

UNCLASSIFIED

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

February 2012



Army

Justification Book

Research, Development, Test & Evaluation, Army

RDT&E - Volume III, Budget Activity 7

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 FY 2013 RDT&E Program
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Exhibit R-1

Summary

06-Jan-2012

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

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Appropriation: 2040 A RDT&E, Army

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

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

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

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

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

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

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

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

Exhibit R-1

Appropriation: 2040 A RDT&E, Army

06-Jan-2012

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

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

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161	07	0607865A	Patriot Product Improvement.....	38
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***Budget Activity 07: Operational Systems Development
Appropriation 2040: Research, Development, Test & Evaluation, Army***

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177	07	0303140A	Information Systems Security Program.....	192
178	07	0303141A	Global Combat Support System.....	210
179	07	0303142A	SATCOM Ground Environment (SPACE).....	232
180	07	0303150A	WWMCCS/Global Command and Control System.....	245
181	07	0305204A	Tactical Unmanned Aerial Vehicles.....	254
182	07	0305208A	Distributed Common Ground/Surface Systems.....	281
183	07	0305219A	MQ-1 Gray Eagle - Army UAV (MIP).....	293
184	07	0305232A	RQ-11 Raven.....	303
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Aircraft Engine Component Improvement Program	0203752A	168	07.....	131
Aircraft Modifications/Product Improvement Programs	0203744A	167	07.....	104
Biometrics Enabled Intelligence	0307665A	187	07.....	326
Biometrics Enterprise	0607665A	160	07.....	27
Combat Vehicle Improvement Programs	0203735A	165	07.....	76
Digitization	0203758A	169	07.....	140
Distributed Common Ground/Surface Systems	0305208A	182	07.....	281
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Force XXI Battle Command, Brigade and Below (FBCB2)	0203759A	170	07.....	147
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Intelligence Support to Cyber (ISC) - MIP	0203347A	163	07.....	56
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Patriot Product Improvement	0607865A	161	07.....	38
RQ-11 Raven	0305232A	184	07.....	303
RQ-7 Shadow UAV	0305233A	185	07.....	309
SATCOM Ground Environment (SPACE)	0303142A	179	07.....	232
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Tactical Unmanned Aerial Vehicles	0305204A	181	07.....	254
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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	19.016	66.641	143.005	-	143.005	122.008	83.748	31.056	31.574	Continuing	Continuing
090: <i>MLRS HIMARS</i>	3.246	6.132	3.158	-	3.158	3.258	3.046	4.933	5.016	Continuing	Continuing
093: <i>Multi-Launch Rocket System (MLRS)</i>	3.561	15.883	72.503	-	72.503	43.744	28.719	1.005	1.022	Continuing	Continuing
784: <i>GUIDED MLRS</i>	2.498	2.543	10.295	-	10.295	43.890	22.520	25.118	25.536	Continuing	Continuing
78G: <i>GMLRS ALTERNATIVE WARHEADS</i>	9.711	42.083	57.049	-	57.049	31.116	29.463	-	-	Continuing	Continuing

Note
Change Summary Explanation: FY 2011: Adjustments made for Congressional marks, rescissions, and inflation. FY 2013: Funds used to develop improved armored cab for crew protection and blast protection for MLRS (093); program re-alignment, a successful Milestone B, and Engineering and Manufacturing Development (EMD) contract award in FY12 for GMLRS AW (78G); and other inflation adjustments.

A. Mission Description and Budget Item Justification

The M142 High Mobility Artillery Rocket System (HIMARS) is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, precision strike weapon system that fully supports more deployable, affordable and lethal, Brigade Combat Teams, Fires Brigades, Modular Forces, and Joint Expeditionary Forces. The HIMARS launcher is a C-130 transportable, wheeled, indirect fire, rocket/missile launcher capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) and Army Tactical Missile System (ATACMS) Family of Munitions (AFOM) engaging targets with precision out to ranges of 300 kilometers. HIMARS satisfies the Army's digitization requirements by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS) fire support command and control system. The HIMARS product improvement program provides funding for research, development, and integration efforts necessary for sustainment, obsolescence mitigation, reliability improvements, incorporation of advanced automotive, armor, armament and system hardware and software technologies, and decreasing the logistics footprint. This effort includes performing technical assessments, concept studies, and risk reduction efforts for incorporation of future requirements. The HIMARS product improvement program maintains compliance with Intra-Army Interoperability and Digital Communications. HIMARS has been deployed to Operation Iraqi Freedom (OIF) and is still supporting Operation Enduring Freedom (OEF) with great success by both US Army and Marine Corps units.

MLRS is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, Precision Strike weapon system that is organic/assigned to Fires Brigades supporting Brigade Combat Teams. The MLRS launcher provides critical missile precision strike, operational shaping fires, counterfire, and close support destructive and suppressive fires. The launcher is complimented by the MFOM to include the Guided Multiple Launch Rocket System (GMLRS), and the AFOM, capable of engaging targets up to a range of 300 kilometers. The MLRS product improvement program provides funding for research, development, and integration efforts to the MLRS necessary for sustainment, obsolescence mitigation, reliability improvements, incorporation of advanced automotive, armor, armament and system hardware and software technologies, and decreasing the logistics footprint. This effort includes performing technical assessments, concept studies, and risk reduction efforts for

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>

incorporation of future requirements. The MLRS product improvement program maintains compliance with Intra-Army Interoperability and Digital Communications via Joint Variable Message Format.

GMLRS munitions are the Army's primary organic Joint Expeditionary, all-weather, all-terrain, 24/7, tactical precision guided rockets employed by modular Fires Brigades supporting Brigade Combat Teams, Divisions, Joint Special Operations Force, Joint Force Combatant Commanders, and is also a key component of the Marine Corps Future Fighting Effort. GMLRS is the primary munitions for units fielded with the HIMARS and MLRS M270A1 rocket and missile launcher platforms. GMLRS provides close, medium, and long range precision and area fires to destroy, suppress, and shape threat forces and protect friendly forces against the following: cannon, mortar, rocket and missile artillery, light materiel and armor, personnel, command and control, and air defense surface targets. GMLRS integrates guidance and control package and an improved rocket motor achieving greater range and precision accuracy requiring fewer rockets to defeat targets, thereby reducing the logistics burden. The two fielded variants are GMLRS with Dual Purpose Improved Conventional Munitions (DPICM /Increment 1) and GMLRS Unitary (U/Increment 2), a 200-pound class high explosive warhead. The GMLRS Unitary is a modification to the GMLRS DPICM integrating a multi-mode fuze and high explosive warhead making it an all-weather, low collateral damage, precision strike rocket. This modification expands the MLRS target set into urban and complex environments by adding, point, proximity and delay fuzing modes, and supports Troops in Contact (TIC) scenarios. A third variant of GMLRS, the Alternative Warhead (AW/Increment 3) has completed Technology Development (TD) with a successful Milestone B and will enter Engineering and Manufacturing Development in FY12, with the Production and Deployment beginning in 2QFY15. The GMLRS AW is being developed to replace DPICM and meet requirements outlined in a 25 JUN 2008 DoD Cluster Munitions Policy, which requires all cluster munitions by 2019 to produce less than 1% Unexploded Ordinance on the battlefield. As of FY10, the AW Program has been managed and funded under project code, 78G. To date, over 2,121 GMLRS rockets have been fired in support of Overseas Contingency Operations (OCO) by the Army

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	51.619	66.641	85.162	-	85.162
Current President's Budget	19.016	66.641	143.005	-	143.005
Total Adjustments	-32.603	-	57.843	-	57.843
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.754	-			
• Adjustments to Budget Years	-	-	57.843	-	57.843
• Other Adjustments 1	-31.849	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>				PROJECT 090: <i>MLRS HIMARS</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
090: <i>MLRS HIMARS</i>	3.246	6.132	3.158	-	3.158	3.258	3.046	4.933	5.016	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The M142 High Mobility Artillery Rocket System (HIMARS) is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, precision strike weapon system that fully supports more deployable, affordable and lethal, Brigade Combat Teams, Fires Brigades, Modular Forces, and Joint Expeditionary Forces. The HIMARS launcher is a C-130 transportable, wheeled, indirect fire, rocket/missile launcher capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) and Army Tactical Missile System (ATACMS) Family of Munitions (AFOM) engaging targets with precision out to ranges of 300 kilometers. HIMARS satisfies the Army's digitization requirements by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS) fire support command and control system. The HIMARS product improvement program provides funding for research, development, and integration efforts necessary for sustainment, obsolescence mitigation, reliability improvements, incorporation of advanced automotive, armor, armament and system hardware and software technologies, and decreasing the logistics footprint. This effort includes performing technical assessments, concept studies, and risk reduction efforts for incorporation of future requirements. The HIMARS product improvement program maintains compliance with Intra-Army Interoperability and Digital Communications. HIMARS has been deployed to Operation Iraqi Freedom (OIF) and is still supporting Operation Enduring Freedom (OEF) with great success by both US Army and Marine Corps units.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: MLRS Production Improvement Program-HIMARS	3.246	6.132	3.158	-	3.158
Articles:	0	0			
Description: Continue system design and Production Qualification Testing, conduct Functional Configuration Audit, and develop Integrated Logistics Products; integrate and test Horizontal Technology Insertion (HTI) upgrades including Increased Crew Protection Cab, Enhanced Command and Control, Improved Initialization, Hardware and Software Obsolescence Mitigation, Tactical Fire Control, Embedded Training, Launcher Loader Module electric drive, Diagnostics/Prognostics, Alternate Coupling, Situational Awareness, Long Range Communication and future munition integration. Perform technical assessments, concept studies, cost reduction, risk reduction, field issue resolution and required documentation.					
FY 2011 Accomplishments: Complete testing and integration efforts for Long Range Communications, Driver Vision Enhancement, Blue Force Tracking and Fire Control Display. Effort will be required to maintain C4I/Interoperability certification and Network Interoperability certification. Technical assessments and concept studies in the areas of automotive					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 090: <i>MLRS HIMARS</i>

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

and hardware/software technologies and improved transportability will be conducted to support evolving mission requirements, planning for technology insertion and continued obsolescence mitigation.

FY 2012 Plans:

The focus of FY2012 program is execution of development activities for additional improved crew protection against emerging threats and enhancements to communications and battle command. Continued effort will be required to maintain C4I/Interoperability certification and Network Interoperability certification. Technical assessments and concept studies in the areas of automotive and hardware/software technologies and improved transportability will be conducted to support evolving mission requirements, planning for technology insertion and continued obsolescence mitigation.

FY 2013 Base Plans:

The focus of the FY2013 program is execution of enhancements to the Fire Control System and associated trainer updates as well as communications and battle command systems. Continued effort will be required to maintain C4I/Interoperability certification and Network Interoperability certification. Technical assessments and concept studies in the areas of automotive and hardware/software technologies and improved transportability will be conducted to support evolving mission requirements, planning for technology insertion and continued obsolescence mitigation.

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Accomplishments/Planned Programs Subtotals	3.246	6.132	3.158	-	3.158

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• C03000000: <i>HIMARS Launcher</i>	211.517	31.674	12.051		12.051					Continuing	Continuing
• C67501000: <i>HIMARS Modifications</i>	39.371	11.670	6.068		6.068		6.073	6.318	6.335	Continuing	Continuing
• CA028900: <i>HIMARS Modifications: Initial Spares</i>	1.856									0.000	1.856
• CA028800: <i>Initial Spares, HIMARS</i>	9.706	0.937								0.000	10.643

D. Acquisition Strategy

HIMARS follow-on Horizontal Technology Insertion efforts include Increased Crew Protection, Enhanced Command and Control, Improved Initialization, Long Range Communications, Fire Control System obsolescence mitigation and associated enhancements to training devices.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 090: <i>MLRS HIMARS</i>

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 090: <i>MLRS HIMARS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PFRMS Project Office:Redstone Arsenal, Alabama	9.271	0.199		0.102		-		0.102	Continuing	Continuing	Continuing
Subtotal			9.271	0.199		0.102		-		0.102			

Remarks
PFRMS - Precision Fires Rocket and Missile Systems

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Battle Command	SS/CPFF	CECOM, PEO STRI, AMRDEC, Techrizon, LMMFC:Various	15.741	5.075		2.418		-		2.418	Continuing	Continuing	Continuing
Other Government Agencies (OGA)	Various	AMCOM, GSA, RSA:Various	17.565	0.337		0.206		-		0.206	Continuing	Continuing	Continuing
Subtotal			33.306	5.412		2.624		-		2.624			

Remarks
SS - Sole Source; CPFF - Cost Plus Fixed Fee; CECOM - US Army Communication Electronics Command; PEO STRI - Program Executive Office Simulation Training and Instrument; AMRDEC - Aviation and Missile Research Development and Engineering Center; LMMFC - Lockheed Martin Missile and Fire Control; AMCOM - Aviation & Missile Command; GSA - General Services Administration; RSA - Redstone Arsenal Alabama

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research, S3, TMI:Various	3.833	0.311		0.158		-		0.158	Continuing	Continuing	Continuing
Subtotal			3.833	0.311		0.158		-		0.158			

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 090: <i>MLRS HIMARS</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks
S3 - Systems Studies Simulation, Inc., TMI - Tec Masters Inc

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Fort Hood Texas, ATEC, APG MD, WSMR, RTTC RSA.:Various	43.567	0.210		0.274		-		0.274	Continuing	Continuing	Continuing
Subtotal			43.567	0.210		0.274		-		0.274			

Remarks
ATEC - US Army Test and Evaluation Command; APG MD - Aberdeen Proving Grounds, Maryland; WSMR - White Sands Missile Range; RTTC RSA - Redstone Technical Test Center, Redstone Arsenal, Alabama

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	89.977	6.132		3.158		-		3.158			

Remarks

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
093: <i>Multi-Launch Rocket System (MLRS)</i>	3.561	15.883	72.503	-	72.503	43.744	28.719	1.005	1.022	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Multiple Launch Rocket and Missile System (MLRS) is a full spectrum, combat proven, all weather, 24/7 lethal and responsive, Precision Strike weapon system that is organic/assigned to Fires Brigades supporting Brigade Combat Teams. The MLRS launcher provides critical missile precision strike, operational shaping fires, counterfire, and close support destructive and suppressive fires. The launcher is complimented by the MLRS Family of Munitions (MFOM) to include the Guided Multiple Launch Rocket System (GMLRS), and the Army Tactical Missile System (ATACMS) Family of Munitions (AFOM), capable of engaging targets up to a range of 300 kilometers. The MLRS product improvement program provides funding for research, development, and integration efforts to the MLRS necessary for sustainment, obsolescence mitigation, reliability improvements, incorporation of advanced automotive armament, and system hardware and software technologies, and decreases the logistics footprint. This effort includes performing technical assessments, concept studies, and risk reduction efforts for incorporation of future requirements. The MLRS product improvement program maintains compliance with Intra-Army Interoperability and Digital Communications via Joint Variable Message Format.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: MLRS Product Improvement Program	3.561	15.883	72.503	-	72.503
Articles:	0	0			
Description: The MLRS product improvement program ensures compliance as defined in the Department of Defense (DoD) Information Technical Standards. Funding is provided to several Government Agencies/Laboratories each Fiscal Year in support of this program. Support efforts also include Enhanced Command and Control (C2), Interoperability Certifications, obsolescence mitigation, increased crew protection, automotive updates and hardware/software enhancements, and Information Assurance compliance. All efforts are directed toward preservation of platform viability and readiness to accept technology insertion as capability enhancements and obsolescence mitigations are developed.					
Perform Command, Control, Communications, Computers, and Intelligence (C4I)/Interoperability Certification Tests, Improved Operational Timeline, and Conduct Network Interoperability Testing/Certification. Perform technical assessments, concept studies, obsolescence mitigation, crew protection, automotive and hardware/software enhancements, and risk reduction.					
FY 2011 Accomplishments:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continue concept studies supporting product improvement program - including prototyping of new fire control system hardware/software architecture. Complete analyses supporting definition of requirements for improved crew protection cab. Perform Technical assessments and concept studies in the areas of automotive and hardware/software technologies, to support evolving mission requirements, planning for technology insertion, and continued obsolescence mitigation.					
<i>FY 2012 Plans:</i> Execute development activities to improve crew protection with a new cab and enhanced chassis blast protection that includes design activities with formal PDR. Maintain C4I/Interoperability certification and Network Interoperability certification. Conduct technical assessments and concept studies in the areas of automotive and hardware/software technologies to support evolving mission requirements, planning for technology insertion, and continued obsolescence mitigation.					
<i>FY 2013 Base Plans:</i> Increase Crew Protection and Fire Control System Update. Continue execution of development of improved armored cab for crew protection and blast protection including formal Critical Design Review (CDR). Fire Control System Update(FCS-U); Initiate development activities to update the fire control system to mitigate obsolescence. Fire control system update development will leverage previous studies conducted in the areas of hardware and software technologies that supported evolving mission requirements, planning for technology insertion, and continued obsolescence mitigation. Preliminary design activities, a formal PDR, and development activities leading to CDR will occur in FY13. Three year FCS-U Development begins 2QFY13. Production begins 4QFY15, with first delivery and install in 3QFY16. Additional activities include the continuation to maintain C4I/Interoperability certification and Network Interoperability certification.					
Accomplishments/Planned Programs Subtotals	3.561	15.883	72.503	-	72.503

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• C67500000: <i>MLRS Mods</i>	8.217	8.236	2.466		2.466		86.333	62.024	10.705	Continuing	Continuing
• CA0265000: <i>MLRS Mod Initial Spares (CA0265)</i>	1.014	1.031	1.064		1.064		1.087	1.076	1.095	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>

D. Acquisition Strategy

The MLRS product improvement program conducts concept studies to support obsolescence mitigation, automotive updates, and hardware/software enhancements. Development efforts underway include Enhanced C2 and efforts supporting Interoperability Certifications, Information Assurance compliance, and increased crew protection (Improved Armored Cab). The Improved Armored Cab effort, beginning in FY 12, fulfills a M270A1 system requirement that incorporates the same level of crew protection capability as the HIMARS Increased Crew Protection cab. A contract will be awarded following a competitive bid process (full and open competition) to ensure best value for the Government. The Fire Control System Update is driven by the need to mitigate obsolete electronic components that are being sustained through life of type purchases. These purchased components will be exhausted, thus requiring an update to the design. This update to the design will preserve current capability of firing the complete set of MLRS Family of Munitions per the Operational Requirements Document (ORD). Efforts preparing for the Fire Control System Update have been accomplished and the FCS-U contractor work will begin in FY13. Efforts preparing for the Fire Control System Update have been accomplished and the FCS-U contractor work will begin in FY13.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PFRMS Proj Ofc, Redstone Arsenal, Alabama:Redstone Arsenal, Alabama	6.241	0.340		1.143		-		1.143	Continuing	Continuing	Continuing
Subtotal			6.241	0.340		1.143		-		1.143			

Remarks
PFRMS - Precision Fires Rocket and Missile Systems

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies OGA	MIPR	FT SILL OK, CECOM-NJ AMRDEC-RSA AL,:various	15.745	0.500		-		-		-	Continuing	Continuing	Continuing
MLRS Improved Armored Cab	C/CPFF	TBD:TBD	-	14.436		12.689		-		12.689	Continuing	Continuing	Continuing
MLRS Fire Control System Development	TBD	TBD:TBD	-	-		54.571		-		54.571	Continuing	Continuing	Continuing
Subtotal			15.745	14.936		67.260		-		67.260			

Remarks
C/CPFF - Competitive/Cost-Plus Fixed-Fee LMMFC-D - Lockheed Martin Missile and Fire Control-Dallas
TBD - To Be Determined
AMRDEC - United States Army Research, Development, and Engineering Command
RSA AL - Redstone Arsenal, Alabama Ft Sill OK - Oklahoma
CECOM - United States Army Communication - Electronics Command

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	Various	Multiple:Multiple	3.553	0.457		-		-		-	Continuing	Continuing	Continuing

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			3.553	0.457		-		-		-			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support, Joint Interoperability Test Certificate	MIPR	CTSF, Ft. Hood:Texas	2.237	0.150		4.100		-		4.100	Continuing	Continuing	Continuing
Subtotal			2.237	0.150		4.100		-		4.100			

Remarks
 CTSF - Central Test Support Facility
 WSMR - White Sands Missile Range
 MIPR - Military Interdepartmental Purchase Request

