the safety and effectiveness of biologics, devices and demonstration. Clinical trials are conducted in accordance with U.S. Food and Drug Administration (FDA) regulations. Products from this project will transition to 832.

(PROJ 808) funds development of candidate medical countermeasures for infectious diseases of military relevance. Efforts include vaccines, drugs, diagnostic kits/ devices, and insect control measures. These funds support human clinical efficacy trials of the drug/vaccine in a larger group that are designed to assess performance and to continue safety assessments in a larger group of volunteers. Products from this project will transition to 849.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>
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(PROJ 811) funds the development of military relevant human immunodeficiency virus (HIV) medical countermeasures. It provides funding for planning and conducting of human clinical trials in a group of healthy volunteers to assess the drug/vaccine for safety, tolerability, how the drug/vaccine is distributed, metabolized, and excreted from the body, and investigate the appropriate dose for therapeutic use. Products from this project will transition to Project 812.

(PROJ VS7) program upgrades, retrofits, trains, and sustains the 256 Medical Evacuation legacy helicopters that continue to play a major role in Iraq and Afghanistan. The force design will increase the number of air frames in the force from 12 to 15 aircraft for 37 MEDEVAC companies to better meet operation needs. Products from this project will transition to VS8.

This program is managed by U.S. Army Medical Materiel Development Activity (USAMMDA) and U.S. Army Medical Materiel Agency (USAMMA) of the US Army Medical Research and Materiel Command.

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	35.543	24.384	20.818	-	20.818
Current President's Budget	34.809	24.384	15.603	-	15.603
Total Adjustments	-0.734	0.000	-5.215	-	-5.215
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.734	-			
• Adjustments to Budget Years	-	-	-5.215	-	-5.215

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 808: <i>DoD Drug & Vacc Ad</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
808: <i>DoD Drug & Vacc Ad</i>	-	11.970	9.987	6.892	-	6.892	13.652	15.008	14.353	13.292	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 candidate medical countermeasures for infectious diseases of military relevance. These efforts are in: vaccines, drugs, diagnostic kits/devices, and determining if insects are infected with pathogenic organisms capable of infecting service members/preventive medicine measures. These funds support human clinical effectiveness (capacity to produce a desired size of an effect under ideal or optimal conditions) trials of the drug/vaccine in larger groups that are designed to assess how well the drug/vaccine works, and to continue safety assessments in a larger group of volunteers. Funding supports both technical evaluations and human clinical testing to assure the safety and effectiveness of medical diagnostic kits and devices. This work, which is performed in military laboratories or civilian pharmaceutical firms, is directed toward the prevention of disease, early diagnosis, and speeding recovery once diagnosed; to enhance battlefield readiness. All clinical trials are conducted in accordance with U.S. Food and Drug Administration (FDA) regulations, a mandatory obligation for all military products placed into the hands of medical providers or service members. Product development priorities are determined based upon four major factors: (1) the extent and threat of the disease within the Combatant Commands theater of operations, (2) the clinical severity of the disease, (3) the technical maturity of the proposed solution, and (4) the affordability of the solution (development and production).

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

	FY 2012	FY 2013	FY 2014
Title: DoD Drug and Vaccine Advanced Development	11.970	9.987	6.892
Articles:	0	0	
Description: Funding is provided for the following effort in the development of candidate medical countermeasures for military relevant infectious disease.			
FY 2012 Accomplishments: Reviewed evaluations, and human clinical trials of malarial/anti-malarial drugs, vaccines, diagnostics, insect repellents, and grouped infectious disease (Dengue [a severe debilitating disease caused by a virus and transmitted by a mosquito] and Leishmania [a skin-based disease caused by a parasite and transmitted by sand flies]) vaccines, drugs and diagnostics. Sought industry partner and evaluated and completed down-selection of drug candidates for human trials for prevention or treatment of malaria. Continued to evaluate the vaccine candidate for Dengue with industry partner Sanofi Pasteur. For Topical			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>		PROJECT 808: <i>DoD Drug & Vacc Ad</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Antileishmanial Cream, continued a human treatment protocol in the US, the industry partner continued stability testing of the drug product, and project 849 supported the overseas human clinical trials activities of the topical cream.</p> <p>FY 2013 Plans: The New Standard Military Insect Repellant testing transitioned to advanced development in FY 2011, to be funded with Defense Health Program Budget Activity 7 funding as the potential candidates are all commercially available. Will review evaluations, and data from the Phase 2 safety/effectiveness clinical trials completed in FY 2012 for the Topical Antileishmanial Cream; complete preparation for Phase 3 Pivotal clinical trials for Topical Antileishmanial Cream; continue site development efforts in Cambodia and begin a Phase 3 Pivotal clinical trial for Malaria Prophylaxis with commercial partner Glaxo-Smith Kline; finalize analysis and evaluation of Phase 2 effectiveness and safety data for the vaccine candidate for Dengue with industry partner Sanofi Pasteur; transition JBAIDS assay planned to advanced development and begin developmental testing; complete final process validation for Leishmania Rapid Diagnostic Device (LRDD); complete FDA approval and transition to Project 849 for Antimalarial Drug, Artesunate Intravenous.</p> <p>FY 2014 Plans: Topical Antileishmanial Cream: will complete site development efforts for Phase 3 New World pivotal safety and effectiveness clinical trial on a diverse population. Malaria Prophylaxis Drug: will complete site development efforts in Cambodia for and initiate Phase 3 (Safety and Effectiveness Clinical Trials on 250 to 3000 subjects) pivotal clinical trials with commercial partner Glaxo-Smith Kline . Tetravalent Dengue Vaccine: will continue volunteer follow up and subsequent analysis of data from pivotal Phase 3 (safety and effectiveness clinical trials on 250 to 3000 subjects) endemic region studies of Tetravalent Dengue Vaccine with commercial partner Sanofi Pasteur , who will provide Go/No Go decision for pursuit of compressed vaccination schedule for US traveler/military indication. Joint Biological Agent identification and Diagnostic System (JBAIDS): An updated Analysis of Alternatives (AoA) and requirements analysis helped to determine that The Dengue JBAIDS capability does not meet user needs; therefore, the project has been terminated. Leishmania Rapid Diagnostic Device (LRDD): Will transition LRDD to Project 849 after completing analytical testing and Good Manufacturing Practices manufacturing runs. Preventive Medicine Products: Preventive medicine products for the control/mitigation of arthropod (insect) borne diseases field testing and evaluation will be delayed for several product candidates to include: field deployable detection devices for Chikungunya, Rift Valley Fever, Sand Fly Fever, Crimean-Congo Fever, advanced arthropod collection devices, Saliva Capture RTA card, spatial repellents, and advanced pesticides based on decrement due to poor disbursements in FY2012. Infectious Disease Diagnostic products field testing and evaluation will be delayed for several product candidates to include: Scrub Typhus, Rickettsiae, and Sand Fly Fever based on decrement due to poor disbursements in FY2012.</p>				
Accomplishments/Planned Programs Subtotals		11.970	9.987	6.892

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 808: <i>DoD Drug & Vacc Ad</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy Test and evaluate in-house and commercially developed products in extensive government-managed clinical trials to gather data required for FDA licensure and Environmental Protection Agency registration.		
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 808: <i>DoD Drug & Vacc Ad</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			
Medical Product Development Management Services Cost	Various	Not Applicable:Not applicable	12.062	1.470		1.919		1.939		-		1.939	Continuing	Continuing	Continuing
Subtotal			12.062	1.470		1.919		1.939		0.000		1.939			

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			
Medical Product Development Cost	Various	Not applicable:Not applicable	12.509	8.269		3.080		2.070		-		2.070	Continuing	Continuing	Continuing
Product Development of Malaria Prophylaxis	Various	Walter Reed Army Institute of Research:Silver Spring, MD	0.000	-		3.000		-		-		-	0.000	3.000	0.000
Product Development of Malaria Prophylaxis	Allot	Armed Forces Research Institute of Medical Sciences:Cambodia	0.000	-		-		2.111		-		2.111	0.000	2.111	0.000
Subtotal			12.509	8.269		6.080		4.181		0.000		4.181			

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			
Medical Product Development Support Cost	Various	Not Applicable:Not applicable	6.385	1.431		1.388		0.448		-		0.448	Continuing	Continuing	Continuing
Subtotal			6.385	1.431		1.388		0.448		0.000		0.448			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 808: <i>DoD Drug & Vacc Ad</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
Topical Antileishmanial Cream CDR				■																								
Arthropod Detection Devices - Field Studies									■■■■																			
Advanced Pesticides - Field Studies									■■■■																			
Spatial Repellents - Field Studies													■■■■															
Arthropod Collection - Field Studies									■■■■																			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 808: <i>DoD Drug & Vacc Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Topical Antileishmanial Cream CDR	4	2012	4	2012
Arthropod Detection Devices - Field Studies	4	2013	4	2015
Advanced Pesticides - Field Studies	4	2013	3	2015
Spatial Repellents - Field Studies	2	2014	2	2016
Arthropod Collection - Field Studies	4	2013	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 811: <i>Mil HIV Vac&Drug 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
811: <i>Mil HIV Vac&Drug Dev</i>	-	2.273	2.294	0.550	-	0.550	1.096	0.987	0.859	1.023	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 militarily relevant human immunodeficiency virus (HIV) medical countermeasures. It provides funding for the planning and conducting of human clinical trials in a group of healthy volunteers to assess the drug/vaccine for safety, tolerability, how the drug/vaccine is distributed, metabolized, and excreted from the body, and to investigate the appropriate dose for therapeutic use. Development efforts are focused on militarily unique needs effecting manning, mobilization, and deployment.

The major contractor is Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, MD. Research efforts are coordinated with the National Institutes of Health.

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

	FY 2012	FY 2013	FY 2014
Title: Military HIV Vaccine & Drug Development	2.273	2.294	0.550
Articles:	0	0	
Description: This project funds advanced development research to develop candidate HIV vaccines, assess their safety and effectiveness in evaluations with human subjects, and protect military personnel from risks associated with HIV infection.			
FY 2012 Accomplishments: Performed three inter-related studies to enhance our understanding of precisely how the vaccine strategy used in the 2009 safety/efficacy trial caused vaccine recipients to be protected from infection, including intense laboratory studies using samples from the trial, and commencement of two small clinical vaccine trials to generate data and samples to define what vaccine responses to try to generate for next increment studies.			
FY 2013 Plans: Complete three inter-related previous clinical trials aimed at refining our understanding of immune responses elicited by the increment 1 HIV vaccine strategy. Analyze laboratory interrogation of samples from trial participants.			
FY 2014 Plans: Will continue the three inter-related clinical trials (RV305, RV306, RV328) aimed at refining our understanding of immune responses elicited by the increment 1 HIV regional vaccine strategy. Will analyze laboratory interrogation of samples from trial			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>		PROJECT 811: <i>Mil HIV Vac&Drug Dev</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2012	FY 2013
<p>participants. Will refine vaccine administration schedule as well as clinical trial design based on data from clinical trials. Safety and effectiveness clinical trail RV305, will examine the immune responses to secondary boost of increment 1 HIV regional vaccine. Safety and effectiveness clinical trail RV306, will examine the intensive immune monitoring of Prime-Boost Vaccine. Safety and effectiveness clinical trail RV328, will conduct intensive immune monitoring of AIDSVAXB/E alone Regional Vaccine with a large well controlled trial to test immunity of improved vaccine Boost Prime/Boost Regional study to confirm safety and effectiveness in a diverse population. Will adjust plan for Regional well-controlled clinical trial large enough to demonstrate vaccine effectiveness to initiate in FY14.</p>				
Accomplishments/Planned Programs Subtotals			2.273	2.294
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
Test and evaluate commercially developed drug/vaccine candidates in government-managed trials.				
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 811: <i>Mil HIV Vac&Drug 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			
Medical Product Development Management Services Cost	TBD	Not Applicable:Not Applicable	1.135	0.362		0.456		0.165		-		0.165	Continuing	Continuing	Continuing
Subtotal			1.135	0.362		0.456		0.165		0.000		0.165			

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			
Medical Product Development Cost	TBD	Not applicable:Not applicable	2.258	0.360		0.574		0.115		-		0.115	Continuing	Continuing	Continuing
Subtotal			2.258	0.360		0.574		0.115		0.000		0.115			

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			
Medical Product Development Support Cost	TBD	TBD:TBD	0.493	0.444		0.534		0.101		-		0.101	0.000	1.572	0.000
Subtotal			0.493	0.444		0.534		0.101		0.000		0.101	0.000	1.572	0.000

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 811: <i>Mil HIV Vac&Drug 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 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			
Medical Product Development T&E Cost	TBD	Not applicable:Not Applicable	14.012	1.107		0.730		0.169		-		0.169	0.000	16.018	0.000
Subtotal			14.012	1.107		0.730		0.169		0.000		0.169	0.000	16.018	0.000

Remarks
Not Applicable

	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	17.898	2.273	2.294	0.550	0.000	0.550			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 811: <i>Mil HIV Vac&Drug 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

RV305 Immune Responses to Secondary Boost of Regional Vaccine	[REDACTED]																											
Regional Vaccine Large Well Controlled Large Trial to Test Immunity of Vaccine	[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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 811: <i>Mil HIV Vac&Drug Dev</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RV305 Immune Responses to Secondary Boost of Regional Vaccine	1	2013	2	2014
Regional Vaccine Large Well Controlled Large Trial to Test Immunity of Vaccine	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 836: <i>Field Medical Systems Advanced 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
836: <i>Field Medical Systems Advanced Development</i>	-	19.003	11.638	7.599	-	7.599	15.591	12.447	10.551	10.700	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

Note
Not applicable for this PE.

A. Mission Description and Budget Item Justification

This project funds the demonstration and validation of medical products for enhanced combat casualty care and follow-on care, including rehabilitation. This project funds human clinical trials to test the safety and effectiveness of biologics (products derived from living organisms) and devices necessary to meet medical requirements. When available, commercial-off-the-shelf (COTS) medical products are also tested and evaluated for transition to engineering and manufacturing development. Consideration is also given to reducing the medical logistics footprint through smaller weight, volume, and equipment independence from supporting materials. All clinical trials are conducted in accordance with U.S. Food and Drug Administration (FDA) regulations.