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			27.776	15.883		72.503		-		72.503			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 093: <i>Multi-Launch Rocket System (MLRS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Improved Armored Cab Development Award 2Q FY12; Testing 1-4Q FY14	1	2012	4	2014
Fire Control System Upgrade Development - Award 2Q FY13; Testing 1-4Q FY15	2	2013	1	2016
Improved Armored Cab Production - 1st Delivery/Install 2Q FY15	2	2015	4	2017
Fire Control System Upgrade Production - Award 2Q FY15; 1st Delivery/install 2Q	2	2015	4	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 784: <i>GUIDED MLRS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
784: <i>GUIDED MLRS</i>	2.498	2.543	10.295	-	10.295	43.890	22.520	25.118	25.536	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Guided Multiple Launch Rocket System (GMLRS) Unitary (U/Increment 2) is the only variant of the Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM) currently in production. This rocket integrates a 200-pound class high explosive warhead with multi-mode fuzing options (proximity, point detonate, and delay); expanding the MLRS target set into urban, complex, pre-planned and Troops in Contact (TIC) scenarios by delivering a low collateral damage, precision strike rocket. GMLRS Unitary is relevant to current operations with over 2,121 rockets fired in support of Overseas Contingency Operations (OCO) by the Army, Marine Corps and United Kingdom. The program office continues to explore opportunities to enhance GMLRS technology. Improvements will provide the following, per Joint Capability Integration and Development System (JCIDS) requirements: (1) enhanced operational capability and flexibility across the target set, (2) potential cost savings across weapon system life cycle through obsolescence initiatives, (3) test equipment commonality and reduced user effort for sustainment operations with enhancements to the MLRS Common Test Equipment (MCTE), (4) future Insensitive Munitions (IM) technology studies and insertion, and (5) optimized flight performance and increased survivability for friendly forces and non-combatants through scalable effects.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Assess and improve GMLRS rockets.</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continue to assess GMLRS rocket design and seek improvements in reliability as necessary.</p> <p>FY 2012 Plans: Continue to assess and improve GMLRS rockets.</p> <p>FY 2013 Base Plans: Continue to seek improvements in rocket reliability, collateral damage, and effectiveness.</p>	<p>1.650</p> <p>0</p>	<p>1.526</p> <p>0</p>	<p>1.549</p>	<p>-</p>	<p>1.549</p>
<p>Title: Conduct development engineering for IM program.</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Plans:</p>	<p>-</p>	<p>0.381</p> <p>0</p>	<p>7.792</p>	<p>-</p>	<p>7.792</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 784: <i>GUIDED MLRS</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Additional IM improvements investigation.					
FY 2013 Base Plans: Continue to procure and qualify IM improvements to satisfy JCIDS requirements.					
Title: Investigate obsolescence/cost reduction opportunities/second source suppliers.	0.848	0.636	0.954	-	0.954
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Conduct development engineering; perform integration and test of multi-mode fuzes and potential alternate warhead solutions while monitoring the industry to mitigate obsolescence and investigate cost reductions through alternate sources of procurement.					
FY 2012 Plans: Continue the development engineering; performing integration of multi-mode fuzes and potential alternate warhead solutions while assessing the industry to mitigate obsolescence and investigate cost reductions through alternate sources of procurement.					
FY 2013 Base Plans: Continue to design and integrate enhanced operational capability and flexibility across the target set, as well as investigate obsolescence issues and cost reduction initiatives.					
Accomplishments/Planned Programs Subtotals	2.498	2.543	10.295	-	10.295

C. Other Program Funding Summary (\$ in Millions)										
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete Total Cost</u>
• GMLRS: <i>GMLRS</i>	264.548	333.167	218.679	20.553	239.232		252.057	277.660	362.965	Continuing Continuing

D. Acquisition Strategy
Project 784 is intended to support, investigate, and develop alternative material changes to improve the GMLRS family of munitions as they are identified by the material developer or combat developer. This project also supports IM activities to improve the overall posture of the system all the way down to component level. Future initiatives could include a missile modernization program to extend the shelf life of the GMLRS rocket.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 784: <i>GUIDED MLRS</i>

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 784: <i>GUIDED MLRS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	TBD	PFRMS Project Office,:RSA	27.696	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			27.696	-		-		-		-			

Remarks
TBD-To Be Determined; Cont.-Continuing; PFRMS - Precision Fires Rocket and Missile Systems; RSA-Redstone Arsenal, Alabama

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Unitary Contracts/Multiple	SS/CPFF	LMMFCS:Dallas, TX	276.027	2.282		9.862		-		9.862	Continuing	Continuing	Continuing
Other Government Agencies	TBD	AMCOM/AMRDEC,:RSA	77.729	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			353.756	2.282		9.862		-		9.862			

Remarks
SS/CPFF-Sole Source/Cost Plus Fixed Fee; Cont.-Continuing; LMMFCS - Lockheed Martin Missile and Fire Control System; TX - Texas; AMCOM-Aviation and Missile Command; TBD-To Be Determined; AMRDEC - U.S. Army Research, Development and Engineering Command; RSA - Redstone Arsenal, Alabama

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/S3/TMI,:Alabama	20.941	0.261		0.265		-		0.265	Continuing	Continuing	Continuing
Subtotal			20.941	0.261		0.265		-		0.265			

Remarks
C/CPFF-Cost/Cost Plus Fixed Fee; Cont.-Continuing; S3-Systems Studies Simulation, Inc.; TMI-Tec Masters, Inc.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 784: <i>GUIDED MLRS</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	TBD	WSMR, NM	107.957	-		0.168		-		0.168	Continuing	Continuing	Continuing
Subtotal			107.957	-		0.168		-		0.168			

Remarks
TBD-To Be Determined; Cont.-Continuing; WSMR, NM - White Sands Missile Range, New Mexico

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	510.350	2.543	10.295	-	10.295			

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>				PROJECT 78G: <i>GMLRS ALTERNATIVE WARHEADS</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
78G: <i>GMLRS ALTERNATIVE WARHEADS</i>	9.711	42.083	57.049	-	57.049	31.116	29.463	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable at this time.

A. Mission Description and Budget Item Justification

Guided Multiple Launch Rocket System (GMLRS) Alternative Warhead (AW/Increment 3) is being developed to replace the GMLRS Dual Purpose Improved Conventional Munitions (DPICM/Increment 1) and fill a Warfighting Capability Gap left by the future removal of current cluster munitions from the battlefield, as outlined in a 25 JUN 2008 Department of Defense (DoD) Cluster Munitions Policy. This effort includes: development, test activities to evaluate payload performance against validated models/simulations, and integration. GMLRS AW TD Phase has been completed with a successful Milestone B. The Army will enter into Engineering and Manufacturing Development (EMD) in FY12. Production and Deployment is scheduled for FY15 with Initial Operational Capability and the Full Rate Production Decision Review scheduled for FY17. Improvements will provide the following, per Joint Capability Integration and Development System (JCIDS) requirements: (1) enhanced operational capability and flexibility across the target set, (2) potential cost savings across weapon system life cycle through obsolescence initiatives, (3) test equipment commonality and reduced user effort for sustainment operations with enhancements to the Multiple Launch Rocket System (MLRS) Common Test Equipment (MCTE), and (4) future Insensitive Munitions (IM) technology studies and insertion.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Conduct Development Engineering, Design Component Testing, and Performance Analysis.	2.438	21.587	26.519	-	26.519
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Preliminary Design Review (PDR) in support of MS B.					
FY 2012 Plans: Design optimization and analysis, System Readiness Review (SRR) and Initial Design Review (IDR) in EMD Phase.					
FY 2013 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT			
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	78G: <i>GMLRS ALTERNATIVE WARHEADS</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Perform design optimization trade studies.					
Title: Perform technical assessments and concept studies.	1.466	6.214	14.271	-	14.271
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Complete Analysis of Alternatives for Milestone B/Technical Assessments/Model/Simulation.					
FY 2012 Plans: Evaluate SRR and IDR in EMD.					
FY 2013 Base Plans: Perform system integration trade studies.					
Title: Prepare Milestone Documentation, Risk Reduction, and Program Reviews.	1.383	1.657	2.486	-	2.486
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Capabilities Development Document (CDD), Statutory/Regulatory documentation support for MS B.					
FY 2012 Plans: Design optimization and analysis in EMD Phase.					
FY 2013 Base Plans: Critical Design Review (CDR) support.					
Title: Conduct System Test and Evaluation Activities.	4.424	12.625	13.773	-	13.773
Articles:	0	0			
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Test flight data analysis.					
FY 2012 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 78G: <i>GMLRS ALTERNATIVE WARHEADS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Test planning in support of MS C.					
<i>FY 2013 Base Plans:</i> Engineering Development Testing (EDT), ground testing, and system IM testing.					
Accomplishments/Planned Programs Subtotals	9.711	42.083	57.049	-	57.049

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

D. Acquisition Strategy
The GMLRS AW rocket is a product improved version of the current GMLRS DPICM rocket. During EMD, GMLRS AW will undergo further development, integration, and testing under a Firm Fixed Price (FFP) contract.

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 78G: <i>GMLRS ALTERNATIVE WARHEADS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	TBD	PFRMS Project Office,:RSA	3.596	4.481		3.265		-		3.265	Continuing	Continuing	Continuing
Subtotal			3.596	4.481		3.265		-		3.265			

Remarks
TBD-To Be Determined; Cont.-Continuing; PFRMS-Precision Fires Rocket and Missile Systems; RSA-Redstone Arsenal, Alabama

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AWP Contracts (Multiple)	Various	ATK (Plymouth, MN):LMMFCS (Dallas, TX), Systems Integrator	3.784	28.782		35.088		-		35.088	Continuing	Continuing	Continuing
Other Government Agencies	TBD	AMCOM/AMRDEC,:RSA	5.772	2.605		5.939		-		5.939	Continuing	Continuing	Continuing
Subtotal			9.556	31.387		41.027		-		41.027			

Remarks
AWP-Alternative Warhead Program; Various-Competitive/Firm Fixed Price/Sole Source/Cost Plus Fixed Fee; TBD-To Be Determined; Cont.-Continuing; AMCOM-Army Materiel Command; AMRDEC-U.S. Army Research, Development and Engineering Command; RSA-Redstone Arsenal, Alabama; ATK-Alliant Techsystems, Inc.; MN-Minnesota; LMMFCS-Lockheed Martin Missile and Fire Control System; TX-Texas

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/CPFF	Camber Research/S3/TMI,:Alabama	0.829	1.044		0.227		-		0.227	Continuing	Continuing	Continuing
Subtotal			0.829	1.044		0.227		-		0.227			

Remarks
C/CPFF-Competitive/Cost Plus Fixed Fee; Cont.-Continuing; S3-Systems Studies Simulation, Inc.; TMI-Tec Master, Inc.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 78G: <i>GMLRS ALTERNATIVE WARHEADS</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	TBD	WSMR, NM	6.222	5.171		12.530		-		12.530	Continuing	Continuing	0.000
Subtotal			6.222	5.171		12.530		-		12.530			0.000

Remarks
TBD-To Be Determined; Cont.-Continuing; WSMR, NM-White Sands Missile Range, New Mexico

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.203	42.083		57.049		-		57.049			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>		PROJECT 78G: <i>GMLRS ALTERNATIVE WARHEADS</i>	

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
System PDR		■																										
Milestone B							■																					
Engineering Development Testing (EDT)												■																
Critical Design Review (CDR)												■																
Production Qualification Testing (PQT)																■												
Milestone C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0603778A: <i>MLRS PRODUCT IMPROVEMENT PROGRAM</i>	PROJECT 78G: <i>GMLRS ALTERNATIVE WARHEADS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System PDR	2	2011	2	2011
Milestone B	2	2012	2	2012
Engineering Development Testing (EDT)	2	2013	4	2013
Critical Design Review (CDR)	2	2013	2	2013
Production Qualification Testing (PQT)	1	2014	4	2014
Milestone C	2	2015	2	2015

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	65.781	45.511	-	-	-	-	-	-	-	Continuing	Continuing
DT2: <i>NON-MIP BIOMETRICS</i>	65.781	37.451	-	-	-	-	-	-	-	Continuing	Continuing
DU2: <i>MANAGEMENT AGENCY</i>	-	8.060	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Biometrics Enterprise is comprised of two parts: Biometrics Identity Management Agency and the enterprise data repository called Biometrics Enabling Capability.

The Biometrics Identity Management Agency (BIMA) acts as the DoD proponent for biometrics; leads in the development and implementation of biometric technologies for Combatant Commands (COCOMS), Services, and Agencies; delivers capabilities in order to contribute to the enhancement of the biometric community; increases Joint Service interoperability and; empowers the warfighter by improving operational effectiveness on the battlefield.

Biometrics Enabling Capability (BEC) will be the Department of Defense (DoD) authoritative biometric enterprise database repository. Capabilities shall include multimodal storage and matching, state-of-the-art Service Oriented Architecture, management portal, Biometrically Enabled Watch-List, increased system capacity and processing ability, and system interoperability and data sharing with government agencies and stakeholders including the Federal Bureau of Investigation, Department of Homeland Security, National Ground Intelligence Center, Department of State, United States Central Command (CENTCOM), United States Special Operations Command and other DoD and Federal agencies, as required.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	65.781	45.511	-	-	-
Total Adjustments	65.781	45.511	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustments 1	65.781	45.511	-	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>	PROJECT DT2: <i>NON-MIP BIOMETRICS</i>
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COST (\$ in Millions)	FY 2011		FY 2012		FY 2013		FY 2014		FY 2015		FY 2016		FY 2017		Cost To Complete	Total Cost
	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost					
DT2: <i>NON-MIP BIOMETRICS</i>	65.781	37.451	-	-	-	-	-	-	-	-	-	-	-	Continuing	Continuing	
Quantity of RDT&E Articles																

Note

This program was previously reported under PE 0303140A - Information Systems Security Program , Project 5PM.

A. Mission Description and Budget Item Justification

Biometrics Enabling Capability (BEC) will be the Department of Defense (DoD) authoritative biometric enterprise database repository. Capabilities shall include multimodal storage and matching, state-of-the-art Service Oriented Architecture, management portal, Biometrically Enabled Watch-List, increased system capacity and processing ability, and system interoperability and data sharing with government agencies and stakeholders including the Federal Bureau of Investigation, Department of Homeland Security, National Ground Intelligence Center, Department of State, United States Central Command (CENTCOM), United States Special Operations Command and other DoD and Federal agencies, as required.

The current prototype capability, Next Generation Automated Biometric Identification System (NG-ABIS), was developed as a Quick Reaction Capability (QRC) based on a CENTCOM Joint Urgent Operational Needs Statement (JUONS). NG-ABIS provides a robust capability for distinguishing friend from foe in hot spots around the globe. NG-ABIS enables near-instantaneous device-to-database communication and lays the foundation for enhanced device-to-device communication, reducing cycle and response times. NG-ABIS receives submissions from existing QRC-based collection devices. NG-ABIS also receives requests by authorized users to perform storage retrieval and searches of biometric data collection and matching results. NG-ABIS provides a reliable and effective tool for overseas operations by allowing the Warfighter to make near real-time retention, capture, or release decision.

The NG-ABIS QRC will be the initial baseline capability for the BEC Program of Record (POR). NG-ABIS becomes BEC Increment 0 at the Full Deployment Decision (FDD) in FY2012 when the POR will be established. This was delayed from 3rd quarter FY2011 due to a delay in the enhanced NG-ABIS software deployment.

The BEC program has an associated Analysis of Alternatives that has been conducted in support of BEC Increment 1, a follow-on acquisition program that is conducting pre-Milestone B activities. Milestone B is projected for FY2013.

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

	FY 2011	FY 2012	FY 2013
Title: PM DoD Biometrics - Non-MIP for Biometrics Enabling Capability	65.781	37.451	-
Articles:	0	0	
Description: BEC			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>	PROJECT DT2: <i>NON-MIP BIOMETRICS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
<p>\$34.595M in Base funding provided Milestone B activities and documentation and furthered the development of Transaction Manager integration (TMi) that will provide the Warfighter with near real-time matching results for retention, capture, or release decisions. TMi is currently scheduled to be deployed into NG-ABIS in FY12. Allowed for system interoperability collaboration with DHS and DOJ's FBI. Leveraged biometric capabilities and data sharing with government agencies and stakeholders, including DOS, DHS, FBI, NGIC, CENTCOM and SOCOM. Supported additional system capacity and throughput based on rapidly increasing submission rates from the Warfighter. Supported Homeland Security Presidential Directive 24 (HSPD 24)/ National Security Presidential Directive 59 (NSPD 59) and maintain the compliance of the system consistent with current information assurance guidance, DoD policy and biometric standards. Improved the NG-ABIS data algorithms. Supported government civilian labor and operational support including travel, training, supplies, infrastructure and facility costs. Supported continued testing and evaluation of the Transaction Manager integration (TMi) in preparation for the full deployment to the operational environment. Supported integration, test and verification efforts supporting Service Oriented Architecture (SOA) based web services required to develop the system interoperability releases. Funds provided PM contractor support to plan, develop and prepare Army and Office of the Secretary of Defense (OSD) level documentation consistent with DoD Instruction 5000.02, the Defense Acquisition System and compliant with existing statutory and regulatory policies for a Full Deployment Decision (FDD) in FY12 for BEC Increment 0 and a Milestone B decision in FY13 for BEC Increment 1. \$25.134M in Overseas Contingency Operations funding resourced required labor costs for development, integration, test and verification efforts supported projected capabilities surrounding enhanced web services, interoperability with designated federal agencies biometric capabilities enhanced classification capabilities and quality improvement of data enterprise data sets. In addition, funds provided for processing and capacity increases in order to meet Homeland Security Presidential Directive 24 (HSPD 24)/National Security Presidential Directive 59 (NSPD 59) objectives.</p> <p>FY 2012 Plans: Funds will provide for System Integration competitive contract awards to support NG-ABIS system integration and Milestone B activities and documentation, and Engineering and Manufacturing Development (EMD) activities and documentation. Plan to incorporate Transaction Manager integration (TMi) into NG-ABIS providing the Warfighter with near real-time matching results for retention, capture, or release decisions. System interoperability collaboration with DHS and DOJ's FBI. Leverage biometric capabilities and data sharing with government agencies and stakeholders, including DOS, DHS, FBI, NGIC, CENTCOM and SOCOM. Support system capacity and throughput based on rapidly increasing submission rates from the Warfighter. Support Homeland Security Presidential Directive 24 (HSPD 24)/ National Security Presidential Directive 59 (NSPD 59) and maintain the compliance of the system consistent with current information assurance guidance, DoD policy and biometric standards. Support government civilian labor and operational support including travel, training, supplies, infrastructure and facility costs. Support continued testing and evaluation of the Transaction Manager integration (TMi) in preparation for the full deployment to the operational environment. Support test and evaluation activities under an EMD contract for BEC to include development of test plans, conducting preliminary testing of system functionality, production of test reports and support of technical reviews.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>	PROJECT DT2: <i>NON-MIP BIOMETRICS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Funds will provide PM contractor support to plan, develop and prepare Army and Office of the Secretary of Defense (OSD) level documentation consistent with DoD Instruction 5000.02, the Defense Acquisition System and compliant with existing statutory and regulatory policies for a Full Deployment Decision (FDD) in FY12 for BEC Increment 0 and a Milestone B decision in FY13 for BEC Increment 1.			
Accomplishments/Planned Programs Subtotals	65.781	37.451	-

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• B01301 - Biometrics Enterprise: <i>Other Procurement, Army Base</i>	8.482	2.322								0.000	10.804
• 432144 - Biometrics OMA: <i>Operations and Maintenance, Army Base</i>	1.712	1.682								0.000	3.394

D. Acquisition Strategy

The Under Secretary of Defense for Acquisition, Technology & Logistics (USA AT&L) held a biometrics Materiel Development Decision (MDD) Defense Acquisition Board (DAB) on 10 June 2009. On 06 July 2009, the USA AT&L issue an Acquisition Decision Memorandum (ADM) authorizing directing the Army to conduct an Analysis of Alternatives (AoA) for the Biometrics Enabling Capability (BEC) program. The Army published a BEC AoA report on 30 April 2010 that recommended an enhanced status quo acquisition approach for BEC. This approach begins with establishing the current capability as BEC Increment 0 at a Full Deployment Decision currently scheduled in FY12. This will be followed by BEC Increment 1, which will enter the Engineering and Manufacturing Development Phase of acquisition with a Milestone B in FY13. BEC Increment 1 will provide new capabilities beyond the current DoD Automated Biometric Identification System (DoD ABIS). To achieve these additional capabilities in a cost-effective and timely manner, the BEC Increment 1 evolutionary Acquisition Strategy will include agile acquisition processes approved by the PEO EIS that will allow the PM DoD Biometrics to provide multiple, rapid deliveries of incremental capabilities to the user for operational use and evaluation. PM DoD Biometrics has prepared a forward-looking Acquisition Strategy for the BEC Increment 1 Program that is compliant with the Department of Defense Instruction (DoDI) 5000.2 process, yet through tailoring is agile enough to provide rapid release of new capabilities to the user and Warfighter.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>	PROJECT DT2: <i>NON-MIP BIOMETRICS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Management Services	C/FFP	Various Locations:TBD	10.079	6.150		-		-		-	0.000	16.229	0.000
Subtotal			10.079	6.150		-		-		-	0.000	16.229	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/CPFF	Various:various	52.544	27.550		-		-		-	0.000	80.094	0.000
Subtotal			52.544	27.550		-		-		-	0.000	80.094	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Civilian Personnel	TBD	Alexandria, Virginia:Virginia	2.584	2.764		-		-		-	0.000	5.348	0.000
Subtotal			2.584	2.764		-		-		-	0.000	5.348	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	Army Test and Evaluation (ATEC); Joint Interoperability Test Command:Various Locations	0.574	0.987		-		-		-	0.000	1.561	0.000
Subtotal			0.574	0.987		-		-		-	0.000	1.561	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>			PROJECT DT2: <i>NON-MIP BIOMETRICS</i>					
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.781	37.451		-		-		-	0.000	103.232	0.000

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>	PROJECT DT2: <i>NON-MIP BIOMETRICS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Decision Memorandum (ADM) Signed	2	2011	2	2011
Full Deployment Decision / BEC Increment 0	4	2012	4	2012
Milestone B / BEC Increment 1	3	2013	3	2013
Engineering and Manufacturing (EMD) Phase	4	2013	3	2016
BEC Increment 1 (multiple releases)	4	2013	3	2016
Full Deployment Decision / BEC Increment 1	2	2016	2	2016
Milestone C / BEC Increment 1	3	2016	3	2016

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>	PROJECT DU2: <i>MANAGEMENT AGENCY</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DU2: <i>MANAGEMENT AGENCY</i>	-	8.060	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

This program was previously reported under PE 0303140A - Information Systems Security Program, Project 50B.