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

	FY 2012	FY 2013	FY 2014
Title: Field Medical Systems Advanced Development - PM Medical Devices	7.658	6.480	7.523
Articles:	0	0	
Description: Advanced Concept Development funding is provided for the following development of medical devices in support of enhanced combat casualty care.			
FY 2012 Accomplishments: Non-invasive Multi-Analyte Monitor: submitted RFP for the use of Infra Red Spectrometry to assess analyte concentration in blood. Hydration Meter: conducted validation testing. Plasma Knife: transitioned product to Project 832. Eye Tracking System for assessing concussions is a traumatic brain injury diagnostic tool that began clinical trial moved to FDA submission. Fibrinogen Bandages: used an antimicrobial irrigation solution to protect blast injury wound sites from bacterial infection. Conducted final review of Good Manufacturing Practice (GMP) for movement forward to FDA submission. Cardiopulmonary Enhancement: conducted multiple collaborative clinical protocols to review arrest and life threatening trauma devices for enhanced treatment.			
FY 2013 Plans: Total Intravenous Anesthesia (TIVA): This product transitioned to Tech Watch in FY 2012 and is not scheduled for further development in FY 2013. Auto Critical Care System (ACCLS): program cancelled as it is no longer a viable product. Urinary			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>		PROJECT 836: <i>Field Medical Systems Advanced Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Facilitation Device: no further R&D funding required as this is now a commercial product. PEAK Plasmablade: no further R&D funding required as this is now a commercial product. Hydrosurgery System: no further R&D funding required as this is now a commercial product. Non-invasive Multi-Analyte Monitor: submission cancelled because the Small Business innovation Research (SBIR) Product failed to meet future need/requirement. Eye Tracking System for Assessing Concussions (system is a traumatic brain injury diagnostic tool): IPT for Smooth Pursuit Eye Tracking has re-baselined plan in January 2012 for next steps to reach MSB in FY 2013-FY 2014. Fibrinogen Bandages: Phase I clinical trial to begin in FY 2013. No further funding is planned after current contract. Product is a biologic and is transitioning back to S&T. Cardiopulmonary Enhancement: currently there no device requirement identified. Bandits Banyan Biomarkers (now called TBI Diagnostic Assay System _ Increment II and Increment III Handheld): enrollment for clinical trials continued and identify a handheld platform for independent testing in June 2012. Milestone B review scheduled</p> <p>FY 2014 Plans: Eye Tracking System for Assessing Concussions (system is a traumatic brain injury diagnostic tool): will be re-baselined, as a Request for Information (RFI) was submitted in FY12 to reevaluate the most current devices and no Research Development Test Evaluation (RDTE) funds will be needed in FY14. TBI Diagnostic Assay System Increment II Point of Care Device will enter pivotal clinical trial for safety and effectiveness and transition to engineering and manufacturing funding in project 832. Increment III of the TBI Diagnostic Assay System will be delayed and will not reach milestone B (proof of concept) in FY14 based on the maturity of the technology. Impedance Threshold Device for the Treatment of TBI: Current device has a 510(k) (Pre-market Notification) clearance for multiple indications. The submission of a new 510(k) is planned to cover the expanded indications for the currently fielded device. Hydration Status Monitor (HSM) will transition from project MM3 6.3 funding to prepare for milestone B (proof of concept) and down-select. The HSM product will accurately detect the hydration status of Soldiers.</p>				
<p>Title: Field Medical Systems Advanced Development - PM Pharmaceuticals</p> <p>Description: Funding is provided for advanced concept development of biologic medical products managed by PM Pharmaceuticals.</p> <p>FY 2012 Accomplishments: Cryopreserved Platelets formerly Platelet Derived Hemostatic Agent (use of cryopreserved platelets for control of severe bleeding): Conducted clinical safety evaluations and good manufacturing practices preliminary validation studies of the product. The Freeze-Dried Plasma Program (hemorrhage treatment candidate): Conducted preliminary clinical evaluations and good manufacturing practices preliminary validation studies.</p> <p>FY 2013 Plans:</p>		7.127	2.486	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 836: <i>Field Medical Systems Advanced Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Blood Pathogen Reduction/Inactivation transitioned to advanced development in FY 2012, transitioning from Army to be funded with Defense Health Program RDT&E funding; transitioned to Freeze-dried Plasma program to maintain current schedule and avoid delays. Conduct Milestone B decision reviews for both Cryopreserved Platelets and Freeze-Dried Plasma Programs (new high priority from DoD leadership) and transition to Project 832. Accelerated fielding of a FDA-approved Freeze-Dried Plasma was validated in the June 2011 Army Surgeon General's Report by the Blast Injury Task Force. Cryopreserved Platelets: start Phase 2 safety/effectiveness clinical trial in cancer patients with platelet deficiency. Freeze-Dried Plasma program: complete Phase 2 clinical trial of safety and effectiveness through a Cooperative Agreement with industry partner.</p> <p>Title: Field Medical systems Advanced Development - PM Integrated Clinical Systems (ICS)</p> <p>Articles:</p> <p>Description: Funding is provided for the following effort for medical products managed by PM ICS.</p> <p>FY 2012 Accomplishments: Conducted final testing of Phase IV of the Remote Diagnostic Access (RDA). Developed a universal security compliant access portal to serve as a standardized compliance wrapper for all vendors, medical technology, and even IT management products that may traverse between the .com and .mil networks. The Milestone Decision Authority (MDA) was scheduled to review the RDA project in 2011 for continuation of development or termination due to commercial availability.</p>		0.888 0	0.000	0.000
<p>Title: Field Medical Systems Advanced Development - PM Medical Support Systems</p> <p>Articles:</p> <p>Description: Funding is provided for the following effort in the development of products that support the medical mission in combat casualty care and health care operations.</p> <p>FY 2012 Accomplishments: Prepared and completed testing of the Treatment Table and Blood Refrigerator prototypes for PM HBCT. Shock and Vibration Litter Isolation project terminated by MDA. Tested new cold chain technologies for MES set inclusion. Prototype evaluation of Quad fold litter, litter straps, and hands-free litter system: Tested new ISO shelter panel and transitioned back into ISO shelter specification for future shelter buys. Tested Trauma Tiered Medical Bag and transitioned to PEO soldier. Continued to finalize soft-walled shelter development for Force Provider modules for use in Combat Support Hospitals. Developed and transitioned prototype Water and Waste Water Management system to Project 832 for further development.</p> <p>FY 2013 Plans: Transition treatment table and blood refrigerator for PM HBCT to Project 832 and continue development. Transition advanced cold chain technologies, trauma tiered medical bag, hoist aeromedical evacuation litter, and quad fold litter to Project 832 and continue development. Transition ISO panel development and Force Provider soft walled module components to 832 to finalize</p>		3.330 0	2.672 0	0.076

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 836: <i>Field Medical Systems Advanced Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>development. Develop prototype for Environmental Sentinel Biomonitor, which transitioned from Science & Technology. Apply funding from Milestone Decision Authority terminated project Shock and Vibration Litter System to a SBIR Phase II product, insecticide impregnated bed net, and acquire data for EPA approval. Collaborate with PEO Combat Support /Combat Support Service Support on development efforts for emerging medical vehicle evacuation variants.</p> <p><i>FY 2014 Plans:</i> Will continue development of the Environmental Sentinel Biomonitor (ESB) and transition to project 832. The ESB will assist preventive medicine personnel certify water capabilities by providing a presumptive screening capability that can rapidly identify toxicity in water. Will continue collaboration with Program Executive Office Combat Support/Combat Support Service (PEO CS/CSS) and Program Executive Office Ground Combat Systems (PEO GCS) on development efforts for emerging medical vehicle evacuation/casualty evacuation (CASEVAC) variants. Medical variants that will be collaborated on with PEO CS/CSS consist of medical shelters, Mine Resistant Ambush Protected (MRAP), Armored Multipurpose Vehicle (AMPV), and Joint Light Tactical Vehicle (JLTV). Will collaborate with PEO GCS on medical variants for the Heavy Brigade Combat Team (HBCT). Will develop prototypes of Vector Tent Traps for testing. The Vector Tent Trap allows researchers to safely conduct vector (insect) surveillance on vectors that are attracted to humans and vector-borne diseases. Will begin the development of the Altitude Readiness Management System (ARMS). ARMS will transition from S&T MM3 funding line. The ARMS product is a handheld sensor and software decision device to plan, monitor, and manage unit altitude illness risk and task performance prediction.</p>			
Accomplishments/Planned Programs Subtotals	19.003	11.638	7.599

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

N/A

Remarks

D. Acquisition Strategy

Develop in-house or industrial prototypes in government-managed programs to meet military and regulatory requirements for production and fielding.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 836: <i>Field Medical Systems Advanced 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			
Medical Product Development Management Services Cost	Various	Not Applicable:Not applicable	37.279	2.330		0.622		0.024		-		0.024	Continuing	Continuing	Continuing
TBI Diagnostic Assay System - Increment II (benchtop/POC/ Bandits)	TBD	Banyan BioMarkers, Inc:Alachua FL	0.000	-		-		0.208		-		0.208	0.000	0.208	0.000
Impedance Threshold Device for the Treatment of Traumatic Brain Injury	TBD	Advance Circulatory Systems, Inc:Roseville, MN	0.000	-		-		0.154		-		0.154	0.000	0.154	0.000
Subtotal			37.279	2.330		0.622		0.386		0.000		0.386			

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			
Product Development	TBD	Banyan BioMarkers, Inc:Alachua FL	27.000	-		5.050		-		-		-	Continuing	Continuing	Continuing
Product Development	TBD	HemCon Medical Technologies:Tigard, Oregon	1.520	8.200		-		-		-		-	Continuing	Continuing	Continuing
Development of Platelet Derived Hemostatic agent	TBD	Fast Track Drugs & Biologics:Frederick, MD	0.000	1.800		-		-		-		-	Continuing	Continuing	Continuing
Medical Product Development	TBD	ALL Product:Various	1.000	0.931		-		-		-		-	Continuing	Continuing	Continuing
Product Development of Freeze-dried plasma	TBD	TBD:TBD	0.000	-		2.400		-		-		-	Continuing	Continuing	Continuing
TBI Diagnostic Assay System - Increment II (benchtop/POC/ Bandits)	TBD	Banyan BioMarkers, Inc:Alachua FL	0.000	-		-		5.670		-		5.670	0.000	5.670	0.000
Impedance Threshold Device for the Treatment of Traumatic Brain Injury	TBD	Advance Circulatory Systems Inc.:Roseville, MN	0.000	-		-		1.250		-		1.250	0.000	1.250	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 836: <i>Field Medical Systems Advanced Development</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			29.520	10.931		7.450		6.920		0.000		6.920			

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			
Medical Product Development Support Cost	Various	Not Applicable:Not applicable	41.747	1.052		1.066		0.200		-		0.200	Continuing	Continuing	Continuing
Subtotal			41.747	1.052		1.066		0.200		0.000		0.200			

Remarks
No product/contract costs greater than \$1M individually.

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			
Medical Product Development T&E Cost	TBD	Not applicable:Not applicable	28.778	4.690		2.500		0.093		-		0.093	Continuing	Continuing	Continuing
Subtotal			28.778	4.690		2.500		0.093		0.000		0.093			

Remarks
No product/contract costs greater than \$1M individually.

	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	137.324	19.003	11.638	7.599	0.000	7.599			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 836: <i>Field Medical Systems Advanced 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
Cryopreserved Platelets (CPP) Critical Design Review MS-B								■																				
Freeze-Dried Plasma (FDP) MS-B								■																				
Environmental Sentinel Biomonitor MS-B							■																					
Bench-top/POC Biomarker assay for determining exposure to Traumatic Brain Injury								■																				
Impedance Threshold Device Device for the Treatment of TBI (PreMarket Note.)												■																

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT 836: <i>Field Medical Systems Advanced Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Cryopreserved Platelets (CPP) Critical Design Review MS-B	4	2013	4	2013
Freeze-Dried Plasma (FDP) MS-B	4	2013	4	2013
Environmental Sentinel Biomonitor MS-B	1	2013	1	2013
Bench-top/POC Biomarker assay for determining exposure to Traumatic Brain Injury	2	2013	2	2013
Impedance Threshold Device Device for the Treatment of TBI (PreMarket Note.)	3	2013	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT VS7: <i>MEDEVAC Mission Equipment Package (MEP) - Adv 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
<i>VS7: MEDEVAC Mission Equipment Package (MEP) - Adv Dev</i>	-	1.563	0.465	0.562	-	0.562	0.457	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

Original models of Army Black Hawk MEDEVAC helicopters continue to play a major role in maintaining high US troop survival rates in Iraq and Afghanistan by evacuating wounded troops in less than one-hour. In 2009 a VCSA-approved force design update increased the number of air frames in the force from 12 to 15 aircraft for 37 MEDEVAC companies to better meet operational needs. In 2010, the AMEDD accepted life-cycle management of the MEDEVAC MEP from PEO Aviation. In order to achieve required operational capability and enhance commonality across the MEDEVAC fleet, the MEDEVAC MEP program upgrades, retrofits, trains, and sustains the 256 MEDEVAC legacy helicopters to achieve the medical capability provided by the HH-60M, which is factory built for the MEDEVAC mission.