A. Mission Description and Budget Item Justification

The Biometrics Identity Management Agency (BIMA) acts as the DoD proponent for biometrics; leads in the development and implementation of biometric technologies for Combatant Commands (COCOMS), Services, and Agencies; delivers capabilities in order to contribute to the enhancement of the biometric community; increases Joint Service interoperability and; empowers the warfighter by improving operational effectiveness on the battlefield.

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

	FY 2011	FY 2012	FY 2013
<p>Title: BIMA</p> <p align="right">Articles:</p> <p>Description: Biometrics Identity Management Agency</p> <p>FY 2012 Plans: BIMA solicits proposals for Biometric Technology Demonstrations (BTDs) with specified focus areas tailored to address current operational needs and capability gaps. These BTDs promote the identification and transition of new or emergent biometric technologies that enhance biometrics-enabled capabilities in DoD. BIMA utilizes memberships in research and development organizations as well as the annual Multiple Biometric Grand Challenge event to investigate, test and improve performance of biometric technologies and capabilities. BIMA is required to use the Joint Interoperability Test Command to test biometric technologies and provide certification that biometric equipment is interoperable and can be utilized by all branches of the armed services and government. BIMA uses RDTE contract labor and development projects to directly impact the efficiency and operation of the Automated Biometric Identification System.</p>	-	8.060 0	-
Accomplishments/Planned Programs Subtotals	-	8.060	-

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607665A: <i>Biometrics Enterprise</i>	PROJECT DU2: <i>MANAGEMENT AGENCY</i>

D. Acquisition Strategy

C. Acquisition Strategy Support DoD Acquisition organizations in developmental testing, systems integration, and/or independent verification and validation of biometric 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 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0607865A: <i>Patriot Product Improvement</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	109.978	-	109.978	60.392	24.964	7.557	6.919	Continuing	Continuing
DV8: <i>PATRIOT PRODUCT IMPROVEMENT</i>	-	-	109.978	-	109.978	60.392	24.964	7.557	6.919	Continuing	Continuing

Note

Increase addresses Evolutionary Development Program (EDP) efforts for Patriot Product Improvement Program (PIP).

A. Mission Description and Budget Item Justification

Patriot is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. The Patriot Product Improvement Program upgrades the Patriot system to address operational lessons learned, enhancements to joint force interoperability, and other system performance improvements to provide overmatch capability with the emerging threat. Efforts will be made to expedite Patriot materiel solutions (e.g. Radar Digital Processor, Communications Upgrades, Radars on the Net) to both enhance capability and facilitate integration into the IAMD architecture.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	109.978	-	109.978
Total Adjustments	-	-	109.978	-	109.978
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	109.978	-	109.978

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607865A: <i>Patriot Product Improvement</i>	PROJECT DV8: <i>PATRIOT PRODUCT IMPROVEMENT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DV8: <i>PATRIOT PRODUCT IMPROVEMENT</i>	-	-	109.978	-	109.978	60.392	24.964	7.557	6.919	Continuing	Continuing
Quantity of RDT&E Articles											

Note

This is not a new start - continues effort funded in PE 0203801A (Project 036).

A. Mission Description and Budget Item Justification

Patriot is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. These improvements focus on the evolving threat and will provide a more robust capability and the foundation upon which future improvements can more readily be incorporated with minimal hardware changes. Efforts will be made to expedite Patriot materiel solutions (e.g. Radar Digital Processor, Communications Upgrades, Radars on the Net) to both enhance capability and facilitate integration into the IAMD architecture.

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

	FY 2011	FY 2012	FY 2013
Title: Patriot Product Improvement	-	-	109.978
Description: Software Improvement for Threat Evolution			
FY 2013 Plans: Continues Software Improvement for Threat Evolution. Radar Digital Processor continues development efforts to support US FY 2016 Fielding, providing the field with additional capability and growth potential to counter stressing threats. Increases address Evolutionary Development Program (EDP) efforts and Electronic Counter Measures (ECM).			
Accomplishments/Planned Programs Subtotals	-	-	109.978

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

N/A

D. Acquisition Strategy

The design objective of the Patriot system was to provide a baseline system capable of modification to cope with continuing threat evolution. This program minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The Patriot Product Improvement program upgrades the Patriot system to address operational lessons learned, enhancements to joint force interoperability and communications, and other system performance

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0607865A: <i>Patriot Product Improvement</i>	DV8: <i>PATRIOT PRODUCT IMPROVEMENT</i>

improvements to provide overmatch capability against the emerging threat. Upgrades are implemented through individual hardware and software materiel changes and fielded incrementally. This program encompasses several changes which will require the use of a variety of acquisition methods to develop, test, procure and field.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607865A: <i>Patriot Product Improvement</i>	PROJECT DV8: <i>PATRIOT PRODUCT IMPROVEMENT</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	RSA:Various	-	-		0.538		-		0.538	Continuing	Continuing	0.000
U.S. Contracts	C/FFP	Intuitive Research and Technology Corp. (IRTC):Huntsville, AL	-	-		0.361		-		0.361	Continuing	Continuing	0.000
Subtotal			-	-		0.899		-		0.899			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Improvement for Threat Evolution	Various	Multiple:Multiple	-	-		9.986		-		9.986	Continuing	Continuing	0.000
Radar Digital Processor	Various	Raytheon:Massachusetts	-	-		32.200		-		32.200	Continuing	Continuing	0.000
THAAD PATRIOT Interoperability	SS/FFP	Raytheon:Massachusetts	-	-		6.800		-		6.800	Continuing	Continuing	0.000
Advanced Electronic Counter Measures	SS/FFP	Raytheon:Massachusetts	-	-		16.000		-		16.000	Continuing	Continuing	0.000
Internet Protocol Commo Phase 1	SS/FFP	Raytheon:Massachusetts	-	-		3.181		-		3.181	0.000	3.181	0.000
Evolutionary Development Program (EDP)	SS/FFP	Raytheon:Massachusetts	-	-		35.700		-		35.700	Continuing	Continuing	0.000
Upper Tier Debris Mitigation (UTDM)	SS/FFP	Raytheon:Massachusetts	-	-		4.800		-		4.800	0.000	4.800	0.000
Subtotal			-	-		108.667		-		108.667			0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607865A: <i>Patriot Product Improvement</i>	PROJECT DV8: <i>PATRIOT PRODUCT IMPROVEMENT</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PDB 7 Fielding (Modernized Adjunct Processor) IOC																												
Radar Digital Processor Development																												
PDB 8 (RDP) IOC																												
Evolutionary Development Program																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0607865A: <i>Patriot Product Improvement</i>	PROJECT DV8: <i>PATRIOT PRODUCT IMPROVEMENT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PDB 7 Fielding (Modernized Adjunct Processor) IOC	1	2013	1	2013
Radar Digital Processor Development	1	2012	4	2014
PDB 8 (RDP) IOC	1	2016	1	2016
Evolutionary Development Program	1	2013	4	2015

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	399.477	327.338	190.422	-	190.422	95.515	32.480	24.130	24.612	Continuing	Continuing
E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>	399.477	327.338	190.422	-	190.422	95.515	32.480	24.130	24.612	Continuing	Continuing

Note

Fiscal Year (FY) 2011: JLENS was increased \$40.350 million to fund the Secretary of Defense directed Combatant Command (COCOM) Exercise extended test program.

FY 2012: JLENS was reduced \$16.800 million to fund other higher priorities.

FY 2013: JLENS was increased \$34.001 million to fund the Secretary of Defense directed COCOM Exercise extended test program.

A. Mission Description and Budget Item Justification

Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) is a supporting program of the Army and Joint Integrated Air and Missile Defense, providing a persistent surveillance and tracking capability for Unmanned Aerial Vehicle and Cruise Missile defense to the current and projected defense forces. JLENS will provide fire control quality data to Surface to Air missile systems such as Army Patriot and Navy Aegis; increasing the weapons' capabilities by allowing these systems to engage targets normally below, outside or beyond surface based weapons' field of view. Additionally, JLENS provides this fire control quality data to fighter aircraft allowing them to engage hostile threats from extended ranges.

As a secondary role JLENS also detects and tracks Surface Moving Targets. The Program Manager may defer integration of the JLENS secondary roles to provide Launch Point Estimate for Tactical Ballistic Missiles and Large Caliber Rockets, based on Secretary of Defense direction to participate in and conduct an extended test program as part of a Combatant Command Exercise in FY 2012. JLENS supports military operations across the full spectrum of conflict.

A JLENS Orbit consists of two systems: a fire control radar system and a wide-area surveillance radar system. Each radar system employs a separate 74-meter tethered aerostat, mobile mooring station, radar and communications payload, processing station, and associated ground support equipment. JLENS uses advanced sensor and networking technologies to provide 360-degree, wide-area surveillance and precision target tracking. This JLENS information is distributed via joint service networks and contributes to the development of a single integrated air picture.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	372.493	344.655	156.421	-	156.421
Current President's Budget	399.477	327.338	190.422	-	190.422
Total Adjustments	26.984	-17.317	34.001	-	34.001
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-11.039	-			
• Adjustments to Budget Years	-	-	34.001	-	34.001
• Congressional General Reductions	-2.327	-0.517	-	-	-
• Congressional Directed Reductions	-	-16.800	-	-	-
• Other Adjustments 3	40.350	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>				PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>	399.477	327.338	190.422	-	190.422	95.515	32.480	24.130	24.612	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) is a supporting program of the Army and Joint Integrated Air and Missile Defense, providing a persistent surveillance and tracking capability for Unmanned Aerial Vehicle and Cruise Missile defense to the current and projected defense forces. JLENS will provide fire control quality data to Surface to Air missile systems such as Army Patriot and Navy Aegis; increasing the weapons' capabilities by allowing these systems to engage targets normally below, outside or beyond surface based weapons' field of view. Additionally, JLENS provides this fire control quality data to fighter aircraft allowing them to engage hostile threats from extended ranges.

As a secondary role JLENS also detects and tracks Surface Moving Targets. The Program Manager may defer integration of the JLENS secondary roles to provide Launch Point Estimate for Tactical Ballistic Missiles and Large Caliber Rockets, based on Secretary of Defense direction to participate in and conduct an extended test program as part of a Combatant Command (COCOM) Exercise in FY 2012. JLENS supports military operations across the full spectrum of conflict.

A JLENS Orbit consists of two systems: a fire control radar system and a wide-area surveillance radar system. Each radar system employs a separate 74-meter tethered aerostat, mobile mooring station, radar and communications payload, processing station, and associated ground support equipment. JLENS uses advanced sensor and networking technologies to provide 360-degree, wide-area surveillance and precision target tracking. This JLENS information is distributed via joint service networks and contributes to the development of a single integrated air picture.

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

	FY 2011	FY 2012	FY 2013
Title: Engineering and Manufacturing Development (EMD) phase contract activity	321.386	187.046	113.958
Articles:	0	0	
Description: Continue EMD phase contract activities.			
FY 2011 Accomplishments: Complete integration of system hardware components and system level integration. Continue software development, integration and test. Deliver Orbits 1 and 2 to test sites. Initiate planning and preparation for the Secretary of Defense directed COCOM Exercise extended test program.			
FY 2012 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Complete software development, integration and test, initiate Developmental Testing (DT), conduct user training, will execute Integrated Fire Control (IFC) shot with Patriot, conduct Navy Integrated Fire Control-Counter Air (NIFC-CA) tracking test and conduct NIFC-CA Live Fire demonstration. Execute the Secretary of Defense directed COCOM Exercise extended test program.</p> <p>FY 2013 Plans: Complete DT, conduct Limited User Test (LUT), conduct Logistics Demonstration, conduct Climactic Testing, and incorporate system improvements resulting from testing. Continue execution of the Secretary of Defense directed Combatant Command (COCOM) Exercise extended test program.</p>				
<p>Title: Government System Test and Evaluation (STE)</p> <p>Articles:</p> <p>Description: Government STE program in support of Engineering and Manufacturing Development (EMD).</p> <p>FY 2011 Accomplishments: Orbits 1 and 2 will be delivered to test sites. Initiate planning and preparation for the Secretary of Defense directed COCOM Exercise extended test program.</p> <p>FY 2012 Plans: Initiate Developmental Testing (DT), conduct user training, will execute Integrated Fire Control (IFC) shot with Patriot, conduct Navy Integrated Fire Control-Counter Air (NIFC-CA) tracking test and conduct NIFC-CA Live Fire demonstration. Execute the Secretary of Defense directed COCOM Exercise extended test program.</p> <p>FY 2013 Plans: Complete DT, conduct Limited User Test (LUT) conduct Logistics Demonstration, and conduct Climactic Testing. Continue execution of the Secretary of Defense directed COCOM Exercise extended test program</p>		22.101 0	51.852 0	25.710
<p>Title: EMD Phase Other Contractor/Other Government Agencies (OGAs) Support</p> <p>Articles:</p> <p>Description: Other contracts and OGAs support of EMD phase activities. Perform technical assessments, concept studies, cost reduction, risk reduction and required documentation.</p> <p>FY 2011 Accomplishments: Continue support of EMD activities. Support completion of integration of system hardware components and system level integration. Continue to support software development, integration and test. Support delivery of Orbits 1 and 2 to test sites. Perform technical assessments, concept studies, cost reduction, risk reduction and required documentation.</p> <p>FY 2012 Plans:</p>		44.871 0	56.963 0	44.370

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Continue support of EMD activities. Support the completion of software development, integration and test. Support initialization of DT and user training. Perform technical assessments, concept studies, cost reduction, risk reduction and required documentation. FY 2013 Plans: Continue support of EMD activities, incorporating system improvements identified during testing. Continue to support DT and conduct of LUT. Perform technical assessments, concept studies, cost reduction, risk reduction and required documentation.				
Title: Government Program Management (PM) Support		2.445	3.300	2.929
Description: Provide Government PM support of EMD activities.		Articles: 0	0	
FY 2011 Accomplishments: Continue Government PM support of EMD activities. Manage completion of integration of system hardware components and system level integration. Continue management of software development, integration and test. Manage the delivery of Orbits 1 and 2 to test sites. Provide PM oversight of the planning and preparation for the Secretary of Defense directed Combatant Command (COCOM) Exercise extended test program.				
FY 2012 Plans: Continue Government Program Management (PM) support of Engineering and Manufacturing Development (EMD) activities. Manage completion of software development, integration and test. Provide management oversight of Developmental Testing (DT), conduct of user training, execution of Integrated Fire Control (IFC) shot with Patriot, conduct of Navy Integrated Fire Control-Counter Air (NIFC-CA) tracking test and conduct of NIFC-CA Live Fire demonstration. Provide PM oversight of the execution of the Secretary of Defense directed COCOM Exercise extended test program.				
FY 2013 Plans: Continue Government PM support of EMD activities. Continue management of DT, conduct of Limited User Test (LUT), conduct of Logistics Demonstration, and conduct of Climactic Testing. Continue PM oversight of the execution of the Secretary of Defense directed COCOM Exercise extended test program.				
Title: Government Furnished Equipment (GFE) Intergration		8.674	9.527	3.455
Description: The GFE provided to the Prime Contractor for hardware and system integration.		Articles: 0	0	
FY 2011 Accomplishments: The GFE provided to the Prime Contractor for hardware and system integration.				
FY 2012 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
The Government Furnished Equipment (GFE) provided to the Prime Contractor for hardware and system integration.			
FY 2013 Plans: The GFE provided to the Prime Contractor for hardware and system integration.			
Title: Organizational Support Equipment (OSE) Articles:	-	18.650 0	-
Description: The OSE required for Operational Testing (OT) of Engineering and Manufacturing Development (EMD) Orbit 1.			
FY 2012 Plans: Acquisition of the OSE required for OT of EMD Orbit 1.			
Accomplishments/Planned Programs Subtotals	399.477	327.338	190.422

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0604869A, Proj M06: <i>Proj M06, Patriot/MEADS Combined Aggregate Program (CAP)</i>	450.584	389.630	400.861		400.861					Continuing	Continuing
• PE 0605456A, Proj PA3: <i>Proj PA3, PAC-3/MSE Missile</i>	121.475	88.909	69.029		69.029		130.348	63.975	65.771	Continuing	Continuing
• SSN C53101: <i>MSE Missile</i>		74.953	12.850		12.850		505.084	596.387	566.757	Continuing	Continuing
• Proj E55: <i>Proj E55, JLENS</i>	399.477	327.338	190.422		190.422		24.130	24.612		Continuing	Continuing
• PE 0605455A, Proj S35: <i>Proj, S35, SLAMRAAM</i>	18.358	1.529								Continuing	Continuing
• SSN C81002: <i>SLAMRAAM Launcher</i>	2.355									Continuing	Continuing
• PE 0604319A Proj DU3: <i>Proj DU3, IFPC2 (FY 20011/2012 PE0603305A IFPC II-Intercept)</i>	4.143	9.269	76.039		76.039		122.355	146.463	151.769	Continuing	Continuing
• SSN WK5053: <i>FAAD GBS</i>	258.413	3.958	7.980		7.980					Continuing	Continuing
• PE 0605457A, Proj S40: <i>Proj S40, Army Integrated Air and Missile Defense (AIAMD)</i>	246.691	270.180	262.211		262.211		394.260	210.580	135.072	Continuing	Continuing

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SSN ZBZ5075: <i>Army IAMD Battle Command System (IBCS)</i>							103.051	281.828	426.582	Continuing	Continuing
• PE 0208053, Proj 635: <i>Proj 635, JOINT TACT GRD STATION-P3I (MIP)</i>	12.005	27.586	31.738		31.738		8.006	8.134	8.314	Continuing	Continuing
• SSN BZ8401: <i>Joint Tactical Ground Station (JTAGS)</i>	9.227	1.199	2.680		2.680		4.432	4.496	4.768	Continuing	Continuing
• PE 0604820A, Proj E10: <i>Proj E10, SENTINEL</i>		2.885	3.486		3.486		1.948	2.972	3.022	Continuing	Continuing

D. Acquisition Strategy

The JLENS Operational Requirements Document (ORD) calls for initial fielding to Block I requirements (tethered aerostat platforms for Fire Control and Surveillance radars), followed by fielding of Block II (untethered platforms for Fire Control and Surveillance radars), and Block III (both radars on a single untethered platform). There is currently no funding beyond Block I.

On 28 Jun 05, the Defense Acquisition Board (DAB) approved the JLENS program for entry into Engineering and Manufacturing Development (EMD) as recommended by the Army Acquisition Executive. The DAB elected to maintain oversight of JLENS as an Acquisition Category (ACAT) 1D program as stated in the Acquisition Decision Memorandum signed on August 5, 2005.