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

	FY 2012	FY 2013	FY 2014
<p>Title: MEDEVAC Mission Sensor Forward Looking Infrared (FLIR)</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort in the advanced development of critical components in MEDEVAC MEP.</p> <p>FY 2012 Accomplishments: MEDEVAC Mission Sensor (MMS) FLIR for UH-60 aircraft. One of the requirements for the UH-60A/L MEDEVAC was a sensor system that assisted the pilots in locating patient pick-up points and assisted them in maintaining situational awareness in night and adverse weather conditions. The MMS was currently being qualified for use on the HH-60M aircraft. This system will be installed on UH-60 aircraft using the proven Sponson-Mount FLIR system, which was currently being used in OEF for the MEDEVAC mission. The funds were developed and tested a Medical Mission Sensor FLIR prototype on the UH-60A/L.</p>	<p>0.574</p> <p>0</p>	<p>0.000</p>	<p>0.000</p>
<p>Title: Environmental Control System for MEDEVAC aircraft</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Accomplishments:</p>	<p>0.459</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>		PROJECT VS7: <i>MEDEVAC Mission Equipment Package (MEP) - Adv Dev</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
The HH-60A/L/M had an environmental control system to assist in regulating the cabin temperature. This system helped prevent injury and loss of life to patients due to heat stress or hypothermia during transport. The system provided improved crew comfort in extreme environmental conditions, particularly high temperatures. The system utilized the component-qualified 2-Pallet ECS developed for the HH-60M and developed and tested a prototype installation for the UH-60A/L.				
Title: Telemedicine for MEDEVAC aircraft		0.530	0.465	0.562
		Articles: 0	0	
Description: Effort is focused on requirement to provide enroute patient data to treatment facilities.				
FY 2012 Accomplishments: Telemedicine was an ongoing requirement for US Army MEDEVAC, to allow the patient care-giver at point of injury or during transport to access the knowledge and expertise of a more qualified care-giver at a remote location, and to provide patient data to the receiving facility prior to patient arrival, allowing the facility more time to prepare for intensive care patients. The program developed, installed, and tested a telemedicine system for the UH-60A/L family of aircraft.				
FY 2013 Plans: Design, develop, and test telemedicine systems in order to provide medics with state of the art capability to monitor and communicate patient data to ground crews at forward treatment facility				
FY 2014 Plans: Will continue design, development, and testing of the telemedicine systems in order to provide medics with state of the art capability to monitor and communicate patient data to ground crews at forward treatment facility.				
Accomplishments/Planned Programs Subtotals		1.563	0.465	0.562
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy Develop in-house or industrial prototypes in government-managed programs to meet military MEDEVAC and regulatory requirements for production and fielding.				
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT VS7: <i>MEDEVAC Mission Equipment Package (MEP) - Adv 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			
Medical Product Development Management Services Cost	TBD	APM MEDEVAC:Huntsville, AL	0.000	0.152		0.037		-		-		-	0.000	0.189	0.000
Subtotal			0.000	0.152		0.037		0.000		0.000		0.000	0.000	0.189	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			
Medical Product Development Cost	TBD	APM MEDEVAC PEO Aviation:Huntsville AL	0.000	1.112		0.428		-		-		-	0.000	1.540	0.000
Subtotal			0.000	1.112		0.428		0.000		0.000		0.000	0.000	1.540	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			
Medical Product Development Support Cost	TBD	APM MEDEVAC:Huntsville, AL	0.000	0.100		-		0.562		-		0.562	0.000	0.662	0.000
Subtotal			0.000	0.100		0.000		0.562		0.000		0.562	0.000	0.662	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			
Medical Product Development T&E Cost	MIPR	APM MEDEVAC PEO Aviation:Huntsville, AL	0.000	0.199		-		-		-		-	0.000	0.199	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT VS7: <i>MEDEVAC Mission Equipment Package (MEP) - Adv Dev</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				
Telemedicine MS B																																
Telemedicine 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603807A: <i>Medical Systems - Adv Dev</i>	PROJECT VS7: <i>MEDEVAC Mission Equipment Package (MEP) - Adv Dev</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Telemedicine MS B	3	2015	3	2015
Telemedicine 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced 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	-	23.516	32.050	14.159	-	14.159	23.133	17.176	16.712	66.660	Continuing	Continuing
S49: <i>Ground Soldier System (GSS)</i>	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	44.500	Continuing	Continuing
S51: <i>Aircrew Integrated Sys Ad</i>	-	0.150	0.141	0.164	-	0.164	0.164	0.157	0.160	2.157	Continuing	Continuing
S52: <i>Soldier Support Equipment - Ad</i>	-	5.911	5.046	0.410	-	0.410	1.718	1.146	0.000	0.000	Continuing	Continuing
S53: <i>Clothing And Equipment</i>	-	11.307	7.189	5.637	-	5.637	7.836	5.548	5.096	7.153	Continuing	Continuing
S54: <i>Small Arms Improvement</i>	-	4.362	4.690	4.260	-	4.260	6.172	5.569	5.186	5.700	Continuing	Continuing
VS4: <i>Soldier Protective Equipment</i>	-	1.786	14.984	3.688	-	3.688	7.243	4.756	6.270	7.150	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 Increase of \$6.087 million to Project S53 for T11/C17 Drop Test and Program Decrease of \$0.601 million to higher priority Army efforts.

Fiscal Year 2014: Program Decreases of \$2.304 million to Project S52 Soldier Support Equipment AD, \$1.585 million to Project S53, \$1.172 million to Project S54 and \$7.895 million to Project VS4 Soldier Protective Equipment were realigned to higher priority Army efforts.

A. Mission Description and Budget Item Justification

This Program Element (PE) for Advanced Component Development and Prototypes manages the Soldier as a system in order to increase combat effectiveness, test and deliver tangible products that save Soldier's lives, and improve Soldier's quality of life. It evaluates, develops, and tests emerging technologies and critical Soldier support systems to reduce technology risk.

Project S49 funding (Ground Soldier System) The Nett Warrior (NW) program leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations.

Project S51 funding (Aircrew Integrated Systems) supports component development and prototyping of critical Soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>
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Project S52 funding (Soldier Support Equipment) supports system development and testing for the Gunshot Detection (GDS). Active Protection System (APS)/Hostile Fire Detection (HFD) program intends to build off the Gunshot Detection System capabilities, and include additional vehicle threats and countermeasures.

Project S53 funding (Clothing and Equipment) supports development of state-of-the-art technology to improve tactical and non-tactical clothing and individual equipment to enhance the lethality, survivability, and mobility of the individual Soldier.

Project S54 funding (Small Arms Improvement) provides funds to develop, demonstrate and evaluate emerging technology for integration of systems, subcomponents and prototypes designed to enhance lethality, target acquisition, fire control, training effectiveness and reliability for current and future small arms weapon systems and ammunition.

Project VS4 funding (Soldier Protective Equipment) supports efforts to evaluate integrated technologies and representative or prototype systems that help expedite Individual Soldier Ballistic Protection technology transition from the laboratory to operational use.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	18.030	32.050	27.115	-	27.115
Current President's Budget	23.516	32.050	14.159	-	14.159
Total Adjustments	5.486	0.000	-12.956	-	-12.956
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	5.486	-	-12.956	-	-12.956

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S49: <i>Ground Soldier System (GSS)</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
S49: <i>Ground Soldier System (GSS)</i>	-	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	44.500	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 Nett Warrior (NW) Program (named in honor of Medal of Honor recipient Colonel Robert C. Nett), also known as the Ground Soldier System (GSS) Program, leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides operators electronic, real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW system also provides the same integrated mission command capability to tactical vehicle mounted leaders so that when they dismount their vehicles, they still have access to the common operating picture (COP) and have full situational awareness. This capability provides unparalleled situational awareness and understanding to the dismounted leader allowing for faster, more accurate decisions and reduced fratricide in the tactical fight.

Beginning in FY 18, this project funds the development and prototyping of the next generation of Nett Warrior, leveraging the extensive technology improvements that will occur over the next five years.

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

N/A

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</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>
• OPA 3: <i>OPA 3 Ground Soldier System</i>	63.500	103.317	81.680		81.680	100.724	103.416	50.246	50.298	Continuing	Continuing
• RDT&E, PE 0604827A S75: <i>RDT&E, PE 0604827A S75 - Ground Soldier Ensemble</i>	37.604	46.797	41.063		41.063	18.923	19.043	18.237	0.596	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S49: <i>Ground Soldier System (GSS)</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 Nett Warrior (NW) program provides unparalleled situational awareness and mission command to dismounted combat leaders through an integrated computer, display, power source and radio. The NW program executed a MS A in FY09 and began three competing TD phase contracts leading to development and operational testing FY10-11. The NW MS C was approved 3 April 2012 followed by a low rate Capability Set (CS) 14 production award. Conduct Developmental Test and Evaluation planned for 4QFY12-1QFY13, followed by 1QFY13 Initial Operational Test & Evaluation (IOT&E) as well as hardware, software, integration and program management. The Developmental and Operational tests are validation of the system utility, supportability, and austere-environment power production and regeneration strategy-leading to a production decision in the 2QFY13 to procure the CS14 quantity of NW systems and support. NW also continues to reduce size, weight and power through a semi-annual integration and evaluation and test of the latest commercial smart device technologies which evolve continuously. This is the next increment of Nett Warrior that will leverage technology available in the FY 18 time frame.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S49: <i>Ground Soldier System (GSS)</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 Soldier Warrior software integration of NW program	MIPR	Various:Various	16.707	-		-		-		-		-	Continuing	Continuing	Continuing
PM Soldier Warrior oversight of NW program	Various	Various:Various	24.986	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			41.693	0.000		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			
Develop, Integrate and Prototype NW Increment I	C/CPFF	Raytheon Company:McKinney, TX 75071-2813	13.900	-		-		-		-		-	0.000	13.900	0.000
Develop, Integrate and Prototype NW Increment I	C/CPFF	General Dynamics C4 Systems, Inc.:Scottsdale, AZ 85257-3812	12.659	-		-		-		-		-	0.000	12.659	0.000
Develop, Integrate and Prototype NW Increment I	C/CPFF	Rockwell Collins, Inc.:Cedar Rapids, IA 52498-0505	13.354	-		-		-		-		-	0.000	13.354	0.000
Subtotal			39.913	0.000		0.000		0.000		0.000		0.000	0.000	39.913	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			
PM Nett Warrior support	MIPR	CERDEC, CECOM, TACOM, ARL, NSRDEC, etc.:Various	2.522	-		-		-		-		-	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S51: <i>Aircrew Integrated Sys Ad</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
S51: <i>Aircrew Integrated Sys Ad</i>	-	0.150	0.141	0.164	-	0.164	0.164	0.157	0.160	2.157	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 Advanced Component Development and Prototyping of select Air Soldier System (Air SS) components. The Air SS provides improved safety, survivability, and human performance that amplifies the Warfighter's effectiveness and facilitates full-spectrum dominance of Army aircraft. 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 member life support equipment. The Air SS follows an evolutionary acquisition approach with two sub-increments that integrate mature technologies to build to the full capability. Each sub-increment progressively reduces overall weight and bulk of aircrew equipment, increases situational awareness, and enhances aircrew mobility. This funding provides advanced development for the Air SS in technology areas supporting improved environmental cooling, integrated power, wireless personal area networks, lightweight protective clothing, and miniaturized communication devices.

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

	FY 2012	FY 2013	FY 2014
Title: Aircrew Integrated Systems (ACIS) Advanced Development	0.150	0.141	0.164
Articles:	0	0	
Description: Advanced Component Development and Prototyping (ACDP) of critical aircrew support systems technology improvements and Advanced Development (AD) and risk reduction efforts required for transition into the Engineering Manufacturing Development (EMD) phase.			
FY 2012 Accomplishments: Funded laboratories to monitor and influence Air SS technologies to include lightweight environmental cooling, integrated wearable power, and lightweight protective clothing technologies into the EMD phase of Air SS.			
FY 2013 Plans: Fund laboratories to monitor and influence Air SS technologies to include wireless personal area network technologies and lightweight protective clothing materials into the EMD phase.			
FY 2014 Plans: Will fund laboratories to monitor and influence Air SS technologies to include advanced wide field of view/high resolution helmet mounted display technologies and miniaturized communication devices into Air SS EMD phase.			
Accomplishments/Planned Programs Subtotals	0.150	0.141	0.164

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S51: <i>Aircrew Integrated Sys Ad</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 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>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• ACIS Engineering Development: <i>RDTE, A PE 0604601A PROJ</i> <i>S61-SDD</i>	10.705	17.175	14.057		14.057	20.073	11.334	9.883	15.948	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 Air SS follows an evolutionary acquisition approach with two sub-increments that build to the full capability. Through the two sub-increments, the Air Soldier System program focuses on reducing weight and bulk while integrating capabilities including optimized survival equipment; an integrated Soldier-worn electronics suite; integrated wireless aircraft and survival communications capability; a digital day/night heads-up display for all Army aircraft platforms; optimized laser eye protection, and reduced clothing layers with no loss of thermal protection. These funds resource various government agencies to transition critical technologies/products from the Advanced Component Development to the Engineering Manufacturing Development phase in support of the identified Air Soldier System sub-increments.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S51: <i>Aircrew Integrated Sys Ad</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	RO	Various Government:Huntsville, AL and Natick, MA	2.309	0.150		0.141		0.164		-		0.164	Continuing	Continuing	Continuing
Subtotal			2.309	0.150		0.141		0.164		0.000		0.164			

Remarks
 Note: FY13 - \$141,000 was requested for PM Administration.

	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	2.309	0.150	0.141	0.164	0.000	0.164			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>Soldier Support Equipment - Ad</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
S52: <i>Soldier Support Equipment - Ad</i>	-	5.911	5.046	0.410	-	0.410	1.718	1.146	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 Gunshot Detection System (GDS) was identified by the Vice Chief of Staff of the Army for insertion into the Capabilities Development for Rapid Transition (CDRT) process. A Capabilities Production Document (CPD) was approved on 13 Feb 2009. The Active Protection System (APS)/Hostile Fire Detection (HFD) program intends to build off the Gunshot Detection System capabilities, and include additional vehicle threats and countermeasures. The Capability Development Document (CDD) is currently in development at Mission Center of Excellence (MCOE).

The FY 2014 Base funding in the amount of \$0.410 million will be in support of the Active Protection System (APS)/Hostile Fire Detection (HFD) Capability Development Document (CDD) currently in development at Mission Center of Excellence (MCOE).