In June 2011, the Secretary of Defense directed JLENS to participate in and conduct an extended test program in support of the Combatant Command (COCOM). Initial funding of \$40.350 million was reprogrammed into FY 2011. The President's Budget FY 2013 includes funding to support extending the EMD phase and to continue the COCOM Exercise extended test program.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EMD Government Program Management	Various	PEO Missiles and Space:Various	19.116	3.300		2.929		-		2.929	Continuing	Continuing	Continuing
Subtotal			19.116	3.300		2.929		-		2.929			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development (TD) Phase Contracts and Government	Various	Various:Multiple	301.083	-		-		-		-	Continuing	Continuing	Continuing
Contractor Engineering and Manufacturing Development (EMD) Hardware/Software	SS/CPIF	Raytheon Systems Co.:Andover, MA	1,450.769	150.257		62.588		-		62.588	Continuing	Continuing	Continuing
EMD Other Government Agency System Engineering/Logistics	Various	Multiple:Various	36.583	17.662		15.872		-		15.872	Continuing	Continuing	Continuing
Lightweight X-Band Radar Antenna	Various	Various:Various	7.811	-		-		-		-	Continuing	Continuing	Continuing
EMD System Engineering/Logistics Contracts	Various	Multiple:Various	123.344	39.301		28.498		-		28.498	Continuing	Continuing	Continuing
EMD Government Furnished Equipment (GFE) Various	Various	Multiple:Various	22.561	2.829		1.455		-		1.455	Continuing	Continuing	Continuing
EMD GFE - Cooperative Engagement Transmission Processing Set (CETPS)	Various	Multiple:Various	35.102	6.698		2.000		-		2.000	Continuing	Continuing	Continuing
EMD Organizational Support Equipment	Various	Multiple:Various	-	18.650		-		-		-	Continuing	Continuing	Continuing
Subtotal			1,977.253	235.397		110.413		-		110.413			

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>
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Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
TD Phase Miscellaneous Support	Various	Various:Multiple	2.084	-		-		-		-	Continuing	Continuing	Continuing	
Subtotal			2.084	-		-		-		-				

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Technology Development (TD) Phase Test Bed Maintenance	SS/CPFF	Clark and Stender (CAS), Inc.:TX/NM	3.056	-		-		-		-	Continuing	Continuing	Continuing	
Engineering and Manufacturing Development (EMD) Contractor System Test and Evaluation	SS/CPIF	Raytheon Systems Co.:MA/CA/FL/TX	66.365	36.789		25.207		-		25.207	Continuing	Continuing	Continuing	
EMD Government System Test and Evaluation	Various	Multiple:Various	67.792	51.852		21.451		-		21.451	Continuing	Continuing	Continuing	
Combatant Command (COCOM)Exercise- Contractor	SS/CPIF	Raytheon Systems Co.:MA/CA/FL/TX	36.315	-		26.163		-		26.163	Continuing	Continuing	Continuing	
COCOM Exercise-Government	Various	Multiple:Various	4.035	-		4.259		-		4.259	Continuing	Continuing	Continuing	
Subtotal			177.563	88.641		77.080		-		77.080				

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total		Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		2,176.016	327.338		190.422		-		190.422			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Orbit 1 Delivery to Test			■																									
Orbit 2 Delivery to Test				■																								
Developmental Test (DT) 1					■																							
Electromagnetic Environmental Effects (E3) Test						■	■	■																				
Transportation and Mobility (T&M) Test						■	■	■																				
Integrated Fire Control (IFC) Test							■																					
Navy Integrated Fire Control-Counter Air (NIFC-CA) Demonstration								■																				
Developmental Test 2									■																			
Limited User Test (LUT)									■	■																		
Logistics Demonstration										■	■	■																
Climactic Testing											■	■																
March Order and Emplacement (MO&E) Test													■															
Initial Operational Test and Evaluation (IOT&E)													■	■														
Combatant Command (COCOM) Exercise			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0102419A: <i>Aerostat Joint Project Office</i>	PROJECT E55: <i>Jnt Land Atk Msl Def Elevated Netted Sensor-JLENS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Orbit 1 Delivery to Test	3	2011	3	2011
Orbit 2 Delivery to Test	4	2011	4	2011
Developmental Test (DT) 1	1	2012	1	2012
Electrosmagnetic Environmental Effects (E3) Test	2	2012	4	2012
Transportation and Mobility (T&M) Test	2	2012	1	2013
Integrated Fire Control (IFC) Test	3	2012	3	2012
Navy Integrated Fire Control-Counter Air (NIFC-CA) Demonstration	4	2012	4	2012
Developmental Test 2	1	2013	1	2013
Limited User Test (LUT)	1	2013	2	2013
Logistics Demonstration	2	2013	3	2013
Climactic Testing	4	2013	1	2014
March Order and Emplacement (MO&E) Test	2	2014	2	2014
Initial Operational Test and Evaluation (IOT&E)	2	2014	3	2014
Combatant Command (COCOM) Exercise	4	2011	4	2017

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

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0203347A: <i>Intelligence Support to Cyber (ISC) - MIP</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.283	-	-	-	-	-	-	-	-	Continuing	Continuing
CY7: <i>INTELLIGENCE SUPPORT TO CYBER (ISC) MIP</i>	2.283	-	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Mission Description: INSCOM conducts Research, Development, Testing, and Evaluation (RDTE) of rapid prototype cyber ttack weapons systems in support of full-spectrum military operations. INSCOM's cyber weapons are low-density or non-standard items whose requirements have been Army G3/5/7 or Joint validated and are not in development by acquisition technology developers or system program managers. Justification: INSCOM executes its assigned RDTE mission in compliance with AR 10-87, 70-1, 71-9 and 700-142; CJCSI 3170.01E and O-3600.1; Army Cyberspace OPLAN 8039, and HQDA Cyberspace EXORD 155-10. INSCOM's rapid Cyber weapons systems developments are based on national, strategic, operational, and tactical requirements outlined in NSPD-38/54, HSPD-23, National Strategic Plan for United States Offensive Cyber Operations, National Strategy to Secure Cyberspace, National Military Strategy for Cyberspace Operations, Comprehensive National Cybersecurity Initiative, USSTRATCOM CONPLAN 8039, and COCOM Joint Urgent/Operational Needs Statements. Priority of effort is given to requirements that are immediately traceable to land component command operations. Risk/Funding: Not funding INSCOM's RDTE program severely degrades the Army's ability to provide Combatant Commanders with critical warfighting capabilities, resulting in additional risks of failure to Army operational missions or increased costs in Soldier lives and fighting capability due to loss of combat advantages provided through this program.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	2.360	-	-	-	-
Current President's Budget	2.283	-	-	-	-
Total Adjustments	-0.077	-	-	-	-
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-	-	-	-	-
• SBIR/STTR Transfer	-	-	-	-	-
• Other Adjustments 1	-0.077	-	-	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203347A: <i>Intelligence Support to Cyber (ISC) - MIP</i>	PROJECT CY7: <i>INTELLIGENCE SUPPORT TO CYBER (ISC) MIP</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
CY7: <i>INTELLIGENCE SUPPORT TO CYBER (ISC) MIP</i>	2.283	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Mission Description: INSCOM conducts Research, Development, Testing, and Evaluation (RDTE) of rapid prototype cyber tttack weapons systems in support of full-spectrum military operations. INSCOM's cyber weapons are low-density or non-standard items whose requirements have been Army G3/5/7 or Joint validated and are not in development by acquisition technology developers or system program managers. Justification: INSCOM executes its assigned RDTE mission in compliance with AR 10-87, 70-1, 71-9 and 700-142; CJCSI 3170.01E and O-3600.1; Army Cyberspace OPLAN 8039, and HQDA Cyberspace EXORD 155-10. INSCOM's rapid Cyber weapons systems developments are based on national, strategic, operational, and tactical requirements outlined in NSPD-38/54, HSPD-23, National Strategic Plan for United States Offensive Cyber Operations, National Strategy to Secure Cyberspace, National Military Strategy for Cyberspace Operations, Comprehensive National Cybersecurity Initiative, USSTRATCOM CONPLAN 8039, and COCOM Joint Urgent/Operational Needs Statements. Priority of effort is given to requirements that are immediately traceable to land component command operations.

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

	FY 2011	FY 2012	FY 2013
Title: Military Intelligence Program	2.283	-	-
Articles:	0		
Description: This is a Military Intelligence Program			
FY 2011 Accomplishments: Classified MIP			
Accomplishments/Planned Programs Subtotals	2.283	-	-

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

N/A

D. Acquisition Strategy

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203347A: <i>Intelligence Support to Cyber (ISC) - MIP</i>	PROJECT CY7: <i>INTELLIGENCE SUPPORT TO CYBER (ISC) MIP</i>

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	23.812	29.500	32.556	-	32.556	33.014	30.238	28.483	28.531	Continuing	Continuing
322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>	18.202	18.011	23.961	-	23.961	22.088	19.877	18.967	19.148	Continuing	Continuing
F19: <i>JADOCS</i>	5.610	11.489	8.595	-	8.595	10.926	10.361	9.516	9.383	Continuing	Continuing

Note

The decreases in FY 2011 of \$0.810 million and FY 2012 of \$0.046 million was a result of changes in budget position.

The increase in FY 2013 funding of \$5.000 million is to fund requirements for GPS-based Precision Guided Munitions (PGMs) require pre-launch loading of sufficient GPS Satellite related data down at the Weapon Platform level to enable Precision Capable Fires. The increase of \$3.108 million is to fund requirements for Joint Automated Deep Operation Coordination System (JADOCS) Capability Production Document (CPD) which is currently being staffed at Joint Requirements Oversight Council (JROC).

A. Mission Description and Budget Item Justification

The Advanced Field Artillery Tactical Data System (AFATDS) automates fire support planning and coordination for the Army, Navy, and Marine Corps. AFATDS automates the planning, coordinating and controlling of all fire support assets in the Joint battlespace (field artillery, mortars, close air support, naval gunfire, attack helicopters, and offensive electronic warfare) from Echelons Above Corps to Battery or Platoon in support of all levels of conflict. As a result of Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), AFATDS has implemented precision fires capabilities in new/improved munitions such as Multiple Launch Rocket System (MLRS) Unitary Vertical Attack, Excalibur, Smart and 155 Bonus. Additional implemented capabilities include automatic conduct of Unit Fratricide Avoidance Checks and Collateral Damage Avoidance. AFATDS will interoperate with the other Army Battle Command Systems, current and future Army, Navy and USAF Command and Control weapon systems, and the German, French, Turkish, and Italian fire support systems. The system is composed of common hardware/software employed in varying configurations at different operational facilities (or nodes) and unique system software interconnected by tactical communications in the form of a software-driven, automated network. The system is currently fielding non-developmental, rugged common hardware, running the Windows Operating System. The total force will be fielded a Windows based platform by fiscal year 2013.

Joint Automated Deep Operations Coordination System (JADOCS) is a Joint, Interagency, and Multinational (JIM) Targeting, Mission Management, and Common Operational Picture (COP) Windows based software suite which functions as a complementary system to the AFATDS. JADOCS provides integration and synergy between multiple Command & Control (C2) systems of the uniformed services, and Joint and combined elements involved in the targeting process and performs coordination and calculates collateral damage. JADOCS Mission Managers support this coordination amongst Warfighter functional areas to rapidly execute critical missions. JADOCS is a component of the Integrated Fires Family of Systems (FOS) and complementary to the Army Battle Command Systems (ABCS) System of Systems (SoS).

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>
BA 7: <i>Operational Systems Development</i>	

GPS-based Precision Guided Munitions (PGMs) require pre-launch loading of sufficient GPS Satellite related data down at the Weapon Platform level to enable Precision Capable? Fires. This hot?start capability allows for rapid post-launch time-to-first-fix of GPS signal and maximum utilization of PGM maneuver authority to insure required target engagement performance. This is especially critical for short times of flight and steer-early solutions such as Mortar and Cannon based PGMs. Local GPS Satellite visibility challenges due vertical terrain/complex environment issues during normal combat operations can prohibit ?Precision Capable? Fires when using GPS Satellite data generated exclusively at the Firing Weapon Platform. A system-of-systems Network Assisted GPS capability will be developed, integrated, and validated to overcome local GPS Satellite masking problems through the sharing of sufficient timely required GPS Satellite data via Wide-Area Network (WAN) and Local-Area Network (LAN) based materiel solutions that effectively and efficiently leverage mature Technologies and sunk taxpayer investments of existing Programs of Record.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	24.622	29.546	24.448	-	24.448
Current President's Budget	23.812	29.500	32.556	-	32.556
Total Adjustments	-0.810	-0.046	8.108	-	8.108
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-0.810	-0.046	-	-	-
• Other Adjustments 2	-	-	5.000	-	5.000
• Other Adjustments 3	-	-	3.108	-	3.108

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT 322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>	18.202	18.011	23.961	-	23.961	22.088	19.877	18.967	19.148	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Advanced Field Artillery Tactical Data System (AFATDS) automates fire support planning and coordination for the Army, Navy, and Marine Corps. AFATDS automates the planning, coordinating and controlling of all fire support assets in the Joint battlespace (field artillery, mortars, close air support, naval gunfire, attack helicopters, and offensive electronic warfare) from Echelons Above Corps to Battery or Platoon in support of all levels of conflict. As a result of Operation Iraqi Freedom (OIF)/Operation Enduring Freedom (OEF), AFATDS has implemented precision fires capabilities in new/improved munitions such as Multiple Launch Rocket System (MLRS) Unitary Vertical Attack, Excalibur, Smart and 155 Bonus. Additional implemented capabilities include automatic conduct of Unit Fratricide Avoidance Checks and Collateral Damage Avoidance. AFATDS will interoperate with the other Army Battle Command Systems, current and future Army, Navy and USAF Command and Control weapon systems, and the German, French, Turkish, and Italian fire support systems. The system is composed of common hardware/software employed in varying configurations at different operational facilities (or nodes) and unique system software interconnected by tactical communications in the form of a software-driven, automated network. The system is currently fielding non-developmental, rugged common hardware, running the Windows Operating System. The total force will be fielded a Windows based platform by fiscal year 2013.

GPS-based Precision Guided Munitions (PGMs) require pre-launch loading of sufficient GPS Satellite related data down at the Weapon Platform level to enable ? Precision Capable? Fires. This ?hot? start capability allows for rapid post-launch time-to-first-fix of GPS signal and maximum utilization of PGM maneuver authority to insure required target engagement performance. This is especially critical for short times of flight and steer-early solutions such as Mortar and Cannon based PGMs. Local GPS Satellite visibility challenges due vertical terrain/complex environment issues during normal combat operations can prohibit ?Precision Capable? Fires when using GPS Satellite data generated exclusively at the Firing Weapon Platform. A system-of-systems Network Assisted GPS capability will be developed, integrated, and validated to overcome local GPS Satellite masking problems through the sharing of sufficient timely required GPS Satellite data via Wide-Area Network (WAN) and Local-Area Network (LAN) based materiel solutions that effectively and efficiently leverage mature Technologies and sunk taxpayer investments of existing Programs of Record.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Program Support Costs for AFATDS software development	1.087	0.905	0.919	-	0.919
Articles:	0	0			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army				DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>		PROJECT 322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)					
Description: Provide program support for AFATDS software development efforts for Versions 6.7, 6.8, and 6.8.X					
FY 2011 Accomplishments: Funded program support for AFATDS software development efforts					
FY 2012 Plans: Continue program support for AFATDS software development efforts					
FY 2013 Base Plans: Future program support for AFATDS software development efforts					
Title: AFATDS software development efforts costs					
Articles:					
	14.642	14.456	15.167	-	15.167
	0	0			
Description: Complete development of Versions 6.7 and 6.8. Intitate development of 6.8.X					
FY 2011 Accomplishments: Complete AFATDS software development versions 6.7 and continue AFATDS software development version 6.8.					
FY 2012 Plans: Complete AFATDS software development version 6.8 and initiate AFATDS software development version 6.8.X					
FY 2013 Base Plans: Continue AFATDS software development efforts for Version 6.8.X					
Title: Network Assisted GPS for Precision Fires					
Description: Intitate development of Network Assisted GPS for Precision Fires.					
FY 2013 Base Plans: Definition of system architecture and standardized tactical GPS Satellite data exchange solutions. Initiate WAN and LAN based system-of-systems Network Assisted GPS capability for PGMs.					
Title: Testing					
	2.473	2.650	2.875	-	2.875
	0	0			

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT 322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Conduct and support test activities</p> <p>FY 2011 Accomplishments: Conduct and support AFATDS test activities.</p> <p>FY 2012 Plans: Conduct and support AFATDS test activities.</p> <p>FY 2013 Base Plans: Conduct and support AFATDS test activities.</p>					
Accomplishments/Planned Programs Subtotals	18.202	18.011	23.961	-	23.961

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• B28600: <i>ADV FA TAC DATA SYS</i>	17.216	2.851								0.000	20.067
• B28620: <i>MOD OF IN-SVC EQUIP, AFATDS</i>	35.408	37.070	35.556	6.260	41.816		10.310	10.206	10.383	Continuing	Continuing

D. Acquisition Strategy

AFATDS began fielding in 1996, with the original AFATDS Version 96 Materiel Release. It has been updated with subsequent releases reflecting the Spiral development strategy of the program. Full Materiel Release of AFATDS V6.6 (First Windows version) was achieved in June 2010. Full Materiel Release of AFATDS V6.7 was achieved in January 2011. AFATDS V6.8 is being developed and expects to achieve Full Materiel Release in 1Q FY2013.

Development efforts will continue to enhance Command and Control for precision weapons, Excalibur Height above Ellipsoid (HAE), Active Weapon Target pairing and Unexploded Ordnance (UXO) area computations. It will also provide backward interoperability to Pass and Subscribe Services (PASS) and AFATDS XML Engine (AXE) for Software Block 2 (SWB2) to enable connection to SWB1/1+ versions.

In April 2011, the program office presented a Capability Development Document (CDD) for the AFATDS Increment II development effort to the Joint Capabilities Board panel. In June 2011, the program received the final approval memorandum of the CDD from the Joint Requirements Oversight Council (JROC). Currently, the program office is working to achieve a Milestone B (MS B) decision. Upon completion of the MS B decision, the execution of the Increment II requirements as specified in the CDD will begin.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT 322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT 322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	SS/Various	PM Mission Command (MC):APG, MD	16.274	0.825		0.829		-		0.829	Continuing	Continuing	Continuing
Subtotal			16.274	0.825		0.829		-		0.829			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	SS/CPAF	Raytheon Systems Corp.:Ft. Wayne, IN	311.020	4.155		-		-		-	0.000	315.175	310.361
Software Development	C/CPFF	TBD:TBD	-	10.301		15.167		-		15.167	Continuing	Continuing	Continuing
Network Assisted GPS for Precision Fires Development	C/TBD	TBD:TBD	-	-		5.000		-		5.000	Continuing	Continuing	0.000
Subtotal			311.020	14.456		20.167		-		20.167			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Information Assurance	C/Various	CSC:Eatontown, NJ	0.340	0.035		-		-		-	0.000	0.375	0.375
Information Assurance	C/CPFF	TBD:TBD	-	0.045		0.090		-		0.090	Continuing	Continuing	Continuing
Subtotal			0.340	0.080		0.090		-		0.090			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	C/BA	Titan and various contractors:Various Locations	3.418	0.745		-		-		-	0.000	4.163	5.055

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT 322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Materiel Release V6.7 (CS 11 - 12)	■																											
Fielding V6.7 (CS 11 - 12)	■	■	■	■																								
Materiel Release V6.8 (CS 13 - 14)											■	■																
Fielding V6.8 (CS 13 - 14)											■	■																
Milestone (MS) B								■																				
Development and Testing V6.8.X (CS 15 - 16)							■	■	■	■	■	■																
Materiel Release V6.8.X (CS 15 - 16)															■	■												
Fielding V6.8.X (CS 15 - 16)															■	■												
Development and Testing V6.9 (CS 17 - 18)															■	■	■	■	■	■								
Materiel Release V6.9 (CS 17 - 18)																											■	■
Fielding V6.9 (CS 17 - 18)																											■	■
Development /Testing Network Assisted GPS for Precision Fires											■	■	■	■	■	■												
Materiel Release Network Assisted GPS for Precision Fires																				■	■							
Fielding Network Assisted GPS for Precision Fires																				■	■							

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT 322: <i>Adv Fa Tac Data Sys/Eff Cntrl Sys (AFATDS/ECS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Materiel Release V6.7 (CS 11 - 12)	2	2011	2	2011
Fielding V6.7 (CS 11 - 12)	2	2011	4	2011
Materiel Release V6.8 (CS 13 - 14)	1	2013	1	2013
Fielding V6.8 (CS 13 - 14)	1	2013	2	2013
Milestone (MS) B	4	2012	4	2012
Development and Testing V6.8.X (CS 15 - 16)	2	2012	4	2014
Materiel Release V6.8.X (CS 15 - 16)	1	2015	1	2015
Fielding V6.8.X (CS 15 - 16)	1	2015	2	2015
Development and Testing V6.9 (CS 17 - 18)	1	2014	4	2016
Materiel Release V6.9 (CS 17 - 18)	1	2017	1	2017
Fielding V6.9 (CS 17 - 18)	1	2017	2	2017
Development /Testing Network Assisted GPS for Precision Fires	1	2013	4	2015
Materiel Release Network Assisted GPS for Precision Fires	1	2016	1	2016
Fielding Network Assisted GPS for Precision Fires	1	2016	2	2016

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT F19: <i>JADOCS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
F19: <i>JADOCS</i>	5.610	11.489	8.595	-	8.595	10.926	10.361	9.516	9.383	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Joint Automated Deep Operations Coordination System (JADOCS) is a Joint, Interagency, and Multinational (JIM) Targeting, Mission Management, and Common Operational Picture (COP) Windows-based software suite which functions as a complementary system to the Advanced Field Artillery Tactical Data System (AFATDS). JADOCS provides integration and synergy between multiple Command & Control (C2) systems of the uniformed services, and joint and combined elements involved in the targeting process and performs coordination and calculates collateral damage. JADOCS Mission Managers support this coordination amongst Warfighter functional areas to rapidly execute critical missions. JADOCS enables coordination and de-confliction of conventional and asymmetric war-fighting missions. JADOCS uses a map-oriented Graphical User Interface (GUI) and overlays as a framework for information display. JADOCS is fielded to Air Force, Navy, Marine, and Army units involved in the targeting process at Echelons Above Corps, Corps, and Division. JADOCS provides the Combatant Commands with the capability to plan and direct theater counter-fire and precision strike operations through the real time synchronization of US and Coalition assets. The application provides the Warfighter with a combination of tools, services and Mission Managers for rapid "system of systems" integration, visualization, coordination and deconfliction of critical mission information. It not only enhances Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems in the areas of strike planning but also in situational awareness, joint and combined interoperability and force transition in war. JADOCS is a component of the Integrated Fires Family of Systems (FOS) and complementary to the Army Battle Command Systems (ABCS) System of Systems (SoS).