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

	FY 2012	FY 2013	FY 2014
<p>Title: System Characterization Study</p> <p align="right">Articles:</p> <p>Description: Study to be conducted to ascertain system performance, Technology Readiness Level (TRL) and Analysis of Alternatives (AoA) and associated Market Research of existing technologies.</p> <p>FY 2012 Accomplishments: The FY2012 funds will be used for a System Characterization study to be conducted by the Armament Research Development & Engineering Center (ARDEC) Acoustic Center of Excellence (ACoE). This study will ascertain system performance, Technology Readiness Level (TRL) and market availability of sensors and their performance.</p>	2.886 0	0.000	0.000
<p>Title: Engineering Documentation</p> <p align="right">Articles:</p> <p>Description: Development of required engineering documentation for this Program of Record (POR) and associated Program Management Office (PMO) support.</p> <p>FY 2012 Accomplishments:</p>	1.749 0	1.521 0	0.410

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>Soldier Support Equipment - Ad</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>The FY2012 funds will be used for the development of a Performance Specification, Interface Control Document (ICD) and Performance Work Statement (PWS).</p> <p>FY 2013 Plans: The FY2013 funds will provide for Performance Specification and Interface Control Documentation..</p> <p>FY 2014 Plans: The FY2014 funds will provide for performance specification and analysis in support of the Capability Development Document (CDD) for Active Protection System (APS)/Hostile Fire Detection (HFD) requirements.</p>			
<p>Title: Engineering Services and Test Support</p> <p align="right">Articles:</p> <p>Description: Perform engineering analysis and provide test support to Technology Readiness Assessment (TRA).</p> <p>FY 2012 Accomplishments: The FY2012 funds will be used to support the System Characterization Study. Additionally, the funds will support Subject Matter Experts (SME) in IR and Acoustic technologies to provide analysis and support to the System Characterization.</p> <p>FY 2013 Plans: The FY2013 funds will be used to test Electro-Optical systems and Engineering Services.</p>	1.276 0	1.439 0	0.000
<p>Title: Source Selection Activities</p> <p align="right">Articles:</p> <p>Description: Prepatation of acquisition and regulatory documentation.</p> <p>FY 2013 Plans: The FY2013 funds will be used for Logistics and Program Management planning and documentation and to develop the acquisition strategy</p>	0.000	2.086 0	0.000
Accomplishments/Planned Programs Subtotals	5.911	5.046	0.410

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>
• SSN: BA3301 Gunshot Detection Syste: SSN: BA3301 Gunshot	11.000	2.332								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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>Soldier Support Equipment - Ad</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>
<i>Detection System (GDS) Program of Record</i>											

Remarks

D. Acquisition Strategy

The FY 2014 funds will be used to support the Active Protection System (APS)/Hostile Fire Detection (HFD) Capability Development Document (CDD) currently in development at MCOE. The APS/HFD program intends to build off the Gunshot Detection System capabilities, and include additional vehicle threats and countermeasures. MCOE expects to obtain APS/HFD CDD approval in late FY2014.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>Soldier Support Equipment - Ad</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 / Milestone Preparation	Various	PM FLIR:Ft. Belvoir, VA	0.000	0.947	Feb 2012	0.449		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	0.947		0.449		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			
System Characterization Study	C/TBD	Night Vistion Electronics Sensors Directorate (NVESD):FT Belvoir VA	0.000	1.939	Apr 2012	-		-		-		-	Continuing	Continuing	Continuing
Engineering Documentation	Various	PM Ground Sensors:Ft. Belvoir, VA	0.000	-		-		0.410	Dec 2013	-		0.410	Continuing	Continuing	Continuing
Subtotal			0.000	1.939		0.000		0.410		0.000		0.410			

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 Documentation	C/TBD	TBD:TBD	0.000	1.749	Mar 2012	1.521		-		-		-	Continuing	Continuing	Continuing
Engineering Services and Test Support	C/TBD	TBD:TBD	0.000	1.276	Apr 2012	0.990		-		-		-	0.000	2.266	0.000
Source Selection Support	C/TBD	Program Management:Ft Belvoir	0.000	-		2.086		-		-		-	0.000	2.086	0.000
Subtotal			0.000	3.025		4.597		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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>			PROJECT S52: <i>Soldier Support Equipment - Ad</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	5.911	5.046	0.410	0.000	0.410				

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>Soldier Support Equipment - Ad</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
System Characterization Study	██████████																											
Engineering Documentation					████████████████████																							
Active Protection System (APS)/Hostile Fire Detection (HFD) Requirements Develop									██																			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S52: <i>Soldier Support Equipment - Ad</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Characterization Study	2	2012	2	2013
Engineering Documentation	2	2013	4	2014
Active Protection System (APS)/Hostile Fire Detection (HFD) Requirements Develop	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S53: <i>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
S53: <i>Clothing And Equipment</i>	-	11.307	7.189	5.637	-	5.637	7.836	5.548	5.096	7.153	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 efforts to evaluate and integrate technologies and representative or prototype systems that help expedite Soldier uniform and clothing technology transition from the laboratory to operational use. Efforts focus on proving out commonality across as broad a spectrum of users as possible to provide a modular, integrated uniform/clothing system from skin out and head-to-toe. It funds efforts to investigate new technologies and domestically available fabrics with Flame Resistance, moisture wicking and insect protection technologies. New technologies are investigated to monitor health and improve Soldier survivability, reduce weight, and improve affordability, mobility and comfort in combat and training/administrative environments.

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

	FY 2012	FY 2013	FY 2014
Title: Soldier Uniforms and Clothing	3.000	4.000	3.122
Articles:	0	0	
Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment.			
FY 2012 Accomplishments: Continued maturing new technology to reduce Soldier load and weight. Pursued and integrated Science & Technology efforts on fine gauge domestic wool to provide a natural Flame Resistant (FR) and no melt no drip fabric that provides warmth when wet. Improved infrared performance and colorfastness of clothing to improve signature management. Tested Permethrin treatment for use in Army Combat Uniform (ACU), ACU-Alternative (ACU-A), Improved Combat Vehicle Crewman Coveralls (iCVC), and Army Combat Pant (ACP).			
FY 2013 Plans: Will continue to mature new technology to reduce Soldier load and weight. Will pursue improvement in concealment through integration of new fabric technologies to manage infrared signature. Will continue to test improvements in permethrin treatment and Flame Resistance (FR) capabilities for use in combat uniforms. Conduct initial evaluation of MFF parachutist Extreme Environmental Protective Kit (gloves and face protection).			
FY 2014 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>		PROJECT S53: <i>Clothing And Equipment</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Will continue to fund maturing of new technology to reduce Soldier load and weight. Will integrate new technologies and procure prototypes for environmental protection for Military Free Fall (MFF) parachutists caused by higher altitudes and longer duration High Altitude, High Opening (HAHO) MFF operations. Will procure prototypes, conduct technical testing and cold weather chamber testing. Will continue to test improvements in permethrin treatment and Flame Resistance (FR) capabilities for use in combat uniforms to adapt to improvements in textile technology.</p> <p>Environmental Clothing and Equipment. Will conduct market survey, conduct technical testing and procure prototypes of flame resistant layers of Extended Cold Weather Protective System (ECWPS) to combine Extended Cold Weather Clothing System (ECWCS) and Flame Resistant Environmental Ensemble (FREE). Will conduct Small Business Innovative Research (SBIR) user evaluation of wool boot socks. Will conduct market survey, procure prototypes and conduct technical testing on Extreme Cold Weather Gloves.</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: Load Carriage/NBC/Hydration. Improved knee pads for increased durability, fit, comfort, and decreased weight. Improved concealment through the integration of new technologies to manage infrared signature of fabrics, including nylon used in individual equipment. Initiated testing of the Individual Water Treatment Device (IWTD) Increment I (Filtration).</p> <p>Environmental Clothing and Equipment. Evaluated new technologies to improve thermal efficiency while reducing bulk of the Modular Sleep System.</p> <p>FY 2013 Plans: Environmental Clothing and Equipment. Will evaluate new technologies to improve thermal efficiency while reducing bulk of the Modular Sleep System.</p> <p>Personnel Airdrop. Will award contract for prototype assets for the Parachutist Navigation System (PARANAVSYS)</p> <p>FY 2014 Plans: Load Carriage/NBC/Hydration. Will initiate prototype evaluation of next generation Modular Lightweight Load-Carrying Equipment (MOLLE) systems to reduce overall weight on Soldiers and be compatible with the Soldier Protection System.</p>		8.307 0	3.189 0	2.515

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S53: <i>Clothing And Equipment</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Personnel Airdrop. Will procure prototypes and conduct technical testing on Military Free Fall (MFF) Electronic Automatic Activation Device (EAAD). Will procure prototype items and conduct technical tests on T-11 Canopy Release Assembly (CRA) to enable static line parachutist to quickly disengage from his parachute upon landing. Will procure prototype items, conduct technical tests and procure prototypes of a deconfliction and tracking tool for Military Free Fall (MFF) operations to ensure MFF parachutist can land in proximity to a simultaneous cargo drop. Will procure prototype test assets and conduct test on Military Free Fall (MFF) Increased Pressure Oxygen bottles to support increased durations and altitudes of MFF operations. Will procure prototypes and conduct technical test on Military Free Fall (MFF) High Fidelity Height Sensors and to assess reduction in T-11 canopy size.			
Accomplishments/Planned Programs Subtotals	11.307	7.189	5.637

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
• 0604601A S60: <i>RDTE, 0604601A.S60, Clothing and Equipment</i>	6.316	5.537	5.450		5.450	4.563	3.683	6.065	10.965	Continuing	Continuing
• 121017 CFF OMA: <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
• MA7801 OPA: <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

Programs pursue normal transition through Engineering and Manufacturing Development (EMD) to production. 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S53: <i>Clothing And Equipment</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 Support	TBD	PM SPIE:Ft. Belvoir, VA	11.134	1.150		1.000		1.000		-		1.000	Continuing	Continuing	Continuing
Subtotal			11.134	1.150		1.000		1.000		0.000		1.000			

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			
Engineering Support	MIPR	NSRDEC:Natick, MA	11.353	0.925		1.034		1.048		-		1.048	Continuing	Continuing	Continuing
Development Contracts	C/TBD	Various:Various	19.917	2.000		3.155		3.167		-		3.167	Continuing	Continuing	Continuing
Subtotal			31.270	2.925		4.189		4.215		0.000		4.215			

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	MIPR	Various:Various	6.177	-		0.500		0.400		-		0.400	Continuing	Continuing	Continuing
Subtotal			6.177	0.000		0.500		0.400		0.000		0.400			

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			
Testing Costs	TBD	various:Various	11.668	7.232		1.500		0.022		-		0.022	Continuing	Continuing	Continuing
Subtotal			11.668	7.232		1.500		0.022		0.000		0.022			

			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			60.249	11.307	7.189	5.637	0.000	5.637			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S53: <i>Clothing And 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				
T-11 Canopy Release Assembly Transition to 0604601A S60																																
T-11 Canopy size evaluation																																
High Fidelity Height Sensor - Purchase Prototypes & Technical Testing																																
High Fidelity Height Sensor Transition to 0604601A S60																																
MFF Increased Oxygen Pressure Bottles DV Testing																																
MFF Increased Oxygen Pressure Bottles Transition to 0604601A S60																																
MFF Signature Reduction Evaluation																																

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S53: <i>Clothing And Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Test & Evaluate MFF Environmental Clothing	1	2014	2	2016
Transition MFF Environmental Clothing to 0604601A S60	3	2016	3	2016
Extended Cold Weather Clothing Protective System (ECWSPS) Evaluation	1	2014	4	2014
ECWSPS Transition to 0604601A S60	1	2015	4	2015
Extreme Cold Weather Glove Evaluation	1	2014	4	2015
Extreme Cold Weather Glove Transition to 0604601A S60	1	2016	1	2016
Vapor Barrier Boot Replacement Testing	1	2016	4	2016
Vapor Barrier Boot Transition to 0604601A S60	1	2017	1	2017
Improve Signature Mgmt (IR) Evaluation in Clothing & Equipment	2	2012	4	2014
IWTD - Incr 1 (filtration) Transition to 0604601A S60	1	2013	1	2013
Modular Sleep System thermal efficiency testing	2	2012	2	2013
IWTD - Incr II Desalinization Testing	1	2018	4	2018
Modular Lightweight Load Carrying Equip update	1	2017	4	2018
Parachutist Navigation System (PARANAVSYS) Evaluation	1	2013	4	2013
PARANAVSYS Transition to 0604601A S60	1	2014	1	2014
Military Free Fall (MFF) Enhanced Electronic Auto Activation Device (EAAD) Eval	1	2014	4	2015
T-11 Canopy Release Assembly- Purchase Prototypes & Technical Testing	1	2014	4	2015
T-11 Canopy Release Assembly Transition to 0604601A S60	1	2016	1	2016
T-11 Canopy size evaluation	1	2014	4	2014
High Fidelity Height Sensor - Purchase Prototypes & Technical Testing	1	2014	4	2016
High Fidelity Height Sensor Transition to 0604601A S60	1	2017	1	2017
MFF Increased Oxygen Pressure Bottles DV Testing	1	2014	4	2015

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S53: <i>Clothing And Equipment</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
MFF Increased Oxygen Pressure Bottles Transition to 0604601A S60	1	2016	1	2016
MFF Signature Reduction Evaluation	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <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
S54: <i>Small Arms Improvement</i>	-	4.362	4.690	4.260	-	4.260	6.172	5.569	5.186	5.700	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

Note

New starts in FY 2014 include Extended Range/Guided 40mm Munition, Precision Projectile Tracking, Advanced Laser Protection for Optics and Advanced Hyperspectral Target Acquisition.

A. Mission Description and Budget Item Justification

The Small Arms Improvement Advanced Component Development and Prototypes (ACD&P) program provides funds to mature, demonstrate, test and evaluate emerging technology from Joint Service Small Arms Program (JSSAP), Project 627, Program Element 0603607A, (Budget Activity 3), Defense Advanced Research Projects Agency (DARPA), Department of Energy National Laboratories, Research Development & Engineering Centers (RDECs) and other domestic and foreign sources for small arms weapons systems and technology. Small arms systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on improvements designed to enhance lethality, target acquisition and tracking, fire control, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include the maturing of technology through testing and evaluation of sub-system or system prototypes which demonstrates light weight materials, wear resistant/protective/anti-reflective coatings, observation/situational awareness improvements and equipment enhancements. Benefits include continuous improvements to small arms weapons, fire control equipment, optics, gun barrels, training devices, suppressors, component mounts, weapon mounts, and weapon/ammunition interface.