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Program Support Costs for JADOCS Software Development Efforts	2.115	2.036	2.042	-	2.042
Articles:	0	0			
Description: Program support for JADOCS software development efforts for versions 1.0.5.1, 1.0.5.2, 1.0.5.3 and 1.0.6.0.					
FY 2011 Accomplishments: Funded program support for JADOCS software development efforts.					
FY 2012 Plans: Continues the program support for JADOCS software development efforts.					
FY 2013 Base Plans: Future program support for JADOCS software development.					
Title: JADOCS Software Development Efforts costs.	2.995	8.983	6.048	-	6.048

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

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p align="right">Articles:</p> <p>Description: Complete development version 1.0.5.1, 1.0.5.2, 1.0.5.3 and Initiate development of version 1.0.6.0.</p> <p>FY 2011 Accomplishments: Complete JADOCS software development version 1.0.5.1 and Initiate software version 1.0.5.2.</p> <p>FY 2012 Plans: Complete JADOCS software development version 1.0.5.2 and Initiate software version 1.0.5.3.</p> <p>FY 2013 Base Plans: Complete JADOCS software development version 1.0.5.3 and Initiate software version 1.0.6.0.</p>	0	0			
<p>Title: Testing</p> <p align="right">Articles:</p> <p>Description: Conduct and Support Test Activities.</p> <p>FY 2011 Accomplishments: Conducted and supported JADOCS test activities.</p> <p>FY 2012 Plans: Continued JADOCS test activities.</p> <p>FY 2013 Base Plans: Future JADOCS test activities.</p>	0.500 0	0.470 0	0.505	-	0.505
Accomplishments/Planned Programs Subtotals	5.610	11.489	8.595	-	8.595

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

N/A

D. Acquisition Strategy

In FY 03, the Automated Deep Operations Coordination System (ADOCS) was renamed the Joint Automated Deep Operations Coordination System (JADOCS) and was transitioned to Product Manager, Fire Support Command and Control (FSC2).

JADOCS has operated as a graduated Advanced Concept Technology Demonstration (ACTD) program since 2005. In 2008, the Vice Chief of Staff Army approved JADOCS for Acquisition program status under the Capabilities Development for Rapid Transition (CDRT) program. Commencing in FY 10 and continuing through

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
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<p>FY 15, the Army will provide funding for its requirements under JADOCS. The Army started development of a Capabilities Production Document in 2008 and was submitted to Joint Requirements Oversight Council (JROC) for approval in 4th Quarter of FY 11.</p> <p>JADOCS is presently fielded to U.S. Central Command (USCENTCOM), U.S. Pacific Command (USPACOM), U.S. Forces Korea (USFK) and U.S. European Command (USEUCOM), including their subordinate commands. JADOCS is distributed to over 320 servers and 3,614 clients worldwide. Additionally, JADOCS is fielded to coalition partners. The Republic of Korea, the United Kingdom, Australia, Canada and North Atlantic Treaty Organization (NATO) have Foreign Military Sales (FMS) cases.</p> <p><u>E. Performance Metrics</u></p> <p>Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.</p>		

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT F19: <i>JADOCs</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Business/Technical Services	Various	Chenega Federal Systems:Various	2.323	1.500		1.610		-		1.610	Continuing	Continuing	Continuing
Subtotal			2.323	1.500		1.610		-		1.610			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development & Test	Various	TBD:TBD	2.995	8.983		6.048		-		6.048	Continuing	Continuing	Continuing
Subtotal			2.995	8.983		6.048		-		6.048			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management - Government	Various	PM Mission Command (MC):APG, MD	0.695	0.536		0.432		-		0.432	Continuing	Continuing	Continuing
Subtotal			0.695	0.536		0.432		-		0.432			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Joint Service Testing:Various	2.587	0.470		0.505		-		0.505	Continuing	Continuing	Continuing
Subtotal			2.587	0.470		0.505		-		0.505			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			8.600	11.489		8.595		-		8.595			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT F19: <i>JADOCS</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Fielding - V1.0.5.1 (CS 11-12)	■																											
Software Development and Testing - V1.0.5.2 (Quarterly Release to CS 11-12)					■	■	■	■																				
Materiel Release - V1.0.5.2 (Quarterly Release to CS 11-12)							■																					
Fielding - V1.0.5.2 (Quarterly Release to CS 11-12)							■	■																				
Milestone (MS) C							■																					
Software Development and Testing - V1.0.5.3 (CS 15-16)							■	■	■	■	■	■																
Materiel Release - V1.0.5.3 (CS 15-16)											■																	
Fielding - V1.0.5.3 (CS 15-16)											■	■																
Software Development and Testing - V1.0.6.0 (CS 17-18)													■	■	■	■	■	■	■	■								
Materiel Release - V1.0.6.0 (CS 17-18)																				■								
Fielding - V1.0.6.0 (CS 17-18)																								■				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203726A: <i>Adv Field Artillery Tactical Data System</i>	PROJECT F19: <i>JADOCS</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Fielding - V1.0.5.1 (CS 11-12)	2	2011	2	2011
Software Development and Testing - V1.0.5.2 (Quarterly Release to CS 11-12)	1	2012	3	2012
Materiel Release - V1.0.5.2 (Quarterly Release to CS 11-12)	3	2012	3	2012
Fielding - V1.0.5.2 (Quarterly Release to CS 11-12)	3	2012	4	2012
Milestone (MS) C	3	2012	3	2012
Software Development and Testing - V1.0.5.3 (CS 15-16)	3	2012	3	2013
Materiel Release - V1.0.5.3 (CS 15-16)	4	2013	4	2013
Fielding - V1.0.5.3 (CS 15-16)	4	2013	1	2014
Software Development and Testing - V1.0.6.0 (CS 17-18)	1	2014	1	2016
Materiel Release - V1.0.6.0 (CS 17-18)	2	2016	2	2016
Fielding - V1.0.6.0 (CS 17-18)	3	2016	3	2016

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	187.207	36.150	253.959	-	253.959	293.007	361.226	237.161	179.201	Continuing	Continuing
330: <i>ABRAMS TANK IMPROVE PROG</i>	93.655	9.642	97.278	-	97.278	105.919	132.551	109.160	90.106	Continuing	Continuing
371: <i>BRADLEY IMPROVE PROG</i>	93.552	12.231	82.586	-	82.586	70.790	56.663	57.179	40.539	Continuing	Continuing
DS5: <i>ARMORED MULTI PURPOSE VEHICLE (AMPV)</i>	-	14.277	74.095	-	74.095	116.298	172.012	70.822	48.556	Continuing	Continuing

Note
FY2012 - Project DS5, Armored Multipurpose Vehicle (AMPV) congressional reduction -\$17.1M.

A. Mission Description and Budget Item Justification

The Army has completed a comprehensive Combat Vehicle (CV) modernization strategy, which includes the Abrams, Bradley and Armored Multi-Purpose Vehicle (AMPV) Platforms.

This Program Element (PE) corrects vehicle deficiencies identified in Army operations; continues technical system upgrades to include the integration of applicable technologies on ground systems; addresses needed evolutionary enhancements to tracked combat vehicles; and develops technology improvements which have application to or insertion opportunities across multiple Ground Combat Systems vehicles. This PE provides combat effectiveness and Operating and Support (O&S) cost reduction enhancements for the Abrams tanks and Bradley Fighting Vehicles through a series of product improvements.

This project funds improvements to the Abrams Family of Vehicles (FOV). The Abrams mission is to provide necessary firepower, mobility and survivability to overmatch all current and emerging enemy threats in achieving decisive dominant maneuver. The M1A2 SEP (current production model) refers to a System Enhancement Package incorporated on the tank in 1998, which upgraded the M1A2's computer systems and its night vision capabilities. Since that time, the M1A2 SEP has virtually reached its upper limits for space, weight, and power (SWaP). The Abrams tank is expected to be in service through 2045 and will be modernized in accordance with a revised capabilities document to: (1) posture the tank infrastructure to enable incremental growth as a hedge against other risks and contingencies, (2) maintain threat overmatch to deter aggression, project power and protect US interests and allies around the globe - especially with regards to the lessons of counterinsurgency learned during the tank's successful campaigns during Operation Iraqi Freedom, and (3) leverage the mature and relevant technology enhancements from the Army Research & Development Technology base. The Abrams tank must embark on a modernization effort in order to remain relevant and maintain threat overmatch capability. The objective is to maintain Survivability, Combat Overmatch and reduce O&S costs through an evolutionary approach with incremental development.

The M2/M3A3 Bradley Fighting Vehicle is at or exceeds Space, Weight, and Power-Cooling (SWaP-C) limitations. To host and restore lost platform capability, the Bradley Fighting Vehicle program shall execute a series of Engineering Change Proposals (ECPs) to support the current embedded systems and to facilitate integration

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

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of technologies currently in development under other existing Programs of Record. The ECPs are not intended to exceed the operational capability outlined in current system requirements documents, but rather to ensure that the existing system performance is not further degraded and that Army mission equipment packages can be integrated on the Bradley platform.

The AMPV will provide the Heavy Brigade Combat Team (HBCT) with a replacement for the M113 Family of Vehicles (FOVs) that is more survivable and mobile to accomplish operational support missions across the full spectrum of conflict. The AMPV will be selected upon completion of the Analysis of Alternatives in FY 2013.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	204.481	53.307	252.334	-	252.334
Current President's Budget	187.207	36.150	253.959	-	253.959
Total Adjustments	-17.274	-17.157	1.625	-	1.625
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-17.274	-0.034			
• Adjustments to Budget Years	-	-	1.625	-	1.625
• Other Adjustments 1	-	-17.123	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
330: <i>ABRAMS TANK IMPROVE PROG</i>	93.655	9.642	97.278	-	97.278	105.919	132.551	109.160	90.106	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Army is developing a comprehensive Combat Vehicle modernization strategy for the Abrams main battle tank. This strategy will focus on incrementally delivering capability to the warfighter to meet both near-term limitations as well as mitigating gaps and maintaining combat overmatch in the future. This effort was approved by the Army Acquisition Executive in 3Q FY 2011. The M1A2 SEPv2 improvements implemented through the Abrams ECP 1 Program will restore lost power generation, solve impending obsolescence issues and incorporate inbound technologies currently under development under other existing Programs. The Abrams ECP 1 technologies specified in the Acquisition Decision Memorandum will complete engineering development with a production contract award in FY 2016. Production Qualification testing, Live Fire Test & Evaluation (LFT&E), and a Limited User Test (LUT) will be completed by mid FY 2020.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Abrams Engineering Change Proposal (ECP) 1</p> <p align="right">Articles:</p> <p>Description: The M1A2 SEPv2 improvements implemented through the Abrams ECP 1 Program will restore lost power generation and distribution while incorporating inbound technologies currently under development under other existing Programs.</p> <p>FY 2011 Accomplishments: The Abrams Acquisition Decision Memorandum (ADM) for the Abrams ECP 1 was issued July 2011. Begin the contract development efforts and planning for the design integration efforts.</p> <p>FY 2013 Plans: The largest portion of sub-system integration will be executed in FY 2013 with the confirmation of the preliminary design at the Preliminary Design Review. This will quickly be followed by the Critical Design Review in 1Q FY 2014, finalizing the system baseline.</p>	89.875 0	-	79.355
<p>Title: Program Management Office (PMO) Support</p> <p align="right">Articles:</p> <p>Description: Program Management Office Support includes Systems Engineering and Government and Contractor salaries, travel and other support costs required to effectively manage the program.</p> <p>FY 2011 Accomplishments:</p>	3.630 0	8.668 0	15.934

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Program Management Office Support includes the cost to develop the required documentation to support the Abrams ECP 1 Program. FY 2012 Plans: System Engineering and Program Management Office Support to effectively manage the program. FY 2013 Plans: Systems Engineering and Program Management Office Support to effectively manage the program.			
Title: Test & Evaluation Description: Test and Evaluation FY 2011 Accomplishments: Test & Evaluation FY 2012 Plans: Test & Evaluation efforts to support system level test events and planning and development of test documentation FY 2013 Plans: Test & Evaluation efforts to support system level test events and planning and development of test documentation	Articles: 0.150 0	0.974 0	1.989
Accomplishments/Planned Programs Subtotals	93.655	9.642	97.278

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Abrams Upgrade Program: <i>Abrams Upgrade Program</i>	181.973	436.329	74.433		74.433					0.000	692.735
• M1 Abrams Tank Mod (GA0700): <i>Abrams Vehicle Modification</i>	229.612	131.178	129.090		129.090		318.126	449.422	419.271	1,993.900	3,928.681
• Spares (Initial) Abrams Upgrade: <i>Spares (Initial) Abrams Upgrade</i>		7.219								0.000	7.219

D. Acquisition Strategy
Abrams Engineering Change Proposal (ECP) 1: Development Contract - Sole Source, Cost Plus Incentive Fee (CPIF)
Production Contract - Sole Source, Firm Fixed Price

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

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

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

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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Abrams Engineering Change Proposal (ECP) 1	SS/CPIF	General Dynamics Land Systems: Sterling Heights, MI	89.875	-		79.355		-		79.355	0.000	169.230	0.000
Subtotal			89.875	-		79.355		-		79.355	0.000	169.230	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Office (PMO) Support	SS/LH	Various: Various	22.638	8.668		15.934		-		15.934	Continuing	Continuing	Continuing
Subtotal			22.638	8.668		15.934		-		15.934			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advance Technology Preparation and Testing	Various	Aberdeen Proving Ground; Yuma Proving Ground; White Sands Missile Range; Various	8.226	0.974		1.989		-		1.989	Continuing	Continuing	Continuing
Subtotal			8.226	0.974		1.989		-		1.989			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Project Cost Totals		120.739	9.642			97.278		-		97.278		

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Abrams Engineering Change Proposal (ECP) 1				■																								
Acquisition Decision Memorandum (ADM)				■																								
Development Contract Award								■																				
Engineering & Manufacturing Development									■																			
Preliminary Design Review (PDR)												■																
Critical Design Review (CDR)																■												
Production Contract Award																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT 330: <i>ABRAMS TANK IMPROVE PROG</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Abrams Engineering Change Proposal (ECP) 1	4	2011	4	2011
Acquisition Decision Memorandum (ADM)	4	2011	4	2011
Development Contract Award	4	2012	4	2012
Engineering & Manufacturing Development	4	2012	2	2016
Preliminary Design Review (PDR)	2	2013	2	2013
Critical Design Review (CDR)	1	2014	1	2014
Production Contract Award	2	2016	2	2016

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT 371: <i>BRADLEY IMPROVE PROG</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
371: <i>BRADLEY IMPROVE PROG</i>	93.552	12.231	82.586	-	82.586	70.790	56.663	57.179	40.539	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The M2/M3A3 Bradley Fighting Vehicle is at or exceeds Space, Weight, and Power-Cooling (SWaP-C) limitations. To host and restore lost platform capability, the Bradley Fighting Vehicle program shall execute a series of Engineering Change Proposals (ECPs) to support the current embedded systems and to facilitate integration of technologies currently in development under other existing Programs of Record. The ECPs are not intended to exceed the operational capability outlined in current system requirements documents, but rather to ensure that the existing system performance is not further degraded and that Army mission equipment packages can be integrated on the Bradley platform.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Bradley ECP Program</p> <p align="right">Articles:</p> <p>Description: The Bradley Fighting Vehicle System (BFVS) improvements implemented through the Engineering Change Proposal (ECP) Program will focus on restoring lost platform capability to support Army inbound technologies and to facilitate integration of technologies currently in development under other existing Programs of Record.</p> <p>FY 2011 Accomplishments: The Bradley ECP Acquisition Decision Memorandum (ADM) was approved in July 2011. Begin planning for design and integration of subsystems focusing on restoring space, weight and power limitations.</p> <p>FY 2012 Plans: Award major contracts to begin design and integration of subsystems focusing on restoring space, weight and power limitations.</p> <p>FY 2013 Plans: Continue design and integration of subsystems with the Preliminary Design Review. Qualification of subsystems leading towards Critical Design Review in 2nd Qtr FY 2014.</p>	<p>83.552</p> <p>0</p>	<p>2.231</p> <p>0</p>	<p>72.586</p>
<p>Title: Support Costs</p> <p align="right">Articles:</p> <p>Description: Government System Engineering and Program Management Support Costs. These funds cover the costs of Government salaries, travel and the facilities required to effectively manage the program.</p> <p>FY 2011 Accomplishments:</p>	<p>10.000</p> <p>0</p>	<p>10.000</p> <p>0</p>	<p>10.000</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT 371: <i>BRADLEY IMPROVE PROG</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Government System Engineering and Program Management Support Costs. These funds cover the costs of Government salaries, travel and the facilities required to effectively manage the program. FY 2012 Plans: Government System Engineering and Program Management Support costs. These funds cover the costs of government salaries, travel and the facilities required to effectively manage the program. FY 2013 Plans: Government System Engineering and Program Management Support Costs. These funds cover the costs of Government salaries, travel and the facilities required to effectively manage the program.			
Accomplishments/Planned Programs Subtotals	93.552	12.231	82.586

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• GZ2400: <i>Bradley Program (MOD)</i>	202.987	250.710	148.193		148.193		202.628	246.388	210.843	122.800	1,566.724

D. Acquisition Strategy

Product Manager Bradley will execute an Engineering Change Proposal (ECP) reestablishing Space, Weight, Power and Cooling (SWAP-C) to facilitate integration of technologies being developed under existing Programs of Record (POR). The proposed ECP will restore lost capability, not to exceed operational envelopes outlined in current approved requirement documents. The ECP is scheduled to field in FY 2018 to address powerpack and electrical power upgrades, which will enable the vehicle to host Army directed inbound technologies with no further performance degradation to the vehicle. This ECP will be executed on a sole source cost plus incentive fee contract to the current platform Original Equipment Manufacturer.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT 371: <i>BRADLEY IMPROVE PROG</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Bradley Modernization Program	TBD	PMO:Warren, MI	115.087	-		-		-		-	0.000	115.087	0.000
Non Recurring Engineering	SS/CPIF	DRS:Huntsville, AL	-	-		4.773		-		4.773	9.309	14.082	0.000
Non Recurring Engineering	SS/CPIF	L3COM:Muskegon, MI	-	-		2.202		-		2.202	16.194	18.396	Continuing
Non Recurring Engineering	SS/FFP	Cummins:Columbus, IN	-	-		0.976		-		0.976	9.116	10.092	0.000
Non Recurring Engineering	SS/CPIF	BAE:Sterling Heights, MI	-	2.231		64.635		-		64.635	128.647	195.513	0.000
Subtotal			115.087	2.231		72.586		-		72.586	163.266	353.170	

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	MIPR	PMO:Bradley ECP Program	16.000	4.000		4.000		-		4.000	16.000	40.000	Continuing
Government Engineering Support	MIPR	Various:Bradley ECP Program	24.000	6.000		6.000		-		6.000	24.000	60.000	Continuing
Subtotal			40.000	10.000		10.000		-		10.000	40.000	100.000	

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	MIPR	Various:Test Sites	-	-		-		-		-	21.905	21.905	0.000
Subtotal			-	-		-		-		-	21.905	21.905	0.000

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			155.087	12.231		82.586		-		82.586	225.171	475.075	

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT 371: <i>BRADLEY IMPROVE PROG</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Decision Memorandum (ADM)				■																								
System Requirements Review								■																				
Preliminary Design Review												■																
Critical Design Review																■												
Component Qualification Testing																												
Contractor Vehicle Testing																												
Government Vehicle Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT 371: <i>BRADLEY IMPROVE PROG</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Decision Memorandum (ADM)	4	2011	4	2011
System Requirements Review	4	2012	4	2012
Preliminary Design Review	2	2013	2	2013
Critical Design Review	2	2014	2	2014
Component Qualification Testing	3	2014	2	2015
Contractor Vehicle Testing	2	2015	4	2016
Government Vehicle Testing	1	2017	4	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT DS5: <i>ARMORED MULTI PURPOSE VEHICLE (AMPV)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DS5: <i>ARMORED MULTI PURPOSE VEHICLE (AMPV)</i>	-	14.277	74.095	-	74.095	116.298	172.012	70.822	48.556	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item

A. Mission Description and Budget Item Justification

The Army has completed a comprehensive Combat Vehicle modernization strategy, which includes the Armored Multi-Purpose Vehicle (AMPV). The AMPV will provide the Heavy Brigade Combat Team (HBCT) with a replacement for the M113 Family of Vehicles (FOVs) that is more survivable and mobile to accomplish operational support missions across the full spectrum of conflict. The materiel solution for the AMPV program will be selected upon completion of the Analysis of Alternatives IN FY 2013.