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

	FY 2012	FY 2013	FY 2014
Title: New Weapons	0.076	0.350	1.000
Articles:	0	0	
Description: Description: Development of new small arms weapons			
FY 2012 Accomplishments: Supported cost benefit analysis conducted by Joint Service Small Arms Program (JSSAP) to evaluate comparative cost information for the Lightweight Machine Gun versus M249 Squad Automatic Weapon (SAW). Developed a notional schedule to transition advanced technology development of cased telescoped ammunition for lightweight small arms technology (LSAT) from JSSAP, Project 627, Program Element 0603607A, (Budget Activity 3) to Project Manager Soldier Weapons.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>		PROJECT S54: <i>Small Arms Improvement</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Acquisition community to assist the United States Army Training and Doctrine Command (TRADOC) and Maneuver Center of Excellence (MCoE) in the development of a Lightweight Machine Gun requirement. Develop plan and schedule of Engineering Manufacturing Development (EMD) phase of the Lightweight Machine Gun. FY 2014 Plans: Acquisition community to continue to assist the United States Army Training and Doctrine Command (TRADOC) and Maneuver Center of Excellence (MCoE) in the development of Lightweight Machine Gun requirements to include a potential Common Lightweight Automatic Weapon System (CLAWS).				
Title: Small Arms Weapons Enhancements Description: Description: Enhancements and developments of small arms weapons FY 2012 Accomplishments: Tested and demonstrated thermal management materials for gun barrels. Continued to evaluate on-going characterization studies of standard and non-standard weapons. Weapons Reliability Study: Completed M4A1 Carbine baseline reliability study under a variety of tests (endurance, environmental) and initiated a follow-on design of experiments test cycle to determine the root cause of weapon reliability. FY 2013 Plans: Conduct weapons studies for small arms weapons and evaluate improved manufacturing technologies. Conduct characterization studies of standard and non-standard weapons. Conduct barrel studies to improve/enhance barrel life. Weapon Evaluation: Test and evaluate foreign non-standard rifles. Weapons Reliability Study: Transition Weapons Reliability program to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) to perform root cause analysis of weapon stoppages identified in baseline test firing from FY 2012. FY 2014 Plans: Will continue to test, evaluate and analyze on-going and new activities to enhance small arms weapons including suppressor design/fabrication, recoil reduction methods and use of nanostructure materials. Will test and demonstrate system coatings such as protective, water-repellant and lubricious coatings for weapon and optical systems. Based on prior studies will continue weapon studies for small arms lethal and non-lethal weapons and evaluate advanced manufacturing technologies including various additive manufacturing processes such as 3D Printing for plastic composite and metal parts. Will continue to evaluate on-going characterization studies of standard and non-standard weapons. Will continue to conduct barrel studies to improve/enhance barrel life and eliminate chrome-lined weapon parts. Will continue to conduct barrel twist optimization studies to apply to engineering and		2.243 0	1.950 0	1.000

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>		PROJECT S54: <i>Small Arms Improvement</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
manufacturing development of weapon enhancements. Will investigate weapon/electro-optics applicability and design for robotic platforms to assist in military missions from intelligence gathering to threat engagement.				
Title: Ammunition				
Description: Description: Small arms ammunition improvement				
FY 2014 Plans: Will initiate coordination/participation on an ongoing Science & Technology (S&T) effort of guided, extended range small arms projectiles/munitions for observation and target acquisition, and precision munitions with enhanced lethality. Will participate in engineering tests to assess effects on weapon and warfighter. Will evaluate results of munitions' maneuverability and on-target effects. Will initiate coordination/participation in an ongoing S&T effort aimed at using small arms munitions to deploy mini-sensors.				
				0.000
				0.000
				0.350
Title: Combat Optics				
				0.100
				0.210
				0.800
Description: Description: Improvement of small arms combat optics				
FY 2012 Accomplishments: Squad Common Optic (SCO): Studied various commercial off the shelf (COTS) optics for optical properties and human factors interface with Soldiers in the loop. Tests informed the development of future requirement documents. Direct View Optic Resolution Standards: Conducted a multi-phase resolution and recognition test. Completed initial data reduction on phase one. Conducted High Explosive Air Burst Reticule Evaluation.				
FY 2013 Plans: Transition the Squad Common Optics initiative to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) to validate the concept of variable power optics for multiple small arms platforms.				
FY 2014 Plans: Will continue to perform, evaluate and analyze combat optics and upgrade research and development efforts to mature optic technology such as Dynamic Image Gun Sight Optic and precision optics. Will provide engineering support and services to include engineering evaluations, verifications and validation of weapon system performance requirements. Will conduct studies, evaluation, and testing to include the Mounted Machine Gun Optic (MMO) and anti-reflection coatings, water-repellant coatings, laser protection devices/coatings and hyperspectral/multi-spectral imaging to include laser protection for optics.				
Title: Fire Control				
				1.943
				2.180
				1.110

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <i>Small Arms Improvement</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: Description: Small arms fire control</p> <p>FY 2012 Accomplishments: Integrated Fire Control for Small Arms: Completed Phase I and initiated Phase II of the program. Down selected to two (2) contractors for phase II to design, develop and evaluate subassemblies. The subassemblies were integrated into an engineering prototype to demonstrate performance parameters.</p> <p>FY 2013 Plans: Integrated Fire Control for Small Arms: Complete Phase II and initiate Phase III to finalize design, fabricate prototypes and conduct test & evaluation. Initiate transition of the integrated fire control for small arms to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5).</p> <p>FY 2014 Plans: Will complete Phase III and the transition of the integrated fire control for small arms to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5). Will evaluate and analyze advance approaches to acquire targets with the use of hyperspectral imaging and assess the effect on current fire control systems to include advanced hyperspectral target acquisition. Will test and assess enhanced electro-optics for target detection, acquisition, identification, and projectile/munition guidance as required for extended range projectiles and munitions. Will analyze and evaluate precision projectile tracking approaches.</p>	0	0	
Accomplishments/Planned Programs Subtotals	4.362	4.690	4.260

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>
• Small Arms Improvement: <i>RDTE S63, Program Element 0604601A - Infantry Support Weapons</i>	17.759	19.617	18.201		18.201	14.479	14.494	14.608	14.691	Continuing	Continuing
• Joint Service Small Arms Program: <i>RDTE 627, Program Element 0603607A - Joint Service Small Arms Program (JSSAP)</i>	7.473	6.095	5.030		5.030	7.317	5.137	5.873	5.823	Continuing	Continuing
Remarks	In support of Small Arms Initial Capability and Capability Development Requirements, advanced technology of Small Arms Weapons is transitioned from Joint Service Small Arms Program (JSSAP), Project 627, Program Element 0603607A, (Budget Activity 3) to Small Arms Improvement, Project S54, Program Element 0603827A,										

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <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>
(Budget Activity 4). After the technology is demonstrated and/or validated the program transitions to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) for engineering and manufacturing development.											

D. Acquisition Strategy

Primary strategy is to study, develop, demonstrate and evaluate emerging technologies that ultimately lead to enhancing/improving the small arms inventory.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <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	1.415	0.411	Jul 2012	0.425	May 2013	0.430	Mar 2014	-		0.430	Continuing	Continuing	Continuing
Subtotal			1.415	0.411		0.425		0.430		0.000		0.430			

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			
Hardware Development	MIPR	Army Research Development Engineering Centers,;Multiple	6.033	1.302	Mar 2012	1.320	May 2013	1.000	Mar 2014	-		1.000	Continuing	Continuing	Continuing
Subtotal			6.033	1.302		1.320		1.000		0.000		1.000			

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	MIPR	Army Research Development Engineering Centers,;Multiple	7.607	1.473	Feb 2012	1.725	Apr 2013	1.600	Mar 2014	-		1.600	Continuing	Continuing	Continuing
Subtotal			7.607	1.473		1.725		1.600		0.000		1.600			

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	MIPR	Army Test and Evaluation Centers,;Multiple	3.981	1.176	Feb 2012	1.220	Apr 2013	1.230	Mar 2014	-		1.230	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <i>Small Arms Improvement</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
Guided/Extended Range Small Arms Projectiles																												
Advanced Laser Protection for Optics																												
Mounted Machine Gun Optic																												
Advanced Hyperspectral Target Acquisition																												

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT S54: <i>Small Arms Improvement</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Guided/Extended Range Small Arms Projectiles	1	2014	4	2018
Advanced Laser Protection for Optics	1	2014	4	2014
Mounted Machine Gun Optic	1	2014	3	2017
Advanced Hyperspectral Target Acquisition	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>				PROJECT VS4: <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
VS4: <i>Soldier Protective Equipment</i>	-	1.786	14.984	3.688	-	3.688	7.243	4.756	6.270	7.150	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 Integrated Systems Design (ISD) phase of Engineering and Manufacturing Development (EMD) efforts to evaluate and integrate technologies and prototype systems that help expedite Individual Soldier Ballistic Protection technology transition from the laboratory to operational use. It continues incremental improvement of body armor to reduce Soldier load and improve comfort/functionality based on operational feedback. It advances efforts to mature manufacturing readiness levels of advanced high performance fibers and composites for next-generation combat helmets, and supports transition to System Capability and Manufacturing Process Demonstration (SC&MPD) phase of EMD. It continues to increase eyewear ballistics/blast protection, and incorporates advancements in laser eye protection, as well as advancements in variable transition lens technology into ballistic goggles and spectacles.

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

	FY 2012	FY 2013	FY 2014
Title: Soldier Protective Equipment	1.786	14.984	3.688
Articles:	0	0	
Description: Funding line established in FY12. Effort was previously executed in Program Element 0603827 S53. Effort is to increase the Warfighter lethality and mobility by optimizing Soldier protection while effectively managing all life cycle aspects of Personal Protective Equipment (PPE).			
FY 2012 Accomplishments:			
Awarded 13 contracts against Broad Agency Announcement (BAA #W91CRB-10-R-0073) to develop, test, evaluate and characterize component materials and subsystems to identify potential solutions for mission tailorable Personal Protective Equipment (PPE). Initiated Director of Operational Test and Evaluation (DOT&E)-directed effort to develop multi-sized test head forms to improve reliability and repeatability of helmet development and acceptance testing. Continued efforts to achieve a 5-15% weight reduction in Advanced Combat Helmet (ACH) and ballistic inserts (Enhanced Small Arms Protective Insert (ESAPI), X-Threat Small Arms Protective Insert (XSAPI) & X-Threat Side Ballistic Inserts (XSBI). Continued efforts on the ballistic insert Smart Sensor (micro-sensor and power management integration). Integrated emerging data and lessons learned from FY10 & FY11 BAA contract awards to inform the Soldier Protection System (SPS) Capability Development Document (CDD) objective/threshold requirements. Conducted market surveys and Technology Readiness Level (TRL) assessments with Science			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT VS4: <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
<p>&Technology (S&T) community to inform acquisition and contracting strategy to support SPS 2Q FY13 Milestone B Integrated System Design Decision.</p> <p>FY 2013 Plans: Obtain Materiel Development Decision (MDD) and initiate Soldier Protection System (SPS) Integrated System Design (ISD) phase in 1Q FY13. FY13 efforts will focus on subsystem maturation and integration of the SPS Integrated Soldier Sensor System (ISSS) in addition to ballistic and blast characterization testing of SPS Vital Torso, Extremity, Torso and Integrated head, face and eye protective subsystems. Conduct Preliminary Design Review and procure prototypes the first phase of characterization and Human Factors testing through 1Q FY14. Continue to use Broad Agency Announcement contract to procure and characterize SPS and other Personal Protective Equipment enabling technologies (extremities, torso and vital torso, head and face protection) from emerging ballistic/blast threats. Continue efforts on reducing weight, and bulk and increasing durability in terms of functional service life. Complete integration of self-diagnostic Smart Sensor and Small Arms Protective Inserts (ESAPI and XSAPI) and transition to ISSS (VS5) in FY14. Initiate development of alternate shaped ballistic inserts for female and small statured Soldiers and transition to System Capability & Manufacturing Process Demonstration (SC&MPD/VS 5) through FY15 as the components and subsystems mature. Complete development and initiate validation of new multi-sized head forms to support SPS helmet development and acceptance testing.</p> <p>FY 2014 Plans: Continue FY13 efforts to complete SPS ISSS prototype characterization and human factors testing. Continue to refine SPS ISSS design, power management and integration. Conduct a Critical Design Review (CDR) of the SPS ISSS and transition to SC&MPD/VS5 to procure Developmental and Operational Test candidates. Continue SPS ISD efforts to integrate new and emerging technologies at the component and subsystem level. Initiate transition of mature components and subsystems to SC&MPD/VS 5 through 1Q FY15. Will continue to evaluate component and subsystem technologies across the PPE portfolio (extremities, torso and vital torso, head and face protection) from emerging ballistic/blast threats. Continue efforts to reduce SPS weight and bulk at the system, subsystem and component level. Continue efforts to increase durability and functional service life. Continue development of ballistic inserts for female and small statured Soldiers (contoured shapes and/or additional sizes) and transition to SC&MPD/VS 5 through 1Q FY15 as the components and subsystems mature. Complete validation/accreditation of new multi-sized head forms to support SPS helmet development and acceptance testing.</p>			
Accomplishments/Planned Programs Subtotals	1.786	14.984	3.688

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT VS4: <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>
• Soldier Protective Equipment VS5: <i>RDTE, 0604601A.VS5,</i> <i>Soldier Protective Equipment</i>	3.938	11.942	20.043		20.043	13.173	11.682	8.806	7.806	0.000	77.390
• Central Funding & Fielding: <i>OMA, 121017, Central Funding &</i> <i>Fielding</i>	67.021	73.639	103.484		103.484	161.773	165.014	217.679	205.582	0.000	994.192

Remarks

D. Acquisition Strategy

Programs pursue refinement and integration of new technology at the component and subsystem level, culminating in the transition of mature technologies (TRL 6-7) to EMD and production. 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				R-1 ITEM NOMENCLATURE				PROJECT							
2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603827A: Soldier Systems - Advanced Development				VS4: 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	TBD	PM SPE:Ft. Belvoir, VA	0.000	0.100		0.100		0.100		-		0.100	Continuing	Continuing	Continuing
Subtotal			0.000	0.100		0.100		0.100		0.000		0.100			
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/Sys Engineering Spt	MIPR	Various:Various	0.000	0.375		2.484		1.500		-		1.500	Continuing	Continuing	0.000
Dev/Integ Contracts	TBD	Various:various	0.000	0.611		10.000		0.688		-		0.688	Continuing	Continuing	Continuing
Subtotal			0.000	0.986		12.484		2.188		0.000		2.188			
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	0.300		0.600		0.400		-		0.400	Continuing	Continuing	Continuing
Subtotal			0.000	0.300		0.600		0.400		0.000		0.400			
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/Non-ballistic) Testing	MIPR	Various:Various	0.000	0.400		1.800		1.000		-		1.000	Continuing	Continuing	Continuing
Subtotal			0.000	0.400		1.800		1.000		0.000		1.000			
Project Cost Totals			0.000	1.786		14.984		3.688		0.000		3.688			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT VS4: <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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT VS4: <i>Soldier Protective 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