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

	FY 2011	FY 2012	FY 2013
Title: Armored Multi-Purpose Vehicle	-	14.277	74.095
Articles:		0	
Description: The Army has completed a comprehensive Combat Vehicle modernization strategy, which includes the Armored Multi-Purpose Vehicle (AMPV) as one of its top priorities. The AMPV will provide the Heavy Brigade Combat Team (HBCT) with a replacement for the M113 Family of Vehicles (FOVs) that is more survivable and mobile to accomplish operational support missions across the full spectrum of conflict. The AMPV will be selected upon completion of the Analysis of Alternatives in FY 2013.			
FY 2012 Plans: The Materiel Development Decision (MDD) approval is expected in February 2012 to allow for entry into the Materiel Solution Analysis Phase which authorizes the start of the Analysis of Alternatives (AoA) and organization of the program office.			
FY 2013 Plans: The results of the Analysis of Alternatives will determine the AMPV solution. Competitive source selection preparation to include the preparation of government-furnished material and technical data to support competition will occur in FY 2013.			
Accomplishments/Planned Programs Subtotals	-	14.277	74.095

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT DS5: <i>ARMORED MULTI PURPOSE VEHICLE (AMPV)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• G80819: <i>Armored Multi Purpose Vehicle (AMPV)</i>		14.277	74.095		74.095		172.012	70.822	48.556	0.000	496.060

D. Acquisition Strategy

Acquisition planning includes modification of current capital assets. The Acquisition strategy will be determined upon completion of the Analysis of Alternatives when a Material Solution is chosen.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT DS5: <i>ARMORED MULTI PURPOSE VEHICLE (AMPV)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AMPV Development	MIPR	OGAs:Various locations	-	8.263		14.853		-		14.853	0.000	23.116	0.000
Technical Data Package (TDP)	TBD	TBD:TBD	-	-		42.248		-		42.248	0.000	42.248	0.000
Subtotal			-	8.263		57.101		-		57.101	0.000	65.364	0.000

Remarks
Armored Multi Purpose Vehicle Tech data and system level product development costs.

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AMPV Documentation	C/FFP	Camber:Michigan	-	1.000		1.016		-		1.016	0.000	2.016	0.000
Program Management Office (PMO)	MIPR	PMO:Warren, MI	-	1.790		2.973		-		2.973	0.000	4.763	0.000
Other Program Support	MIPR	OGAs:Various locations	-	3.224		13.005		-		13.005	0.000	16.229	0.000
Subtotal			-	6.014		16.994		-		16.994	0.000	23.008	0.000

Remarks
AMPV Support Costs

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		-	14.277	74.095	-	74.095	0.000	88.372	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT DS5: <i>ARMORED MULTI PURPOSE VEHICLE (AMPV)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Material Development Decision (MDD)					■																							
Analysis of Alternatives					■	■	■	■																				
Release RFP												■																
Milestone B													■	■														
EMD Contract Award													■	■														
Preliminary Design Review															■	■												
Critical Design Review																	■	■										
Production Qualification Test/Limited User Test																							■	■	■	■	■	■
Milestone C																											■	■
LRIP Contract Award																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203735A: <i>Combat Vehicle Improvement Programs</i>	PROJECT DS5: <i>ARMORED MULTI PURPOSE VEHICLE (AMPV)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Material Development Decision (MDD)	2	2012	2	2012
Analysis of Alternatives	2	2012	1	2013
Release RFP	4	2013	4	2013
Milestone B	1	2014	1	2014
EMD Contract Award	1	2014	1	2014
Preliminary Design Review	3	2014	3	2014
Critical Design Review	2	2015	2	2015
Production Qualification Test/Limited User Test	1	2016	4	2016
Milestone C	1	2017	1	2017
LRIP Contract Award	2	2017	2	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	24.648	42.347	68.325	-	68.325	66.869	40.460	-	-	Continuing	Continuing
484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>	24.648	42.347	68.325	-	68.325	66.869	40.460	-	-	Continuing	Continuing

Note

Change Summary Explanation: Funding - FY13: Change in funding provides for the continuation of Mission Command Collapse development and integration efforts to allow for a single Mission Command solution with an open architecture that produces a collaborative Mission Command environment.

A. Mission Description and Budget Item Justification

Tactical Mission Command (TMC) is a suite of products and services that provide commanders and staffs executive decision making capability in a collaborative environment, planning tools, and Common Operational Picture (COP) management and other maneuver functional tools. TMC satisfies requirements and capabilities identified in the Maneuver Control System (MCS) Good Enough Operational Requirements Document (ORD) and MCS 6.4 Capability Production Document (CPD) which includes Army migration to Department of Defense (DoD) net-centric environment. The overarching capability includes a user-defined COP with integrated Command and Control (C2) and Situational Awareness (SA), map-centric collaboration, Army Battle Command System (ABCS) and other enabling system interoperability, data management, and enterprise services. The suite of products include Command Post of the Future (CPOF), Battle Command Common Services (BCCS) that provides the consolidate server and services infrastructure for systems supporting Army Battle Command from Battalion to Army Component Command, Battalion and Above Joint Convergence with the Marine Corps, and Tactical Web Portal for Knowledge management. TMC products and services are compliant with the joint technical architecture. In addition, this project funds the development of a collaborative Mission Command (MC) environment for ABCS to operate more efficiently and effectively. The MC environment will serve as a common foundation for functionality development and support by collapsing onto a common architecture and infrastructure. MC Convergence/ Common Operating Environment (COE) development and integration will significantly enhance the ability of commanders and staff to effectively conduct collaborative mission planning and execution across a range of operations and spectrum of conflict.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	25.540	65.002	56.161	-	56.161
Current President's Budget	24.648	42.347	68.325	-	68.325
Total Adjustments	-0.892	-22.655	12.164	-	12.164
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	12.164	-	12.164
• Other Adjustments 1	-0.892	-0.067	-	-	-
• Other Adjustments 2	-	-22.588	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>				PROJECT 484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>	24.648	42.347	68.325	-	68.325	66.869	40.460	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Tactical Mission Command (TMC) is a suite of products and services that provide commanders and staffs executive decision making capability in a collaborative environment, planning tools, and Common Operational Picture (COP) management and other maneuver functional tools. TMC satisfies requirements and capabilities identified in the Maneuver Control System (MCS) Good Enough Operational Requirements Document (ORD) and MCS 6.4 Capability Production Document (CPD) which includes Army migration to Department of Defense (DoD) net-centric environment. The overarching capability includes a user-defined COP with integrated Command and Control (C2) and Situational Awareness (SA), map-centric collaboration, Army Battle Command System (ABCS) and other enabling system interoperability, data management, and enterprise services. The suite of products include Command Post of the Future (CPOF), Battle Command Common Services (BCCS) that provides server consolidation and services infrastructure for systems supporting Army Battle Command from Battalion to Army Component Command, Battalion and Above Joint Convergence with the Marine Corps, and Tactical Web Portal for Knowledge management. TMC products and services are compliant with the joint technical architecture. In addition, this project funds the development of a collaborative Mission Command (MC) environment for ABCS to operate more efficiently and effectively. The MC environment will serve as a common foundation for functionality development and support by collapsing onto a common architecture and infrastructure. MC Convergence/ Common Operating Environment (COE) development and integration will significantly enhance the ability of commanders and staff to effectively conduct collaborative mission planning and execution across a range of operations and spectrum of conflict.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Joint Convergence Engineering and Development	-	2.899	3.942	-	3.942
Articles:		0			
Description: Joint Convergence Engineering and Development					
FY 2012 Plans: Joint Convergence Engineering and Development					
FY 2013 Base Plans: Joint Convergence Engineering and Development					
Title: CPOF Development	21.499	14.699	21.409	-	21.409
Articles:	0	0			
Description: CPOF Development					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>	PROJECT 484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<i>FY 2011 Accomplishments:</i> CPOF Development <i>FY 2012 Plans:</i> CPOF Development <i>FY 2013 Base Plans:</i> CPOF Development					
<i>Title:</i> Mission Command Collapse <i>Description:</i> Mission Command Collapse Development and Integration <i>FY 2012 Plans:</i> Mission Command Collapse Development and Integration <i>FY 2013 Base Plans:</i> Mission Command Collapse Development and Integration	-	16.411 0	35.055	-	35.055
<i>Title:</i> Battle Command Common Services Development <i>Description:</i> Battle Command Common Services Development <i>FY 2011 Accomplishments:</i> Battle Command Common Services Development <i>FY 2012 Plans:</i> Battle Command Common Services Development <i>FY 2013 Base Plans:</i> Battle Command Common Services Development	3.149 0	8.338 0	7.919	-	7.919
Accomplishments/Planned Programs Subtotals	24.648	42.347	68.325	-	68.325

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>	PROJECT 484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Funding: <i>BA9320 Maneuver Control System (MCS)</i>	155.733	78.031	51.228	6.400	57.628		171.114	183.404	186.563	Continuing	Continuing
• SPARES: <i>BS9710 MCS Spares Procurement</i>	1.475	1.633	1.671		1.671		0.584	0.594	0.604	Continuing	Continuing

D. Acquisition Strategy

In accordance with the Training and Doctrine Command (TRADOC) requirements document approved in 2008, entitled Mission Command Essential Capability, software capability will be developed in 2-year increments as capability sets designed to Collaborate, Collapse and Converge Mission Command products. The product development funded under this R-Form is an integral part of the ABCS, a system of systems, under a strategy designed to optimize opportunity for improved interoperability among the systems, to capture the benefits of competition where possible and to ensure the rapid integration of new capability into warfighter systems. This strategy is designed to increase operational efficiency, reduce the physical footprint, and logistics support requirements. Mission Command Collapse/ Common Operating Environment (COE) development and integration provides for a single, common solution with open architecture that produces a collaborative Mission Command environment for Maneuver, Fires and Air supported by Intel and Logistics.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>	PROJECT 484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Mgmt	Various	PM Battle Command:Aberdeen Proving Grounds, MD	10.016	1.854		1.888		-		1.888	Continuing	Continuing	Continuing
Subtotal			10.016	1.854		1.888		-		1.888			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Contracts	Various	Various:Various	24.008	0.923		-		-		-	Continuing	Continuing	Continuing
ABCS SoS Contract (Joint Convergence Development)	Various	Lockheed Martin:Tinton Falls, NJ	2.262	2.899		2.917		-		2.917	Continuing	Continuing	Continuing
Technical Support	Various	PM Battle Command:Various	24.476	1.535		0.309		-		0.309	Continuing	Continuing	Continuing
CPOF Development	Various	General Dynamics:Scottsdale, AZ	83.455	14.113		20.428		-		20.428	Continuing	Continuing	Continuing
ABCS SoS Contract (Joint Convergence Development) Follow-on	TBD	TBD:TBD	-	-		1.025		-		1.025	Continuing	Continuing	0.000
Mission Command Collapse Development & Integration	Various	Various:Various	-	16.411		35.055		-		35.055	Continuing	Continuing	Continuing
Software Development & Technical Support	Various	CECOM Software Engineering Center:Aberdeen Proving Ground, MD	50.320	2.894		5.441		-		5.441	Continuing	Continuing	Continuing
PAL Integration	IA	SRI:AZ	11.000	-		-		-		-	Continuing	Continuing	0.000
Subtotal			195.521	38.775		65.175		-		65.175			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>	PROJECT 484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Mission Command COE 2.0 (15-16)																												
Mission Command COE 3.0 (17-18)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203740A: <i>Maneuver Control System</i>	PROJECT 484: <i>MANEUVER CONTROL SYSTEM (MCS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mission Command COE 2.0 (15-16)	1	2013	4	2014
Mission Command COE 3.0 (17-18)	1	2015	4	2016

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	121.084	149.469	280.247	-	280.247	337.363	354.663	311.992	291.466	Continuing	Continuing
430: <i>IMPR CARGO HELICOPTER</i>	10.509	48.862	71.563	-	71.563	61.453	59.188	43.830	44.569	Continuing	Continuing
504: <i>BLACK HAWK RECAPITALIZATION/ MODERNIZATION</i>	19.907	7.954	83.255	-	83.255	120.986	134.375	129.337	131.519	Continuing	Continuing
D17: <i>APACHE BLOCK III</i>	90.668	92.653	124.450	-	124.450	153.967	160.016	138.190	114.366	Continuing	Continuing
D18: <i>Fixed Wing Aircraft</i>	-	-	0.979	-	0.979	0.957	1.084	0.635	1.012	Continuing	Continuing

A. Mission Description and Budget Item Justification

FY 2011 budget request funds aviation development of modifications and improvements for the Guardrail Common Sensor/Aerial Common Sensor, the Improved Cargo Helicopter (ICH), the UH-60A/L Black Hawk Recapitalization/ Modernization.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	134.999	163.205	256.600	-	256.600
Current President's Budget	121.084	149.469	280.247	-	280.247
Total Adjustments	-13.915	-13.736	23.647	-	23.647
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	20.638	-	20.638
• Other Adjustments 2	-13.915	-13.736	3.009	-	3.009

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 430: <i>IMPR CARGO HELICOPTER</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
430: <i>IMPR CARGO HELICOPTER</i>	10.509	48.862	71.563	-	71.563	61.453	59.188	43.830	44.569	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The CH-47 Chinook is a twin-turbine, tandem-rotor, heavy-lift transport helicopter with a useful load of up to 25,000 pounds. As the Army's only heavy lift helicopter, the CH-47 is an essential component of the Army Future Force. The CH-47F program fills the Army's Aviation Transformation Chinook requirement. This program funds improvements to the engines and airframe components. The T55-GA-714A engine improvements include a redesigned N1 drive line, a new torque system, and provides improvement to the engine control unit thru continuous software upgrades. The Airframe Component Improvement Program includes development of new rotor blades, drive train, aircraft power generation systems, and avionics solutions that will allow the Chinook to improve its performance by providing improved aircraft controls, increased payload capability, and advanced avionics capabilities. Early studies will be performed to identify largest areas of payback in fleet modernization.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: 714 Engine Component Improvement Program	2.400	5.500	5.955	-	5.955
Articles:	0	0			
Description: This funding supports the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include N1 Drive Line redesign, a new torque system, and improved electronic control unit software.					
FY 2011 Accomplishments: This funding continues to support the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include N1 Drive Line redesign and improved electronic control unit software.					
FY 2012 Plans: This funding will support the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include a new torque system and improved electronic control unit software.					
FY 2013 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 430: <i>IMPR CARGO HELICOPTER</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
This funding supports the Engine Component Improvement Program and quality improvements that address safety, reliability, and readiness issues. Improvements include a new torque system and improved electronic control unit software.						
Title: Airframe Component Improvement Program		7.625	41.035	62.200	-	62.200
		Articles: 0	0			
Description: This funding supports airframe component improvement which includes development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Develops an improved gun mount with double the ammunition capacity. Completes drive train improvement studies. Also funds the development of an advanced aircraft drive train improvement.						
FY 2011 Accomplishments: This funding provides development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Continues development of the improved gun mount.						
FY 2012 Plans: This funding provides development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Initiates drivetrain improvements to improve aircraft performance. Completes development and testing of the improved gun mount.						
FY 2013 Base Plans: This funding provides development of new rotor blades that will result in significant performance improvement such as gaining an approximate 2000 lbs of lift, improving erosion protection, and reducing retreating blade stall. Funds the continual development of an advanced aircraft drive train improvement.						
Title: In-house and Program Management Administration		0.484	2.327	3.408	-	3.408
		Articles: 0	0			
Description: This funding provides support costs for various government agencies.						
FY 2011 Accomplishments:						

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 430: <i>IMPR CARGO HELICOPTER</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
This funding will continue to provide support costs for various government agencies.					
<i>FY 2012 Plans:</i> This funding provides future support costs for various government agencies.					
<i>FY 2013 Base Plans:</i> This funding provides future support costs for various government agencies.					
Accomplishments/Planned Programs Subtotals	10.509	48.862	71.563	-	71.563

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• AA0252: <i>CH-47 CARGO HELICOPTER MODS (MYP)</i> <i>(Including Adv Proc and Initial Spares)</i>	66.207	79.712	38.633		38.633		61.183	84.428	480.214	6,612.220	7,595.341
• A05105: <i>CH-47 SLEP</i>	298.408	423.917	626.100		626.100		759.800	775.000	744.474	2,228.835	6,550.634
• A05008: <i>CH-47 CARGO HELICOPTER NEW BUILD</i> <i>(Including Adv Proc)</i>	860.641	936.399	518.400		518.400		154.700	398.900	518.329	0.000	3,608.469

D. Acquisition Strategy
The CH-47F program replaces one for one, the aging CH-47D aircraft by FY2020, incorporates a new machined airframe, and includes a new Common Avionics Architecture System (CAAS) cockpit with digital communication/navigation capability allowing improved interoperability on the digital battlefield. The CH-47F program includes recapitalization of key dynamic components, bringing them to a near zero time.

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army								DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>				PROJECT 504: <i>BLACK HAWK RECAPITALIZATION/MODERNIZATION</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
504: <i>BLACK HAWK RECAPITALIZATION/MODERNIZATION</i>	19.907	7.954	83.255	-	83.255	120.986	134.375	129.337	131.519	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The UH-60 Black Hawk is the workhorse of Army Aviation, flying more than 49% of the Army's annual flying hours. The system has been in production for over 30 years and provides a common platform with the versatility to perform multiple missions, ranging from air assault to command and control to medical evacuation/search and rescue. While the Black Hawk is the Army's newest helicopter, it was designed with a twenty-year service life. Today, two-fifths of the Army's Black Hawk fleet (721 aircraft) is comprised of H-60L aircraft with an average age of 13 years. The older H-60A models (918 aircraft) have an average age exceeding 23 years. To counter the older UH-60A's declining readiness rates, increased operations and support costs and to meet Future Force interoperability requirements, the Utility Helicopters Project Office established a program to replace existing UH-60 helicopters and provide capabilities needed on the future battlefield. The resulting configuration of the new UH-60M enhances the commander's ability to conduct non-linear, simultaneous, fully integrated operations in order to decisively mass the effects of the Army's warfighting assets. The UH-60M configuration provides digital connectivity for enhanced situational awareness and improved lift, range, deployability, and survivability to further increase the commander's ability to conduct operations across the entire spectrum of the battle space. An Operational Requirements Document (ORD) for recapitalization of the Black Hawk fleet was approved by the Joint Requirements Oversight Council (JROC) in March, 2001. The ORD described an evolutionary, block approach to transform the utility helicopter force to one that is more deployable, responsive, and less expensive to operate. A revised ORD was signed by the JROC on July 24, 2006, which updated key performance parameters for survivability and force protection. RDTE funds were required to develop, integrate, test and qualify the UH-60M Upgrade configuration. FY2005 funded the initial efforts to move the UH-60M program to an Upgrade configuration which included Fly-By-Wire (FBW) technology, Full Authority Digital Engine Control (FADEC) and the Common Avionics Architecture System (CAAS), which is the common cockpit to be used by UH-60M, CH-47 and Special Operations aircraft. Incorporation of CAAS will minimize future sustainment costs for these aircraft platforms. A successful UH-60M Upgrade IPR decision was obtained in January 2006. On May 18, 2007, the Office of the Secretary of Defense (OSD) Overarching Integrated Product Team (OIPT) approved the Army request for advanced procurement for seven UH-60M Upgrade aircraft and recommended a paper Defense Acquisition Board (DAB). On October 15, 2009, based on increasing demands for helicopters to support Army Force Generation Model (AFORGEN) requirements, the Configuration Steering Board (CSB) recommended a restructure of the UH-60 Modernization Program to the Defense Acquisition Executive (DAE). The recommendation included three parts: 1) produce UH-60M baseline aircraft only; 2) complete Development Test (DT) on FBW aircraft; and 3) migrate selected technologies from the upgrade development efforts to the baseline configuration. The recommendation was approved by the DAE on February 18, 2010, in a signed Acquisition Decision Memorandum (ADM). The ADM also directed the program to rebaseline.

The Improved Turbine Engine Program (ITEP) develops, tests and qualifies a nominal three thousand (3000) shaft horsepower (shp) class turboshaft engine with 25% better specific fuel consumption (SFC) as compared to other equivalent horsepower category engines. The engine will be designed to fit in the same engine envelope as a T700 engine for the Black Hawk and Apache aircraft. Other goals of the program are 65% greater horsepower to weight ratio, 35% less production and maintenance cost and 20% greater design life. The program consists of system engineering and program management, detailed design engineering, design assurance

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 504: <i>BLACK HAWK RECAPITALIZATION/MODERNIZATION</i>
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hardware manufacturing and testing, component and module level development and testing, system level testing and qualification, as well as, initial integration testing into the airframe.

The UH-60L Cockpit Digitization provides an integrated digital map, integrated performance planning, and commonality of hardware, software and training with UH-60M. Effectively, the UH-60L will have the same situational awareness as the UH-60M.

FY2013 funds ITEP Systems Engineering/Program Management Milestone Decision requirements, while FY2014 funds ITEP contract award and initial component design and fabrication. FY2013 also funds UH-60L Cockpit Digitization.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Fly-By-Wire Aircraft Development Testing</p> <p align="right">Articles:</p> <p>Description: Supported the completion of the Fly-By-Wire technology.</p> <p>FY 2011 Accomplishments: Continued to fund Development Testing of Fly-By-Wire technology in a rotary wing flight environment.</p>	19.907 0	-	-	-	-
<p>Title: ITEP</p> <p align="right">Articles:</p> <p>Description: Improved Turbine Engine Program (ITEP) - a multi-platform turbine engine improvement required across existing Army aircraft to fill the capability gaps for Army Aviation Operations.</p> <p>FY 2012 Plans: Activity to support Material Development Decision (MDD), preparation for Milestone A entry, development of contractor requirements package, and support to Analysis of Alternatives (AoA).</p> <p>FY 2013 Base Plans: Systems Engineering/Program Management MS A requirements leading to contract award and initial component design and fabrication. Initial development contract award.</p>	-	7.954 0	72.255	-	72.255
<p>Title: UH-60L Cockpit Digitization</p> <p>Description: Three year program to upgrade UH-60L, digitization of cockpit.</p> <p>FY 2013 Base Plans:</p>	-	-	11.000	-	11.000

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 504: <i>BLACK HAWK RECAPITALIZATION/MODERNIZATION</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Begin UH-60L cockpit digitation effort.					
Accomplishments/Planned Programs Subtotals	19.907	7.954	83.255	-	83.255

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• BLACK HAWK (MYP): <i>BLACK HAWK (MYP)</i>	1,391.598	1,597.447	1,346.760		1,346.760		1,237.183	1,456.871	1,549.788	Continuing	Continuing

D. Acquisition Strategy

The Utility Helicopters Project Manager Office (UH PMO) is planning and executing programs to acquire the capabilities described in the Operational Requirements Document (ORD) For Recapitalization Of The UH-60 Black Hawk Utility Helicopter Fleet. The ORD specifies a two block approach and cites firm requirements for both blocks of capability as well as a robust pre-planned product improvement (P3I) plan that includes the insertion of technology. To address the requirements in the ORD the Utility Helicopters Project Office developed a strategy that developed the UH-60M Baseline to meet the Block 1 requirements and initiated the development of the UH-60M Upgrade for technology insertion of Fly-By-Wire (FBW), Full Authority Digital Engine Control (FADEC), and Common Avionics Architecture System (CAAS). In February 2010, the Defense Acquisition Executive (DAE) supported an Army Configuration Steering Board (CSB) and Office of Secretary of Defense (OSD) Overarching Integrated Product Team (OIPT) recommendation to cease production of the UH-60M Upgrade integrated solution due to Army Force Generation (AFORGEN) requirements. Concurrence with this recommendation is captured in the 18 February 2010 Acquisition Decision Memorandum (ADM) directing the Army to rebaseline the UH-60 Modernization Program. The ADM directed the completion of the development and development test of the UH-60M Upgrade program, continued procurement of UH-60M aircraft, and migration of select technologies from the UH-60M Upgrade development to the UH-60M configuration. This migration does not include FBW or CAAS. As part of completing the development and development testing of the UH-60M Upgrade, the integration, qualification and testing will be documented and shelved awaiting a future decision directing production of UH-60M Upgrade. At the point the decision is made to restart the UH-60M Upgrade effort, the appropriate UH-60M acquisition and test documents will be updated.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 504: <i>BLACK HAWK RECAPITALIZATION/MODERNIZATION</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ITEP SEPM - Core Organic	Various	PMO:Huntsville, AL	-	0.780		1.129		-		1.129	Continuing	Continuing	Continuing
ITEP SEPM - Core Contractor	Various	TBD:TBD	-	0.544		0.521		-		0.521	Continuing	Continuing	Continuing
ITEPSEPM - Marix Government	Various	PMO:Huntsville, AL	-	2.450		3.449		-		3.449	Continuing	Continuing	Continuing
ITEP SEPM - Marix Contractor	Various	TBD:TBD	-	0.088		0.091		-		0.091	Continuing	Continuing	Continuing
ITEP SEPM - OGA (AATD)	Various	TBD:Various	-	0.800		0.832		-		0.832	Continuing	Continuing	Continuing
ITEP SEPM - SSEB Support	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
ITEP OTHER	Various	TBD:Various	-	2.692		64.153		-		64.153	Continuing	Continuing	Continuing
Subtotal			-	7.354		70.175		-		70.175			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fly-By-Wire Aircraft Program	Various	TBD:TBD	19.907	-		-		-		-	Continuing	Continuing	Continuing
UH-60L Cockpit Digitization	C/CPAF	TBD:Various	-	-		11.000		-		11.000	Continuing	Continuing	Continuing
ITEP Development Engineering	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			19.907	-		11.000		-		11.000			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ITEP Other OGA - AoA Development Support	Various	AMSAA:Huntsville, AL	-	0.600		2.080		-		2.080	Continuing	Continuing	Continuing
Subtotal			-	0.600		2.080		-		2.080			

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 504: <i>BLACK HAWK RECAPITALIZATION/MODERNIZATION</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ITEP System Test & Evaluation	Various	Various:Various	-	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	-		-		-		-			

Project Cost Totals	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
	19.907	7.954		83.255		-		83.255			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT 504: <i>BLACK HAWK RECAPITALIZATION/MODERNIZATION</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Improved Turbine Engine Program Systems Engineering/Program Management	1	2012	4	2017
Improved Turbine Engine Program Development Engineering	1	2014	4	2017
Improved Turbine Engine Program Component Development & Fabrication	1	2015	4	2017
Improved Turbine Engine Program Vendor Testing	1	2015	4	2017
UH-60L Cockput Digitization	1	2013	4	2015

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
D17: <i>APACHE BLOCK III</i>	90.668	92.653	124.450	-	124.450	153.967	160.016	138.190	114.366	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Project D17, Apache Block III (AB3) funding is for the non-recurring engineering (NRE), development, and testing work associated with the planned remanufacture and new build of 690 Apache aircraft in the Block III configuration (deliveries began in Oct 2011). The AB3 program consists of two Major Defense Acquisition Programs (MDAP), AB3A Remanufacture and AB3B New Build. D17 program addresses obsolescence and reliability challenges as well as adds significant combat capability to the aircraft. Upgrades include: Unmanned Aircraft System (UAS) Level III-IV Control, Improved Situational Awareness, Upgraded Communications Suite, Improved Drive and Propulsion Systems, Improved Targeting Capability, Increased Computer Processing Capability and Speed, Improved Navigation Systems, and Improved Diagnostics and Maintainability. Upgrades are integrated as incremental block modifications. The program addresses operational shortfalls identified during real-world combat missions and meets Longbow Apache Capability Production Document (CPD) requirements for modernization.

Funding also provides for the Modernized Rocket Launcher (MRL) to support the MIL-STD1760 digital AH-64D Apache and OH-58F Kiowa Warrior aircraft. MRL replaces the analog interface M260 and M261 Hydra-70 rocket launchers on Army Aviation aircraft that employ digital interfaces to address reliability shortcomings identified during combat missions. MRL is a fully-digitized launcher, which provides reduced weight, increased safety, reliability, flexibility, and improved accuracy and effectiveness while employing the Hydra-70 rocket system. MRL will eliminate weapon-unique aircraft equipment by providing a non-proprietary, open architecture standard MIL-STD-1760 interface and will improve reliability and maintainability through launcher and rocket Built-in-Test (BIT) and supports future growth.

FY2013 funding totals do not include any previously requested funding for current FY2013 Overseas Contingency Operations (OCO) requirements, and no FY2013 OCO funds have been previously requested in the RDTE Project D17.

FY2012 funding totals do not include any previously requested funding for current FY2012 Overseas Contingency Operations (OCO) requirements, and no FY2012 OCO funds have been previously requested in the RDTE Project D17.

FY2011 funding totals did not include any previously requested funding for current FY2011 Overseas Contingency Operations (OCO) requirements, and no FY2011 OCO funds have been previously requested in the RDTE Project D17.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Major Contracts	78.200	52.984	83.516	-	83.516

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Articles:		0	0			
Description: Funding is provided for the following effort						
FY 2011 Accomplishments: Development & Testing work associated with the planned remanufacture and new build of Apache aircraft in the Block III Lot 1-3 configuration						
FY 2012 Plans: Development & Testing capabilities associated with planned remanufacture and new build of Apache aircraft for Block III Lot 4 & 6 configuration (joint interoperability, crashworthy fuel tanks, embedded diagnostics, communications, mission processor, and navigation upgrades).						
FY 2013 Base Plans: Development & Testing capabilities associated with planned remanufacture and new build of Apache aircraft for Block III Lot 4 & 6 configuration (joint interoperability, crashworthy fuel tanks, embedded diagnostics, communications, mission processor, and navigation upgrades).						
Title: Other Major Contracts		2.348	14.854	8.293	-	8.293
		Articles: 0	0			
Description: Funding is provided for the following effort						
FY 2011 Accomplishments: Development & Testing associated with Block III Lot 1-3 aircraft.						
FY 2012 Plans: Development & Testing capabilities associated with Block III Lot 4 & 6 aircraft / future configurations that will enhance operational capabilities.						
FY 2013 Base Plans: Continue development & Testing capabilities associated with Block III Lot 4 & 6 aircraft / future configurations that will enhance operational capabilities. Follow on Development (RFI Passive Ranging, MTM, RFI Frequency Expansion). Prime contract to develop two (2) MRL configurations						
Title: Program Support Activities		3.320	11.471	20.460	-	20.460
		Articles: 0	0			

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: GFE supporting AB3 tests</p> <p>FY 2012 Plans: GFE supporting AB3 tests</p> <p>FY 2013 Base Plans: GFE supporting AB3 tests</p>					
<p>Title: Government Participation, Operational Assessments</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Development Testing Operational T&E</p> <p>FY 2012 Plans: Development Testing Operational T&E</p> <p>FY 2013 Base Plans: Development Testing Operational T&E. Government test oversight, test ranges, flight hour costs for MRL testing.</p>	6.800 0	12.855 0	10.596	-	10.596
<p>Title: Management Services</p> <p align="right">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2012 Plans: Payroll, TDY, Support Contractors, Matrix Support</p> <p>FY 2013 Base Plans: Payroll, TDY, Support Contractors, Matrix Support</p>	-	0.489 0	1.585	-	1.585
Accomplishments/Planned Programs Subtotals	90.668	92.653	124.450	-	124.450

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• AH-64 MODS: <i>APA, SSN AA6606</i>	1,045.740	331.230	178.805		178.805		86.691	113.448	74.922	580.576	2,578.768
• AH-64 APACHE BLOCK IIIA REMAN: <i>APA, SSN A05111</i>	491.034	561.269	684.822		684.822		517.778	605.877	526.239	5,461.243	9,467.042
• AH-64 APACHE BLOCK IIIB NEW BUILD: <i>APA, SSN A05133</i>		104.263	300.114	71.000	371.114		385.147	95.643	391.868	0.000	1,823.271

D. Acquisition Strategy

The NRE will encompass subsystem integration and will utilize existing test aircraft, incorporate the technical insertions, and initiate appropriate qualification and operational flight-testing. The Low Rate Initial Production (LRIP) effort includes a total quantity of 51 aircraft, with deliveries completing in December 2013. These 51 LRIP aircraft will be used for operational testing, First Unit Equipped (FUE), and training base fielding.

In Oct 10, a contract for Apache Block III Lot 1 (8 aircraft) was awarded to initiate LRIP. Additional options for Lot 2a (16 aircraft), Lot 2b (19 aircraft) and Lot 2c (8 aircraft) are part of the LRIP Contract plan.

In early 2012, the existing Engineering Manufacturing Development (EMD) effort will be modified to incorporate development and testing to support the AB3 Lot 4 and Lot 6 production configurations.

In FY13, a contract for Apache Block III Lot 3, initiating Full Rate Production, will be awarded with options for Lot 4, Lot 5 and will continue to a total of 690 remanufactured and new build aircraft.

Training device concurrency will be maintained with each technical insertion. The EMD effort is managed as Cost Reimbursable. Production efforts will be awarded as Firm Fixed Price (FFP) and include the Advance Procurement requirements.

MRL Contract will be a full-and-open competition for launcher development. Government developed and controlled Performance Specification and Interface Control Documents will be used to ensure the MRL meets user requirements, utilizes open system architectures, addresses multi-service interoperability, provides a low-risk program, and supports future growth and integration for additional Hydra-70 digital platforms. Market research will be used to refine Government requirements and interfaces to ensure a robust, competitive environment. The request for proposal and ensuing proposal evaluations will emphasize Government data rights, technical data package delivery, and total life-cycle cost of the launcher as factors affecting contractor selection. This is emphasized to provide a best value solution to support the Soldier.

Multi-year authority may be requested for the out years.

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services (In-House, Travel, etc.)	MIPR	PMO AAH, Matrix Support, AMCOM Express:Redstone Arsenal, AL	-	0.489		0.774		-		0.774	Continuing	Continuing	Continuing
Management Services (In-House, Travel, etc.)	MIPR	PEO Missiles & Space, Matrix Support, AMCOM Express, SETA:Huntsville, AL	-	-		0.811		-		0.811	Continuing	Continuing	0.000
Subtotal			-	0.489		1.585		-		1.585			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
The Boeing Company	SS/CPIF	Boeing Contracts:Mesa, AZ	78.200	52.984		83.516		-		83.516	Continuing	Continuing	Continuing
Longbow Limited Liability (LBL) Contracts	SS/CPIF	Longbow Limited Liability (LBL) Contracts:Orlando, FL and Baltimore, MD	2.348	14.854		1.810		-		1.810	Continuing	Continuing	Continuing
Lockheed Martin	SS/CPIF	Lockheed Martin Contracts:Orlando, FL	-	-		0.470		-		0.470	Continuing	Continuing	Continuing
Modernized Rocket Launcher Development - Prime	TBD	TBD:TBD	-	-		5.253		-		5.253	Continuing	Continuing	0.000
Boeing - MRL SW and Integration	TBD	Boeing Company:Mesa, AZ	-	-		0.760		-		0.760	Continuing	Continuing	0.000
Subtotal			80.548	67.838		91.809		-		91.809			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Initial Operational Test & Eval					■																							
Full Rate Production Decision								■																				
Follow-On Test & Eval I															■													
Follow-On Test & Eval II																				■								
MRL Design												■																
MRL PDR												■																
MRL Prototypes												■																
MRL CDR																■												
MRL Integration and Test																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Operational Test & Eval	2	2012	2	2012
Full Rate Production Decision	4	2012	4	2012
Follow-On Test & Eval I	2	2014	2	2014
Follow-On Test & Eval II	3	2015	4	2015
MRL Design	2	2013	1	2014
MRL PDR	3	2013	3	2013
MRL Prototypes	4	2013	4	2013
MRL CDR	1	2014	1	2014
MRL Integration and Test	2	2014	4	2014

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Exhibit R-5, RDT&E Termination Liability: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D17: <i>APACHE BLOCK III</i>
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Cost (\$ in Millions)	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Program Termination Liability	9.067	9.265	12.445	15.397	16.002	13.819	11.437

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D18: <i>Fixed Wing Aircraft</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
D18: <i>Fixed Wing Aircraft</i>	-	-	0.979	-	0.979	0.957	1.084	0.635	1.012	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Not applicable for this item.

A. Mission Description and Budget Item Justification

The budget line provides for Non-Recurring Engineering (NRE) and integration of all Army fixed wing aircraft such as C-31A, UV-18, UV-20, CE-182, CE-208, O-2, T-34, U-21, B-300, King Air 350, C-12, RC-12, UC-35, C-23, C-26, C-37, C-20, and EO-5 for aircraft communications, navigation, surveillance (CNS) and Department of Defense (DoD) mandated safety equipment to meet current and evolving international standards. FY13 Research, Development, Test, and Evaluation (RDT&E) dollars in the amount of \$0.979 million provides funding for NRE of CNS equipment that meets current and future air traffic management requirements. The increased performance will permit the Army fixed wing aircraft to operate in compliance with other existing and emerging regulations. As requirements for new avionics equipment continue, aircraft delays and airspace exclusion are likely for aircraft not properly equipped. Upgrade of communication and navigation systems will improve aircraft performance and enhance reliability and maintainability, thereby improving aircraft availability for mission requirements. The associated aircraft modifications will assure worldwide deployability for those required to deploy.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Non-recurring Engineering	-	-	0.940	-	0.940
Description: Non-recurring engineering efforts provide improved performance to Army fixed wing aircraft for communication, navigation, and surveillance equipment.					
FY 2013 Base Plans: Initiate non-recurring engineering efforts in order to improve performance to Army fixed wing aircraft for communication, navigation, and surveillance equipment.					
Title: Program Management	-	-	0.039	-	0.039
Description: Program Management of PM FW					
FY 2013 Base Plans: Program Management of PM FW					
Accomplishments/Planned Programs Subtotals	-	-	0.979	-	0.979

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D18: <i>Fixed Wing Aircraft</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• AA0270: <i>AA0270 Utility/Cargo Airplane Mods</i>			24.842		24.842		15.167	22.612	23.833	0.000	115.351
• AA0703: <i>AA0703 GATM- Fixed Wing Aircraft</i>			17.179		17.179		12.569	19.063	19.065	0.000	82.448

D. Acquisition Strategy

The US Army Fixed Wing acquisition and modernization strategy leverages commercial derivative aircraft and includes cockpit modernization for civil and tactical upgrades of military unique equipment. These equipment upgrades include items such as dual Flight Management Systems, Terrain Area Warning Systems, AN/APX-119&123 transponder, Mode S/5 transponders, Satellite Communications, Traffic Alert and Collision Avoidance II, Flight Data Recorders, Cockpit Voice Recorders, AN/ARC-210/231 communication radios, TASMANTA-24 military Global Positioning System (GPS), Wide Area Augmentation System/ Localizer Performance with Vertical Guidance, Automatic Dependence Surveillance Broadcast (ADS-B) Out, M-code GPS, Blue Force Tracker, and Smart books. The Research Development Test & Evaluation funding associated with this program provides for Non-Recurring Engineering and integration for installation of these required modernization efforts on Army fixed wing aircraft.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D18: <i>Fixed Wing Aircraft</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203744A: <i>Aircraft Modifications/Product Improvement Programs</i>	PROJECT D18: <i>Fixed Wing Aircraft</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FW Non-recurring Engineering	1	2013	4	2017

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

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>			PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	0.688	0.822	0.898	-	0.898	0.423	0.326	0.330	0.334	Continuing	Continuing
106: <i>A/C COMPON IMPROV PROG</i>	0.688	0.822	0.898	-	0.898	0.423	0.326	0.330	0.334	Continuing	Continuing

A. Mission Description and Budget Item Justification

Aircraft Engine Component Improvement Program (CIP) develops, tests, and qualifies improvements to aircraft engine components to correct service-revealed deficiencies, improve flight safety, enhance readiness and reduce operating and support (O&S) costs. In addition, CIP provides the test vehicles for the testing and qualification efforts required as a part of the Army's Critical Safety Item (CSI) program. CIP is included in the RDTE budget vice procurement appropriations in accordance with congressional direction. The majority of CIP funding has been reallocated to PE 273744 beginning in FY07. Non-program specific Auxiliary Power Unit (APU) as well as Unmanned Aerial Vehicle (UAV) safety and readiness issues will continue to be addressed under this PE.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	0.710	0.823	0.889	-	0.889
Current President's Budget	0.688	0.822	0.898	-	0.898
Total Adjustments	-0.022	-0.001	0.009	-	0.009
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.022	-0.001	0.009	-	0.009

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>				PROJECT 106: <i>A/C COMPON IMPROV PROG</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
106: <i>A/C COMPON IMPROV PROG</i>	0.688	0.822	0.898	-	0.898	0.423	0.326	0.330	0.334	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Aircraft Engine Component Improvement Program (CIP) develops, tests, and qualifies improvements to aircraft engine components to correct service-revealed deficiencies, improve flight safety, enhance readiness and reduce operating and support (O&S) costs. In addition, CIP provides the test vehicles for the testing and qualification efforts required as a part of the Army's Critical Safety Item (CSI) program. CIP is included in the RDTE budget vice procurement appropriations in accordance with congressional direction. The majority of CIP funding has been reallocated to PE 273744 beginning in FY07. Non-program specific Auxiliary Power Unit (APU) as well as Unmanned Aerial Vehicle (UAV) safety and readiness issues will continue to be addressed under this PE.