Soldier Protection System (SPS) Material Development Decision (MDD)					■																						
SPS Milestone B Decision						■																					
Initiate SPS component/subsystems development								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Award SPS components/subsystem contracts							■																				
SPS Preliminary Design Review (PDR)								■																			
Conduct Initial Characterization Testing (ballistic & non-destr eval)								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Award SPS components/subsystem contract options												■															
Conduct Characterization Testing (ballistic & non-dest eval)														■	■	■	■	■	■	■	■	■	■	■	■	■	■
Initiate SPS component/subsys Incr enhancements																											
Continue ballistic & Characterization testing on comp/subsys																											

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603827A: <i>Soldier Systems - Advanced Development</i>	PROJECT VS4: <i>Soldier Protective Equipment</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Soldier Protection System (SPS) Material Development Decision (MDD)	1	2013	1	2013
SPS Milestone B Decision	2	2013	2	2013
Initiate SPS component/subsystems development	3	2013	1	2015
Award SPS components/subsystem contracts	3	2013	3	2013
SPS Preliminary Design Review (PDR)	4	2013	4	2013
Conduct Initial Characterization Testing (ballistic & non-destr eval)	3	2013	2	2014
Award SPS components/subsystem contract options	3	2014	3	2014
Conduct Characterization Testing (ballistic & non-dest eval)	4	2014	1	2015
Initiate SPS component/subsys Incr enhancements	2	2015	4	2018
Continue ballistic & Characterization testing on comp/subsys	1	2016	2	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850A: <i>Integrated Broadcast Service</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	-	1.494	0.096	0.079	-	0.079	0.021	0.014	0.000	0.000	Continuing	Continuing
472: <i>INTEGRATED BROADCAST SERVICE (MIP)</i>	-	1.494	0.096	0.079	-	0.079	0.021	0.014	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

Reduction in FY14 BES/President's Budget

A. Mission Description and Budget Item Justification

The Joint Program Office (JPO) supports all Services and Special Operations Command (SOCOM). The Integrated Broadcast Service (IBS) is the worldwide Department of Defense (DoD) standard network for transmitting time-sensitive tactical and strategic intelligence and targeting data to all echelons of Joint Service operational users. The JPO's role is to complete consolidation and replacement of existing IBS terminal functionality and capability, and to complete execution of the IBS Technical Transition Plan (TTP). The JTT family of systems currently consists of the JTT-Senior and JTT-IBS. The TTP is a comprehensive refresh effort of the entire IBS network focused on rearchitecting the broadcast from its current multi-broadcast, multi-data format structure, to a single broadcast (Common Interactive Broadcast - CIB) and single data format (Common Message Format - CMF). The JTT family of systems is a critical component of the TTP as these systems are the only IBS receiver/transceiver devices in the DoD being modernized to support both the new consolidated broadcast architecture and the National Security Agency's (NSA) crypto modernization mandate. The JTT upgrades must execute the over-the-air broadcast portion of the TTP and IBS data flow via the existing over-the-air IBS broadcast networks. The JTT is the official IBS producer system, and ensures continued IBS interoperability to a variety of tactical receivers across DoD and the Services throughout the TTP implementation period and beyond. This program funds the completion of evaluation of JTT hardware and software modules, as well as performance enhancements to the family of JTT equipment. This is necessary to ensure crypto modernization compliance and to complete migration to a rearchitected CIB and CMF-based IBS broadcast structure. Funds also support the coordination of JTT configuration management, training, equipping and supporting the Warfighter with improved Joint Readiness and Interoperability.

FY14 Funds of \$0.079 million support the continued test and evaluation of the Common Interactive Broadcast (CIB) crypto modernization waveform for migration to the IBS intelligence Data Enterprise.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850A: <i>Integrated Broadcast Service</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	1.494	0.096	0.114	-	0.114
Current President's Budget	1.494	0.096	0.079	-	0.079
Total Adjustments	0.000	0.000	-0.035	-	-0.035
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.035	-	-0.035

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850A: <i>Integrated Broadcast Service</i>	PROJECT 472: <i>INTEGRATED BROADCAST SERVICE (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
472: <i>INTEGRATED BROADCAST SERVICE (MIP)</i>	-	1.494	0.096	0.079	-	0.079	0.021	0.014	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 Joint Program Office (JPO) supports all Services and Special Operations Command (SOCOM). The Integrated Broadcast Service (IBS) is the worldwide Department of Defense (DoD) standard network for transmitting time-sensitive tactical and strategic intelligence and targeting data to all echelons of Joint Service operational users. The JPO's role is to complete consolidation and replacement of existing IBS terminal functionality and capability, and to complete execution of the IBS Technical Transition Plan (TTP). The JTT family of systems currently consists of the JTT-Senior and JTT-IBS. The TTP is a comprehensive refresh effort of the entire IBS network focused on rearchitecting the broadcast from its current multi-broadcast, multi-data format structure, to a single broadcast (Common Interactive Broadcast - CIB) and single data format (Common Message Format - CMF). The JTT family of systems is a critical component of the TTP as these systems are the only IBS receiver/transceiver devices in the DoD being modernized to support both the new consolidated broadcast architecture and the National Security Agency's (NSA) crypto modernization mandate. The JTT upgrades must execute the over-the-air broadcast portion of the TTP and IBS data flow via the existing over-the-air IBS broadcast networks. The JTT is the official IBS producer system, and ensures continued IBS interoperability to a variety of tactical receivers across DoD and the Services throughout the TTP implementation period and beyond. This program funds the completion of evaluation of JTT hardware and software modules, as well as performance enhancements to the family of JTT equipment. This is necessary to ensure crypto modernization compliance and to complete migration to a rearchitected CIB and CMF-based IBS broadcast structure. Funds also support the coordination of JTT configuration management, training, equipping and supporting the Warfighter with improved Joint Readiness and Interoperability.

FY 2014 funds in the amount of \$.079 million supports the continued Common Interactive Broadcast (CIB) performance evaluation in over-the air, system of systems, SATCOM environment.

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

	FY 2012	FY 2013	FY 2014
Title: JTT IBS CIB Integration	1.494	0.096	0.079
Articles:	0	0	
Description: Integration of the Common Interactive Broadcast (CIB) waveform for migration to the IBS Worldwide standard DoD Network and NSA Certification			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603850A: <i>Integrated Broadcast Service</i>	PROJECT 472: <i>INTEGRATED BROADCAST SERVICE (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
JTT integration and testing of the Common Interactive Broadcast (CIB) waveform for migration to the IBS Worldwide standard DoD Network			
FY 2013 Plans: JTT testing of the Common Interactive Broadcast (CIB) waveform for migration to the IBS Worldwide standard DoD Network			
FY 2014 Plans: Continue CIB performance evaluation in over-the-air, system-of-systems, SATCOM environment.			
Accomplishments/Planned Programs Subtotals	1.494	0.096	0.079

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>
• V29600 Other Procurement, Army - JT: V29600 Other Procurement, Army - JTT/CIBS-M (Tiara)	4.657	1.641	0.824		0.824	0.849	0.874	0.900	0.915	Continuing	Continuing

Remarks

D. Acquisition Strategy
Funds support continued CIB performance evaluation in over-the-air, system-of-systems, SATCOM environment.

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

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</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	-	11.839	24.868	55.605	-	55.605	64.088	62.779	60.745	60.920	Continuing	Continuing
DS3: <i>TECHNOLOGY MATURATION INITIATIVES</i>	-	8.339	24.868	46.116	-	46.116	53.164	52.250	50.420	50.420	Continuing	Continuing
DX1: <i>Analysis of Alternatives</i>	-	3.500	0.000	9.489	-	9.489	10.924	10.529	10.325	10.500	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

FY14 funding decrease to support higher priority efforts.

A. Mission Description and Budget Item Justification

This Program Element (PE) develops and demonstrates selected technology enabled capabilities to support advanced ground and aviation systems, precision weapons, and soldier equipment. Funding facilitates demonstration of relatively mature technologies and systems in relevant environments and tactical / operational scenarios, taking technologies through and beyond Technology Readiness Level (TRL) 6. Efforts include competitive prototyping earlier in development to facilitate transition of new capabilities into acquisition programs of record. Efforts funded will be selected by an Army Senior Executive Steering Group to ensure that demonstrations have high potential for filling capability gaps and transition. This PE provides the Army an improved mechanism for fulfilling the goals of the Weapon Systems Acquisition Reform Act (WSARA) of 2009 by enabling greater competition in the latter stages of technology maturation and establishes a closer alignment between Science and Technology (S&T) programs and acquisition programs. This PE also provides analytical support for Analysis of Alternatives (AoA). It is used to centrally fund AoAs for new program starts that require a material development decision and do not yet have a Program Manager assigned for material development.

The cited work is consistent with the Assistant Secretary of Defense, Research and Engineering science and technology priority focus areas and the Army Modernization Strategy.

Work in this PE is performed by the Research, Development and Engineering Command (RDECOM), Engineering Research Development Center (ERDC), U.S. Army TRADOC Analysis Center (TRAC), U.S. Army Material Systems Analysis Activity (AMSAA), and/or Space and Missile Defense Command (SMDC).

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</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	10.165	24.868	74.756	-	74.756
Current President's Budget	11.839	24.868	55.605	-	55.605
Total Adjustments	1.674	0.000	-19.151	-	-19.151
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.000	-			
• SBIR/STTR Transfer	-0.326	-			
• Adjustments to Budget Years	-	-	-19.151	-	-19.151

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>				PROJECT DS3: <i>TECHNOLOGY MATURATION INITIATIVES</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
DS3: <i>TECHNOLOGY MATURATION INITIATIVES</i>	-	8.339	24.868	46.116	-	46.116	53.164	52.250	50.420	50.420	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

N/A

A. Mission Description and Budget Item Justification

This Project develops and demonstrates selected technology enabled capabilities to support advanced ground and aviation systems, precision weapons, and soldier equipment. Funding facilitates demonstration of relatively mature technologies and systems in relevant environments and tactical/operations scenarios, taking technologies through and beyond Technology Readiness Level (TRL) 6. Efforts include competitive prototyping earlier in development to facilitate transition of new capabilities into acquisition programs of record. Efforts funded will be selected by an Army Senior Executive Steering Group (ESG) to ensure that demonstrations have high potential for filling capability gaps and transitioning. This PE provides the Army an improved mechanism for fulfilling the goals of the Weapon Systems Acquisition Reform Act (WSARA) of 2009 by enabling greater competition in the latter stages of technology maturation and establishing a closer alignment between Science and Technology (S&T) programs and acquisition programs. This project also provides analytical support for AoAs in FY 13. To qualify for funding, a material development decision will be required. The cited work is consistent with the Assistant Secretary of Defense, Research and Engineering science and technology priority focus areas and the Army Modernization Strategy.

Work in the PE is performed by the Research, Development and Engineering Command (RDECOM), Engineering Research Development Center (ERDC), the Space and Missile Defense Command (SMDC), U.S Army TRADOC Analysis Center (TRAC) and U.S. Army Materiel Systems Analysis Activity (AMSAA).

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

	FY 2012	FY 2013	FY 2014
Title: Design, Fabricate, Evaluate, and Demonstrate	8.339	13.997	46.116
Articles:	0	0	
Description: This effort selects technologies in advanced ground systems, aviation systems, precision weapons, and/or soldier equipment that show high promise for achieving full potential to execute the necessary continuation of design, fabrication, evaluation, and demonstration within a high fidelity and realistic operating environment to transition into formal programs of record.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>		PROJECT DS3: <i>TECHNOLOGY MATURATION INITIATIVES</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Initiated five technology maturation and/or prototyping efforts: Integrated Soldier Power and Data Systems (\$1.4 million); Azimuth and Vertical Angle Module (AVAM) for the Joint Effects Targeting System (\$1.9 million); Next Generation Wireless Communications for Logistics (\$1.9 million); Tier 1 Soldier Battery Charger (\$1.1 million); and Advanced Weapon Sight Technology for Family of Weapon Sights (\$1.9 million).</p> <p>FY 2013 Plans: Matures five technology-enabled capability prototyping efforts initiated with FY12 funds; develops test parameters and assessment criteria and transitions these efforts to Programs of Record. Initiates five technology maturation and/or prototyping efforts: Small Aperture X-Band Antenna (SAXBA)-Broadband; Common Fire Extinguishing System; Efficient Power Takeoff; High Performance Lightweight Track; Load-Distributing Expandable Armor System (LEXAS).</p> <p>FY 2014 Plans: Will mature one or more technology-enabled capability maturation/prototyping efforts initiated with FY13 funds; will develop test parameters and assessment criteria and transition these efforts to Programs of Record. Will select one or more technology maturation/prototyping efforts and initiate with FY14 funds</p>				
<p>Title: Analytical Support for Analysis of Alternatives (AoA)</p> <p>Description: This effort provides FY 13 analytical support for Analysis of Alternatives (AoA).</p> <p>FY 2013 Plans: Centrally fund the analysis of alternatives for new programs that have a material development decision.</p>		0.000	10.871 0	0.000
Accomplishments/Planned Programs Subtotals		8.339	24.868	46.116
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
Multiple competitive contracts will be awarded based on selection of efforts from the Senior ESC. The various developmental programs in this project will continue to exercise competitively awarded contracts using best value source selection procedures.				
E. Performance Metrics				
Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.				

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>	PROJECT DS3: <i>TECHNOLOGY MATURATION INITIATIVES</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			
Integrated Soldier Power and Data System	C/CPFF	Ultra Electronics AMI:Ann Arbor, MI	0.000	1.443		0.500		-		-		-	0.000	1.943	0.000
Azimuth and Vertical Angle Module (AVAM) for the Joint Effects Targeting System (JETS)	C/CPFF	Crossbow; Toyon Research/Sensor In Motion; Irvine Sensors:Milpitas, CA; Goleta, CA; Irvine, CA	0.000	1.925	Feb 2012	1.000		-		-		-	0.000	2.925	0.000
Next Generation Wireless communications (NGWC) for Logistics	SS/IDIQ	ARINC/Booz Allen Hamilton:Annapolis, MD	0.000	1.925	Dec 2012	2.000		-		-		-	0.000	3.925	0.000
Tier 1 Soldier Battery Charger	C/FFP	DSCP; Thales Communications:Clarksburg, MD	0.000	1.121	Feb 2012	0.830		-		-		-	0.000	1.951	0.000
Advanced Weapon Sight Technology for Family of Weapon Sights (FWS)	C/CPFF	Alion; N2:Alexandria, VA; Irvine, CA	0.000	1.925	Mar 2012	0.960		-		-		-	0.000	2.885	0.000
Small Aperture X-Band Antenna (SAXBA) -- Broadband	C/TBD	TBD:TBD	0.000	-		1.967		1.430		-		1.430	0.000	3.397	0.000
Common Fire Extinguishing System	C/TBD	TBD:TBD	0.000	-		1.491		1.200		-		1.200	0.000	2.691	0.000
Efficient Power Takeoff	C/TBD	TBD:TBD	0.000	-		1.869		-		-		-	0.000	1.869	0.000
High Performance Lightweight Track	C/TBD	TBD:TBD	0.000	-		1.197		-		-		-	0.000	1.197	0.000
Load-Distributing Expandable Armor System (LEXAS)	C/TBD	TBD:TBD	0.000	-		2.183		2.500		-		2.500	0.000	4.683	0.000
S&T Technology Maturation and Prototyping	C/FFP	TBD:TBD	0.000	-		-		40.986		-		40.986	0.000	40.986	0.000
Subtotal			0.000	8.339		13.997		46.116		0.000		46.116	0.000	68.452	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>	PROJECT DS3: <i>TECHNOLOGY MATURATION INITIATIVES</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			
Analytical Support for Analysis of Alternatives	C/TBD	GMLRS Inc 4:TRAC and AMSAA	0.000	-		10.871		-		-		-	0.000	10.871	0.000
Subtotal			0.000	0.000		10.871		0.000		0.000		0.000	0.000	10.871	0.000
Project Cost Totals			0.000	8.339		24.868		46.116		0.000		46.116	0.000	79.323	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>	PROJECT DS3: <i>TECHNOLOGY MATURATION INITIATIVES</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
Integrated Soldier Power & Data System (ISPDS)	██████████																											
Azimuth & Vertical Angle Module for Joint Effects Targeting System (JETS)	██████████																											
Next Generation Wireless Communications	██████████																											
Tier 1 Soldier Battery Charger	██████████																											
Alternative Weapons Sight Technology for Family of Weapons Systems (FWS)	██████████																											
FY13 Technology(s) Selection Process	████																											
Small Aperture X-Band Antenna (SAXBA) -- Broadband					██████████																							
Common Fire Extinguishing System					██████████																							
Efficient Power Takeoff					██████████																							
High Performance Lightweight Track					██████████																							
Load-Distributing Expandable Armor System					██████████																							
FY 13 GMLRS Inc 4 AoA					██████████																							
FY14 Technology(s) Selection Process					████																							

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>	PROJECT DS3: <i>TECHNOLOGY MATURATION INITIATIVES</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Integrated Soldier Power & Data System (ISPDS)	2	2012	2	2013
Azimuth & Vertical Angle Module for Joint Effects Targeting System (JETS)	2	2012	3	2013
Next Generation Wireless Communications	2	2012	4	2013
Tier 1 Soldier Battery Charger	2	2012	2	2013
Alternative Weapons Sight Technology for Family of Weapons Systems (FWS)	2	2012	4	2013
FY13 Technology(s) Selection Process	3	2012	3	2012
Small Aperture X-Band Antenna (SAXBA) -- Broadband	1	2013	3	2014
Common Fire Extinguishing System	1	2013	4	2014
Efficient Power Takeoff	1	2013	4	2013
High Performance Lightweight Track	2	2013	4	2013
Load-Distributing Expandable Armor System	1	2013	4	2014
FY 13 GMLRS Inc 4 AoA	2	2013	4	2013
FY14 Technology(s) Selection Process	3	2013	3	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>	PROJECT DX1: <i>Analysis of Alternatives</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
DX1: <i>Analysis of Alternatives</i>	-	3.500	0.000	9.489	-	9.489	10.924	10.529	10.325	10.500	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

A. Mission Description and Budget Item Justification

This effort provides analytical support for Analysis of Alternatives (AoA). To qualify for funding a material development decision will be required and none of the funds can be obligated or expended to initiate an AoA without 30-day prior notification to the Congressional Defense Committees identifying the purpose of the AoA and certifying its full funding.

Work in the PE is performed by U.S. Army TRADOC Analysis Center (TRAC) and the U.S. Army Materiel Systems Analysis Activity (AMSAA).

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

	FY 2012	FY 2013	FY 2014
Title: Analytical Support for Analysis of Alternatives	3.500	0.000	9.489
Articles:	0		
Description: This effort provides analytical support for Analysis of Alternatives (AoA). In FY13, this effort was funded in Program Element 0604115, project DS3.			
FY 2012 Accomplishments: This PE centrally funds the analysis of alternatives for new programs that have a material development decision.			
FY 2014 Plans: Centrally funds the analysis of alternatives for new programs that have a material development decision.			
Accomplishments/Planned Programs Subtotals	3.500	0.000	9.489

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

N/A
Remarks

D. Acquisition Strategy

N/A

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY</i> <i>MATURATION INITIATIVES</i>	PROJECT DX1: <i>Analysis of Alternatives</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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>	PROJECT DX1: <i>Analysis of Alternatives</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

Identify Candidates for AoA funding	[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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604115A: <i>TECHNOLOGY MATURATION INITIATIVES</i>	PROJECT DX1: <i>Analysis of Alternatives</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Identify Candidates for AoA funding	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604131A: <i>TRACTOR JUTE</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	-	15.584	0.059	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
DT1: <i>TRACTOR JUTE</i>	-	15.584	0.059	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 details of this program are being reported in accordance with Title 10, United States Code, Section 119(a)(1).

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	15.584	0.059	0.000	-	0.000
Current President's Budget	15.584	0.059	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-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</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	76.039	79.232	-	79.232	107.587	146.463	151.769	159.700	Continuing	Continuing
DU3: <i>IFPC2</i>	-	0.000	76.039	79.232	-	79.232	107.587	146.463	151.769	159.700	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

Indirect Fire Protection Capability Increment 2 (IFPC2) established a new Program Element (PE) 0604319A for its RDTE program.

Previous PE/Project/Title: 0603305A/TR7 Army Missile Defense Systems Integration/TR7 Indirect Fire Protection Capability II-Intercept

Current PE/Project/Title: 0604319A/DU3 Indirect Fire Protection Capability Increment 2/ DU3 IFPC2

Please note the following:

- 1) The funding in FY 2011-12 is shown in PE 0603305A and
- 2) The funding in FY 2013-17 is shown in PE 0604319A.

A. Mission Description and Budget Item Justification

This program supports the overall Air and Missile Defense (AMD) architecture and provides a robust intercept capability against Cruise Missiles (CM), Unmanned Aircraft System (UAS) and Rocket, Artillery, and Mortar (RAM) threats for deployed forces. The Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) is a ground-based weapon system that will be designed to acquire, track, engage, and defeat UAS, CM, and RAM. The System will provide 360-degree protection and will simultaneously engage threats arriving from different azimuths. A block acquisition approach will be used to provide this capability. The Block 1 system will consist of an existing interceptor and sensor and development of technical fire control and a Multi-Mission Launcher (MML) to support the UAS and CM mission. The Block 2 system will develop interceptors, sensors, and technical fire control to support the counter RAM mission. The IFPC Inc 2-I System will be compatible with the Army Integrated Air and Missile Defense (IAMD) C2 architecture. The IFPC Inc 2-I System will be transportable by Army common mobile platforms.

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</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	76.039	109.046	-	109.046
Current President's Budget	0.000	76.039	79.232	-	79.232
Total Adjustments	0.000	0.000	-29.814	-	-29.814
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-29.814	-	-29.814

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>				PROJECT DU3: <i>IFPC2</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
DU3: <i>IFPC2</i>	-	0.000	76.039	79.232	-	79.232	107.587	146.463	151.769	159.700	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

Note

Indirect Fire Protection Capability Increment 2 - Intercept (IFPC2) established a new Program Element (PE) 0604319A for its RDTE program.

Previous PE/Project/Title: 0603305A/TR7 Army Missile Defense Systems Integration/TR7 Indirect Fire Protection Capability II-Intercept

Current PE/Project/Title: 0604319A/DU3 Indirect Fire Protection Capability Increment 2/ DU3 IFPC2

Please note the following:

- 1) The funding in FY 2011-12 is shown in PE 0603305A and
- 2) The funding in FY 2013-17 is shown in PE 0604319A

A. Mission Description and Budget Item Justification

This program supports the overall Air and Missile Defense (AMD) architecture and provides a robust intercept capability against Cruise Missiles (CM), Unmanned Aircraft System (UAS) and Rocket, Artillery, and Mortar (RAM) threats for deployed forces. The Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) is a ground-based weapon system that will be designed to acquire, track, engage, and defeat UAS, CM, and RAM. The System will provide 360-degree protection and will simultaneously engage threats arriving from different azimuths. A block acquisition approach will be used to provide this capability. The Block 1 system will consist of an existing interceptor and sensor and development of technical fire control and a Multi-Mission Launcher (MML) to support the UAS and CM mission. The Block 2 system will develop interceptors, sensors, and technical fire control to support the counter RAM mission. The IFPC Inc 2-I System will be compatible with the Army Integrated Air and Missile Defense (IAMD) C2 architecture. The IFPC Inc 2-I System will be transportable by Army common mobile platforms.

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

	FY 2012	FY 2013	FY 2014
Title: Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) System Engineering & Program Management	0.000	22.843	9.500
Articles:		0	
Description: Funding is provided for the following Government effort:			
FY 2013 Plans:			
- Perform system engineering, logistics studies, analysis and design and business management activities			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>		PROJECT DU3: <i>IFPC2</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Conduct program reviews - Prepare milestone documentation - Conduct milestone review - Continue to provide technical support for AOA excursion - Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Initiate Technology Development (TD) phase activities - Perform system engineering, logistics engineering, system test and evaluation, technical control, and business management activities - Conduct system and program reviews - Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation 				
<p>Title: IFPC Inc 2-I Engineering & Technical Support</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following Government effort:</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Provided engineering and technical support for development of system hardware, software and integration requirements and definition - Integrate design refinements from Science and Technology effort into system baseline design - Participate in program reviews - Provide technical support for milestone documentation and decision review - Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Continue engineering and technical support for development of system hardware, software and integration requirements and definition - Continued integration of design refinements from Science and Technology effort into system baseline design - Participate in system and program reviews - Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation 		0.000	6.000 0	5.556
<p>Title: IFPC Inc 2-I System/Subsystem Development and Integration</p> <p align="right">Articles:</p>		0.000	47.196 0	64.176

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>	PROJECT DU3: <i>IFPC2</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 Government effort</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Support completion of system/subsystem requirements definition - Initiate system/subsystem hardware, software and integration design and development activities - Initiate development of Multi-Mission Launcher Technical Data Package - Participate in system and program reviews - Support milestone documentation and decision review - Procure prototype long lead material and items - Initiate fabrication and integration development of prototype components Pre-Milestone A - Initiate fabrication of prototype Post-Milestone A - Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Continue system component hardware, software and integration design and development activities - Participate in system and program reviews - Fabricate, integrate system/subsystem prototypes - Continue development of technical data package - Perform technical assessments, concept studies, cost reduction, risk reduction, and required documentation 			
Accomplishments/Planned Programs Subtotals	0.000	76.039	79.232

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>
• PE 0604869A, Proj M06: <i>Patriot/MEADS Combined Aggregate Program (CAP)</i>	377.610	400.861								0.000	778.471
• PE 0605456A, Proj PA3: <i>PAC-3/MSE MISSILE</i>	86.139	69.029	68.843		68.843	129.627	63.506	65.179	65.734	Continuing	Continuing
• SSN C53101: <i>MSE Missile</i>	74.953	12.850	540.401		540.401	540.520	559.623	566.757	655.184	Continuing	Continuing
• PE 0102419A, Proj E55: <i>JLENS</i>	317.382	190.422	98.450		98.450	46.600	47.450	37.830	2.600	Continuing	Continuing
• PE 0605455A, Proj S35: <i>SLAMRAAM</i>	1.186									0.000	1.186

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>	PROJECT DU3: <i>IFPC2</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
• PE0603305A, Proj TR7: <i>Indirect Fire Protection Capability -II</i>	8.834									0.000	8.834
• PE 0605457A, Proj S40: <i>Army Integrated Air and Missile Defense (AIAMD)</i>	262.032	262.211	364.649		364.649	382.869	221.306	141.908	79.338	Continuing	Continuing
• SSN BZ5075: <i>Army IAMD Battle Command System (IBCS)</i>			21.200		21.200	100.700	315.370	482.640	446.130	Continuing	Continuing
• PE 0604820A, Proj E10: <i>SENTINEL</i>	3.093	3.486	1.549		1.549	5.264	5.911	6.307	6.053	Continuing	Continuing
• PE 654741, Proj 126, 146, 149,: <i>Air Defense C2I Eng Dev</i>	57.050	73.333	18.294		18.294	20.898	20.557	18.009	11.015	Continuing	Continuing

Remarks

This program supports the Army Integrated Air and Missile Defense (IAMD) architecture.

D. Acquisition Strategy

The Materiel Development Decision (MDD) was completed in fourth quarter FY 2011, allowing for the initiation of an Analysis of Alternatives (AoA) to determine materiel solution approach; establishment of requirement baseline; initiation of development of required Milestone documents and execution of the Milestone decision to authorize proceeding into the next phase of development in FY 2013.

The Government plans to send funding to the Aviation and Missile Research Development and Engineering Center (AMRDEC) for the development and demonstration of the MML. The Government also plans to send funding to the Letterkenney Army Depot (LEAD) for the development and testing of the Multi-Mission Launcher (MML). An Analysis will be performed to determine production of the MML.

No new contracts will be awarded in support of the development of IFPC Inc 2-I Block I effort. The Government will use existing contracts and work performed by other Government agencies. Additional work will be performed by the Aviation and Missile Research, Development and Engineering Center (AMRDEC) and Letterkenney Army Depot (LEAD) through funding provided to those organizations by the IFPC Inc 2-I Product Office. The Government will use the following contracts:

- The Navy's PMA-259 contract will be used to develop and integrate the Technical Fire Control (TFC) and IFPC Inc 2-I Block I Interceptor uplink. This contract will also be used to procure test missiles to support the Technology Development (TD) and Engineering and Manufacturing Development (EMD) phases.
- The Army's FAAD Command and Control (C2) contract will be used to support development, test, and integration of the IFPC Inc 2-I Block I Interceptor with the FAAD C2 and the Multi-Mission Launcher (MML).

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>	PROJECT DU3: <i>IFPC2</i>
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- The Army's IBCS contract will be used to support development, test, and integration of the IFPC Inc 2-I Block I Interceptor with the IBCS and the MML.
- The Army's Sentinel contract will be used to incorporate sensor software upgrades to enhance detection of low radar cross section (RCS) and slow moving targets.

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>	PROJECT DU3: <i>IFPC2</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 Admin	MIPR	Cruise Missile Defense Systems Project Office:Huntsville, Alabama	0.000	-		-		3.962		-		3.962	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		3.962		0.000		3.962			

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 Engineering & Integration	TBD	Cruise Missile Defense Systems Project Office:Huntsville, AL	0.000	-		22.843		9.500		-		9.500	Continuing	Continuing	Continuing
Engineering and Technical Support	MIPR	Aviation and Missile Research, Development, Engineering Center:Huntsville, AL	0.000	-		6.000	Apr 2013	5.556		-		5.556	Continuing	Continuing	Continuing
System/Subsystem Development and Integration	MIPR	Multiple Activities:Multiple Locations	0.000	-		47.196		60.214		-		60.214	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		76.039		75.270		0.000		75.270			

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
0.000	0.000		76.039	79.232	0.000	79.232			

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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>	PROJECT DU3: <i>IFPC2</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
Block 1 Milestone A								■																				
Block 1 Technology Development (TD) Phase									■	■	■	■	■	■	■	■												
Live Fire Demonstration																■												
Block 1 Milestone B																				■								
Block 1 Engineering and Manufacturing (EMD) Phase																					■	■	■	■	■	■	■	■
Block 1 Milestone 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604319A: <i>Indirect Fire Protection Capability Increment 2</i>	PROJECT DU3: <i>IFPC2</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 1 Milestone A	4	2013	4	2013
Block 1 Technology Development (TD) Phase	1	2014	1	2016
Live Fire Demonstration	4	2015	4	2015
Block 1 Milestone B	2	2016	2	2016
Block 1 Engineering and Manufacturing (EMD) Phase	2	2016	3	2018
Block 1 Milestone C	4	2018	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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604785A: <i>INTEGRATED BASE DEFENSE</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	4.043	4.476	-	4.476	3.855	3.897	3.962	0.000	Continuing	Continuing
DS4: <i>INTEGRATED BASE DEFENSE</i>	-	0.000	4.043	4.476	-	4.476	3.855	3.897	3.962	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

Integrated Base Defense (IBD) provides integration of software and analytical capability to support the integration of systems in the field. IBD employs an enterprise approach to enable Integrated Base Defense capabilities across the operational spectrum by leveraging interoperability efforts in support of the Integrated Unit, Base, and Installation Protection (IUBIP) framework.

FY 2014 Research Development Test and Evaluation funding in the amount of \$4.476 million supports the management, integration, and collaboration of specified Department of Defense Integrated Base Defense efforts to provide enhanced situational awareness, increased efficiencies, and more effective responses for both tactical bases and Continental United States (CONUS)/Outside the Continental United States(OCONUS) installations.

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	0.000	4.043	4.476	-	4.476
Current President's Budget	0.000	4.043	4.476	-	4.476
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0604785A: <i>INTEGRATED BASE DEFENSE</i>				PROJECT DS4: <i>INTEGRATED BASE DEFENSE</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
DS4: <i>INTEGRATED BASE DEFENSE</i>	-	0.000	4.043	4.476	-	4.476	3.855	3.897	3.962	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

Mission Description:

Integrated Base Defense (IBD) provides integration of software and analytical capability to support the integration of systems in the field. IBD employs an enterprise approach to enable Integrated Base Defense capabilities across the operational spectrum by leveraging interoperability efforts in support of the Integrated Unit, Base, and Installation Protection (IUBIP) framework.

Justification:

FY 2014 Research Development Test and Evaluation funding in the amount of \$4.476 million supports the management, integration, and collaboration of specified Department of Defense Integrated Base Defense efforts to provide enhanced situational awareness, increased efficiencies, and more effective responses for both tactical bases and Continental United States (CONUS)/Outside the Continental United States (OCONUS) installations.

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

Title: Integrated Base Defense Architecture Development	FY 2012	FY 2013	FY 2014
	0.000	4.043	4.476
Articles:		0	
Description: Development of holistic IBD architectures leveraging DoD-approved protocol and processes to support interoperability of fielded and emerging IBD-related systems.			
FY 2013 Plans: Oversee execution of Interim-Integrated Base Defense Increments 1 and 2. Support the ASA(ALT) Architecture & Analysis Team for Force Basing (AATFB) IBD Product Development Team with both Semi-fixed/Expeditionary and Fixed Site Portfolio Development. Continue coordination with the Command Post (CP) and Sensor Computing Environment to ensure alignment with Common Operating Environment (COE) and Computing Environment (CE) framework. Continue development of an IBD operations functionality that leverages current IBD-related efforts that allows the Warfighter to execute the IBD mission more effectively and efficiently.			
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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604785A: <i>INTEGRATED BASE DEFENSE</i>	PROJECT DS4: <i>INTEGRATED BASE DEFENSE</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continue supporting the ASA(ALT) Architecture & Analysis Team for Force Basing (AATFB) IBD Product Development Team with both Semi-fixed/Expeditionary and Fixed Site Portfolio Development. Continue coordination with the Command Post (CP) and Sensor Computing Environment to ensure alignment with the Common Operating Environment (COE) and Computing Environment (CE) framework. Continue refinement of an IBD operations functionality and architecture to ensure data and control of current and emerging stand-alone sensors/processes can be combined on a single Graphical User Interface (GUI) to standardize training, reducing the number of operators required and reducing the footprint, hardware, and associated maintenance/logistics. Ensure promulgation of an IBD construct and the operation of an Software Support Activity (SSA) capability supporting a holistic Life Cycle Support of the IBD Software Architecture and enabling technologies.			
Accomplishments/Planned Programs Subtotals	0.000	4.043	4.476

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

N/A

Remarks

D. Acquisition Strategy

The Integrated Base Defense (IBD) acquisition strategy is to leverage existing IBD-related government organizations and to competitively award multiple contracts in support of IBD objectives for the development of holistic IBD architectures and products to support interoperability of fielded and emerging IBD-related 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-2, RDT&E Budget Item Justification: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</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	-	51.389	26.196	28.991	-	28.991	27.759	0.000	0.000	100.000	Continuing	Continuing
LE4: <i>Long Endurance Multi-Intelligence Vehicle</i>	-	51.389	26.196	28.991	-	28.991	27.759	0.000	0.000	100.000	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

This program element funds Long Endurance Multi-Intelligence Vehicle (LEMV) efforts performed by the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT).

The LEMV was funded in PE 0603308A Project 978 in FY10.

The Army stated, due to technical and performance challenges, and the limitations imposed by constrained resources, the Army has determined to discontinue the LEMV development effort.

A. Mission Description and Budget Item Justification

This program element (PE) evaluates unmanned aerial vehicle (UAV) prototype systems that provide increased flight and/or mission duration for Intelligence, Surveillance, and Reconnaissance (ISR) and communications capabilities. These systems include the aerial platform integrated with existing and/or developmental payloads. Project LE4 is developing the Long Endurance Multi-intelligence Vehicle (LEMV), which is a hybrid airship prototype integrated with existing and developmental ISR and communications payloads to improve persistent surveillance and assured communications capabilities. Hybrid airship platform endurance is dependent on weather conditions and payload weight, but the LEMV prototype system is expected to increase endurance to 21 days on average assuming 20 knot winds.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	43.563	26.196	28.991	-	28.991
Current President's Budget	51.389	26.196	28.991	-	28.991
Total Adjustments	7.826	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	7.826	-			
• 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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>				PROJECT LE4: <i>Long Endurance Multi-Intelligence Vehicle</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
LE4: <i>Long Endurance Multi-Intelligence Vehicle</i>	-	51.389	26.196	28.991	-	28.991	27.759	0.000	0.000	100.000	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

Effective FY2011, funding for the Long Endurance Multi-Intelligence Vehicle (LEMV) was moved from program element (PE) 978 0603308A to LE4 0305205A. The Army stated, due to technical and performance challenges, and the limitations imposed by constrained resources, the Army has determined to discontinue the LEMV development effort.

A. Mission Description and Budget Item Justification

The Long Endurance Multi-Intelligence Vehicle (LEMV) is a technology demonstration effort to improve persistent surveillance and assured communications using a platform with significantly improved endurance over existing systems. The LEMV platform is a hybrid airship that achieves vertical lift from helium contained within its hull making it lighter-than-air and from traditional engine propulsion that produces thrust to provide lift. The LEMV prototype requirements are to achieve 21 day endurance in 20 knot continuous winds, carry 2500 pounds of multiple surveillance and communication payloads, operate at a maximum altitude of 20,000 feet Mean Sea Level, and provide 16 kilowatts (kW) of power to the payload. The LEMV system is recoverable and reusable. The LEMV system prototype and associated technologies will be evaluated during a Joint Military Utility Assessment (JMUA) in an operational environment upon completion of developmental testing.

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

	FY 2012	FY 2013	FY 2014
Title: LEMV System Design, Development, and Sub-System Integration	43.605	0.000	0.000
Articles:	0		
Description: This effort develops a hybrid airship prototype integrated with payloads, ground control stations, and support equipment.			
FY 2012 Accomplishments: Completed fabrication of support equipment; and integrated all major subsystems.			
Title: Developmental Testing and Certification	7.784	20.196	0.000
Articles:	0	0	
Description: This effort conducts developmental testing, information assurance accreditation, and airworthiness certifications.			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	PROJECT LE4: <i>Long Endurance Multi-Intelligence Vehicle</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<i>FY 2012 Accomplishments:</i> Completed interoperability certification; continue to monitor information assurance accreditation baseline.				
<i>FY 2013 Plans:</i> Complete developmental testing, to include flight tests and endurance demonstration.				
<i>Title:</i> Joint Military Utility Assessment (JMUA) <i>Description:</i> This effort prepares and conducts the JMUA, to include training and transportation to the JMUA location. <i>FY 2013 Plans:</i> Will transport LEMV system to JMUA location; will complete training for JMUA personnel; will begin phased JMUA activities; and will provide initial JMUA report and recommended Tactics, Techniques, and Procedures.		<i>Articles:</i> 0.000	6.000 0	0.000
<i>Title:</i> Contract Closeout <i>Description:</i> This effort performs an orderly disassembly and disposal of the airship and associated items. <i>FY 2014 Plans:</i> This effort performs an orderly disassembly and disposal of the airship and associated items.		0.000	0.000	28.991
Accomplishments/Planned Programs Subtotals		51.389	26.196	28.991
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy Army received approval to acquire the LEMV under an Other Transaction Authority (OTA). Extensive market research determined that this hybrid airship has never been manufactured as a full-scale functioning system and critical hybrid airship technology at the system and subsystem level is mainly available from non-traditional Department of Defense contractors. An OTA agreement was preferred in order to gain access to critical technology within the Non-Traditional industrial community in this area and to promote competition. The OTA Agreement was competitively awarded using a competitive Request for Proposal process. A Joint Military Utility Assessment (JMUA) will be conducted in theatre following the system development and transport. A Material Development Decision (MDD) is expected 90-180 days after completion of the JMUA Phase 1 (the first 2 months of the overall JMUA time period).				

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	PROJECT LE4: <i>Long Endurance Multi-Intelligence 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-3, RDT&E Project Cost Analysis: PB 2014 Army **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	PROJECT LE4: <i>Long Endurance Multi-Intelligence Vehicle</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:various	2.571	1.400		1.400		1.000		-		1.000	Continuing	Continuing	0.000
Subtotal			2.571	1.400		1.400		1.000		0.000		1.000			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			
Design, development, and sub-system integration	C/CPFF	Various:Various	162.534	37.884		-		-		-		-	Continuing	Continuing	Continuing
Sub-system risk reduction, trade studies & competitive agreement award	C/CPFF	Various:Various	15.000	-		-		-		-		-	Continuing	Continuing	Continuing
Developmental/Operational testing	C/CPFF	Various:Various	24.000	6.063		14.796		-		-		-	Continuing	Continuing	Continuing
Military Utility Assessment	C/CPFF	Various:Various	0.000	-		6.000		-		-		-	Continuing	Continuing	0.000
Contract Closeout	C/CPFF	Various:Various	0.000	-		-		26.491		-		26.491	0.000	26.491	0.000
Subtotal			201.534	43.947		20.796		26.491		0.000		26.491			

Remarks
 Awarded Other Transactional Agreement (OTA) to Northrop Grumman on 14 June 2010. Executed option to build first airship.

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 and SETA Support	Various	Various:various	30.400	5.390		3.000		1.500		-		1.500	Continuing	Continuing	Continuing
Subtotal			30.400	5.390		3.000		1.500		0.000		1.500			

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	PROJECT LE4: <i>Long Endurance Multi-Intelligence Vehicle</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

Developmental Testing and Certification	████████████████████	
Joint Military Utility Assessment	████	
Contract Closeout	██	

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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 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0305205A: <i>Long Endurance Multi-Intelligence Vehicle (LEMV)</i>	PROJECT LE4: <i>Long Endurance Multi-Intelligence Vehicle</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Developmental Testing and Certification	3	2012	3	2013
Joint Military Utility Assessment	3	2013	3	2013
Contract Closeout	3	2013	4	2014