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

	FY 2011	FY 2012	FY 2013
<p>Title: T700 Engine</p> <p align="right">Articles:</p> <p>Description: Majority of funding for this program has been reallocated to PE 273744. Previously, this program addressed flight safety and readiness problems that arise in the field by providing timely engineering support, continued the development of the T700-GE-701D, provided engineering support of fielded engines to enhance war fighting capability and improve durability and reliability while reducing cost of ownership.</p> <p>FY 2011 Accomplishments: Continued effort on overspeed/burst testing for the T700-GE-701D engine to address safety concerns.</p> <p>FY 2012 Plans: Complete overspeed and burst testing and qualification reports for the T700-GE-701D engine, provide rapid response to resolve field related issues.</p> <p>FY 2013 Plans: Will perform an instrumented engine test to measure gas generator turbine hardware metal temperatures. Will evaluate clean air combustor shield hardware for redesign effort.</p>	0.255 0	0.321 0	0.349
<p>Title: T55 Engine</p> <p align="right">Articles:</p>	0.233 0	0.321 0	0.349

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: Provide timely support to field users, applying engineering effort to resolve unanticipated flight safety problems revealed in the field. Continue the engineering support of fielded engines to enhance war-fighting capability, improve durability and reliability while reducing CH-47 engine cost of ownership.</p> <p>FY 2011 Accomplishments: Continued 1553 ECU Effort for F Model incorporation and continued N1 Drive Line redesign and qualification.</p> <p>FY 2012 Plans: Complete 1553 ECU effort for F Model incorporation and start the ECU Software Block Update to improve ECU functionality and Start the Qualification of a new oil pump and improved T4.5 Sensor/Harness to address reliability/maintenance issues.</p> <p>FY 2013 Plans: Will complete ECU Software Block Update to improve ECU functionality and address field software issues. Will begin development of improved growth engine (-715) to address new performance, maintenance, and reliability requirements.</p>				
<p>Title: GTCP36 Auxiliary Power Unit (APU)</p> <p align="right">Articles:</p> <p>Description: Provide timely responses to technical problems arising in the field during operational use. Review operational and repair reports, perform engineering analysis of failed engines and equipment. Perform investigation and testing as required to isolate/verify reported field problems and service revealed deficiencies (SRDs).</p> <p>FY 2011 Accomplishments: Continued formulating correlation factors to publish life limits and addressed service revealed deficiencies that affect safe operation of the GTCP 36 APU.</p> <p>FY 2012 Plans: Address service revealed deficiencies that affect safe operation of the GTCP 36 series APUs.</p> <p>FY 2013 Plans: Will complete formulating correlation factors to published life limits and will address service revealed deficiencies that affect safe operation of the GTCP 36 APU</p>		0.045 0	0.030 0	0.030
<p>Title: T62 Auxiliary Power Unit (APU)</p> <p align="right">Articles:</p>		0.045 0	0.030 0	0.030

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: Provide timely responses to technical problems arising in the field during operational use. Review operational and repair reports, perform engineering analysis of failed engines and equipment. Perform investigation and testing as required to isolate/verify reported field problems and service revealed deficiencies (SRDs).</p> <p>FY 2011 Accomplishments: Continued the qualification of the Flex Fuel Manifolds and started a Class I Engineering Change Proposal (ECP) for incorporation, address service revealed deficiencies affecting the T62 APU</p> <p>FY 2012 Plans: Complete the qualification of the Flex Fuel Manifolds and submit a Class I ECP. Address service revealed deficiencies affecting safe operation of the T-62T series APUs.</p> <p>FY 2013 Plans: Will continue to address service revealed deficiencies affecting safe operation of US Army APUs.</p>				
<p>Title: UAV Shadow Engine</p> <p align="right">Articles:</p> <p>Description: UAV Shadow Engine Investigation at U.S. Army Research Laboratory (ARL) Cleveland: US Army Vehicle Technology Directorate (VTD) at ARL Cleveland. Provide research to support airworthiness, reliability and performance improvements of the Unmanned Aerial Vehicle (UAV) shadow engine. Investigate and research the technology challenges (i.e. engine performance, engine durability, engine life, and engine modifications) for reliable engine operation using JP-8 fuel and readily available MIL-spec lubricants.</p> <p>FY 2011 Accomplishments: Continued research of improved oil pump and engine bearings to improve engine life and safety; continued research on thermal barrier coatings to improve performance and durability.</p> <p>FY 2012 Plans: Continue to research improvements to address service related deficiencies.</p> <p>FY 2013 Plans: Will continue to research improvements to address service related deficiencies to improve safety and reduce O&S costs.</p>		0.067 0	0.070 0	0.060
<p>Title: In-House Support</p> <p align="right">Articles:</p> <p>Description: In-house support for the CIP engineers. Contracting support for CIP contracts.</p>		0.043 0	0.050 0	0.080

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Provided in-house support for the CIP engineers and contracting support for CIP contracts</p> <p><i>FY 2012 Plans:</i> Provide in-house support for the CIP engineers and contracting support for CIP contracts.</p> <p><i>FY 2013 Plans:</i> Will continue to provide in-house support for the CIP engineers and contracting support for CIP contracts.</p>			
Accomplishments/Planned Programs Subtotals	0.688	0.822	0.898

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

N/A

D. Acquisition Strategy

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

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
In-house Engineering	WR	AMRDEC:Redstone Arsenal, AL	2.250	0.050		0.080		-		0.080	Continuing	Continuing	Continuing
Subtotal			2.250	0.050		0.080		-		0.080			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T700 Engine	SS/IDIQ	GE-Air:Lynn, MA	61.311	0.321		0.349		-		0.349	Continuing	Continuing	Continuing
APU's	SS/IDIQ	Air Force:Kelly AFB, TX	13.647	-		-		-		-	Continuing	Continuing	0.000
T55 Engine	SS/IDIQ	Honeywell:Phoenix, AZ	29.262	0.321		0.349		-		0.349	Continuing	Continuing	Continuing
UAV Shadow Engine	Various	ARL-Vehicle Technology Directorate:TBD	0.067	0.070		0.060		-		0.060	Continuing	Continuing	0.000
APU's	SS/IDIQ	Air Force:Hill AFB, UT	2.259	0.060		0.060		-		0.060	Continuing	Continuing	Continuing
Subtotal			106.546	0.772		0.818		-		0.818			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
T-62T-2B Vibration Test	Various	Redstone Technical Text Center:Redstone Arsenal, AL	0.050	-		-		-		-	Continuing	Continuing	0.000
Subtotal			0.050	-		-		-		-			0.000

Remarks
Not Applicable

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>				PROJECT 106: <i>A/C COMPON IMPROV PROG</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	108.846	0.822		0.898		-		0.898			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
T700 Engine Temperature Survey																												
T55 Engine ECU BLock Upgrade																												
Auxiliary Power Units (APUs)																												
UAV Shadow Engine																												

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203752A: <i>Aircraft Engine Component Improvement Program</i>	PROJECT 106: <i>A/C COMPON IMPROV PROG</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
T700 Engine Temperature Survey	1	2013	4	2014
T55 Engine ECU BLock Upgrade	1	2012	4	2013
Auxiliary Power Units (APUs)	2	2012	4	2012
UAV Shadow Engine	2	2012	4	2012

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203758A: <i>Digitization</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	6.103	8.016	35.180	-	35.180	9.162	8.786	7.081	7.201	Continuing	Continuing
374: <i>HOR BATTLEFLD DIGITIZN</i>	6.103	8.016	35.180	-	35.180	9.162	8.786	7.081	7.201	Continuing	Continuing

Note

The Army will request prior approval reprogramming of the \$25M NIE funding into appropriate procurement accounts prior to execution.

A. Mission Description and Budget Item Justification

Horizontal Battlefield Digitization is a strategy that allows warfighters, from the individual soldier and platform to echelons above corps, to share critical situation awareness (SA) and command and control (C2) information. It conducts analysis and evaluation of new information technologies, concepts, and applications of integrated management activities to meet the dynamic Army acquisition technology requirements. The strategy applies digital information technologies to acquire, exchange, and employ data throughout the operational environment, and provides a clear and accurate common operational picture for leaders at all levels. This timely sharing of information significantly improves the ability of commanders and leaders to quickly make decisions, synchronize forces and fires, and increase the operational tempo. Digitization is a means of realizing a fully integrated C2/SA capability to the platoon level, including interoperability links with joint and multi-national ground forces. The major efforts included in the program element are: 1) Integration and synchronization of the Army's interoperability efforts, coordination of interoperability efforts between joint and multi-national forces, and the synchronization of combat material and training efforts to develop Army information technologies; 2) Systems engineering and integration of hardware and software interfaces between and across the warfighting functions and across multiple Program Executive Offices, providing System of Systems (SOS) capabilities that satisfy warfighter requirements and enable the execution of mission operations by providing one Common Operational Picture (COP)/Common Tactical Picture (CTP). 3) Oversee and support synchronization of LandWarNet Battle Command capabilities and ensure interoperability across the current and future force. 4) Support fielding of integrated systems to Active and Reserve Components (USARNG and USAR) in accordance with Army Force Generation (ARFORGEN). 5) Support of the the Army Equipping Enterprise System (AE2S) integration of the Force Development Investment Information System (FDIIS), Army Flow Model (AFM), and the Continuing Early Validation (CEaVa) programs into a single integrated system. This supports the Army's Equipping Strategy Army Force Generation, ARFORGEN, and consolidates capabilities to gain efficiencies. IAW the National Defense Authorization Act 804 and OSD's report to congress, Army is poised to implement the "Agile Business Process" that will result in an iterative and incremental approach to software development and hardware/software capability integration. This process will improve effectiveness in the identification, assessment and acquisition of capability solutions for the Army Network. The \$25M FY13 Network Integrated Evaluation (NIE) budgeted in this PE will resource procurements of the material solutions that results from the FY12 NIE Cycle. The Army will request prior approval reprogramming of this funding into appropriate procurement accounts prior to execution.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203758A: <i>Digitization</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	6.329	8.029	9.802	-	9.802
Current President's Budget	6.103	8.016	35.180	-	35.180
Total Adjustments	-0.226	-0.013	25.378	-	25.378
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.189	-			
• Adjustments to Budget Years	-0.037	-0.013	25.378	-	25.378

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203758A: <i>Digitization</i>	PROJECT 374: <i>HOR BATTLEFLD DIGITIZN</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
374: <i>HOR BATTLEFLD DIGITIZN</i>	6.103	8.016	35.180	-	35.180	9.162	8.786	7.081	7.201	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Horizontal Battlefield Digitization is a strategy that allows warfighters, from the individual soldier and platform to echelons above corps, to share critical situation awareness (SA) and command and control (C2) information. It conducts analysis and evaluation of new information technologies, concepts, and applications of integrated management activities to meet the dynamic Army acquisition technology requirements. The strategy applies digital information technologies to acquire exchange and employ data throughout the operational environment, and provides a clear and accurate common operational picture for leaders at all levels. This timely sharing of information significantly improves the ability of commanders and leaders to quickly make decisions, synchronize forces and fires, and increase the operational tempo. Digitization is a means of realizing a fully integrated C2/SA capability to the platoon level, including interoperability links with joint and multi-national ground forces. The major efforts included in the program element are: 1) Integration and synchronization of the Army's interoperability efforts, coordination of interoperability efforts between joint and multi-national forces, and the synchronization of combat material and training efforts to develop Army information technologies; 2) Systems engineering and integration of hardware and software interfaces between and across the warfighting functions and across multiple Program Executive Offices, providing System of Systems (SOS) integration capabilities that satisfy warfighter requirements and enable the execution of mission operations by providing one Common Operational Picture (COP)/Common Tactical Picture (CTP). 3) Oversee and support synchronization of LandWarNet Battle Command capabilities and ensure interoperability across the current and future force. 4) Support fielding of integrated systems to Active and Reserve Components (USARNG and USAR) in accordance with Army Force Generation (ARFORGEN). 5) Support the Army Equipping Enterprise System (AE2S) integration of the Force Development Investment Information System (FDIIS), Army Flow Model (AFM) and the Continuous Early Validation (CEaVa) programs into a single integrated system. This supports the Army's Equipping Strategy, ARFORGEN, and consolidates capabilities to gain efficiencies. IAW the National Defense Authorization Act 804 and OSD's report to Congress, Army is poised to implement the "Agile Business Process" that will result in an iterative and incremental approach to software development and hardware/software capability integration. This process will improve effectiveness in the identification, assessment and acquisition of capability solutions for the Army Network. The \$25M Network Integrated Evaluation (NIE) funds budgeted in FY13 in this PE will resource procurements of the material solutions that results from the FY12 NIE Cycle. The Army will request prior approval reprogramming of this funding into appropriate procurement accounts prior to execution.

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

	FY 2011	FY 2012	FY 2013
Title: Interoperability Assessment	1.252	2.088	2.560
Articles:	0	0	
Description: funds are to be used for the following efforts			
FY 2011 Accomplishments: Conduct technical interoperability assessments, perform interoperability/integration analyses, analyze networked weapon system and Situational Awareness (SA), Command and Control (C2), Command, Control, Communications, Computers, Intelligence,			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203758A: <i>Digitization</i>	PROJECT 374: <i>HOR BATTLEFLD DIGITIZN</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Surveillance, and Reconnaissance (C4ISR) systems compatibility, and assess technical and operational test plans, activities, and results. FY 2012 Plans: Conduct technical interoperability assessments, perform interoperability/integration analyses, analyze networked weapon system and Situational Awareness (SA), Command and Control (C2), Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems compatibility, and assess technical and operational test plans, activities, and results. FY 2013 Plans: Conduct technical interoperability assessments, perform interoperability/integration analyses, analyze networked weapon system and Situational Awareness (SA), Command and Control (C2), Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems compatibility, and assess technical and operational test plans, activities, and results.				
Title: SA/C2/C4ISR Description: funds are to be used for the following efforts FY 2011 Accomplishments: Integrate and synchronize interoperability across SA/C2/C4ISR programs in support of acquisition synchronization, testing, training, and fielding System of Systems capabilities to the Army Force. Continue application across current and future force. FY 2012 Plans: Integrate and synchronize interoperability across SA/C2/C4ISR programs in support of acquisition synchronization, testing, training, and fielding System of Systems capabilities to the Army Force. Continue application across current and future force. FY 2013 Plans: Integrate and synchronize interoperability across SA/C2/C4ISR programs in support of acquisition synchronization, testing, training, and fielding System of Systems capabilities to the Army Force. Continue application across current and future force.		Articles: 1.815 0	2.085 0	2.560
Title: Ditization Technical Integration Description: funds are to be for the following efforts FY 2011 Accomplishments:		Articles: 0.842 0	0.865 0	1.025

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203758A: <i>Digitization</i>	PROJECT 374: <i>HOR BATTLEFLD DIGITIZN</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Support digitization technical integration with Active and Reserve Components both CONUS and OCONUS. FY 2012 Plans: Support digitization technical integration with Active and Reserve Components both CONUS and OCONUS. FY 2013 Plans: Support digitization technical integration with Active and Reserve Components both CONUS and OCONUS.				
Title: AE2S Software Description: funds are to be for the following efforts FY 2011 Accomplishments: Procures AE2S software integration and enhancements for the single program language, single platform system that incorporates FDIIS, CEaVa, COP and AFM FY 2012 Plans: Procures AE2S software integration and enhancements for the single program language, single platform system that incorporates FDIIS, CEaVa, COP and AFM FY 2013 Plans: Procures AE2S software integration and enhancements for the single program language, single platform system that incorporates FDIIS, CEaVa, COP and AFM		Articles: 1.000 0	1.000 0	1.000
Title: Joint & Coalition Interoperability Description: funds the following efforts FY 2011 Accomplishments: Support Joint and Coalition interoperability programs to improve integration and interoperability in accordance with Army Software Blocking Policy, Joint Planning Guidance, Coalition Specifications, Joint Capabilities Integration and Development System (JCIDS) requirements. FY 2012 Plans:		Articles: 0.538 0	0.738 0	1.255

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203758A: <i>Digitization</i>	PROJECT 374: <i>HOR BATTLEFLD DIGITIZN</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Support Joint and Coalition interoperability programs to improve integration and interoperability in accordance with Army Software Blocking Policy, Joint Planning Guidance, Coalition Specifications, Joint Capabilities Integration and Development System (JCIDS) requirements. FY 2013 Plans: Support Joint and Coalition interoperability programs to improve integration and interoperability in accordance with Army Software Blocking Policy, Joint Planning Guidance, Coalition Specifications, Joint Capabilities Integration and Development System (JCIDS) requirements.				
Title: Academic Research Description: funds to be used for the following effort FY 2012 Plans: Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces. FY 2013 Plans: Apply university academic and research resources to the integration of Army complex modeling, simulation, and training in support of modernized forces.		Articles: -	0.500 0	0.570
Title: Cross-platform development Description: funds to be used for the following efforts FY 2011 Accomplishments: Manage cross-platform software and hardware development, testing, training, and fielding to ensure the coordinated interoperability for each Army Force unit rotation. FY 2012 Plans: Manage cross-platform software and hardware development, testing, training, and fielding to ensure the coordinated interoperability for each Army Force unit rotation. FY 2013 Plans:		Articles: 0.656 0	0.740 0	1.210

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203758A: <i>Digitization</i>	PROJECT 374: <i>HOR BATTLEFLD DIGITIZN</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Manage cross-platform software and hardware development, testing, training, and fielding to ensure the coordinated interoperability for each Army Force unit rotation.			
Title: Network Integrated Evaluation (NIE) Description: Funds are available for Congress to place in appropriate procurement accounts prior to execution in FY13. FY 2013 Plans: Implement agile business solutions through the Network Integrated Evaluation (NIE) cycle in FY12 that address Army system shortcomings and bring efficiency, effectiveness and affordability to an otherwise burdensome process. This process enables the Army to be more responsive to Soldiers' current needs and avoids long-term production commitments to potentially obsolete technology. Material solutions to fill capability gaps from the FY12 cycle will be ready for procurement in FY13. The Army will request prior approval reprogramming of this funding into appropriate procurement accounts prior to execution.	-	-	25.000
Accomplishments/Planned Programs Subtotals	6.103	8.016	35.180

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

D. Acquisition Strategy
To validate/demonstrate concepts and requirements, near term efforts are focused on developing a seamless battlefield software architecture and digitized hardware systems to include: evaluation of the horizontal battlefield digitization resources for systems, acquisition, integration, and testing of digital capability across multiple command and control, communications, sensors, and weapons platforms. The result will be an integrated, synchronized capability designed to meet the near-term requirements of the Stryker Brigade Combat Teams and the Army Future Force. Also supports the Army's role in joint and multi-national digitization programs, battle command efforts and Joint Battlefield Situational Awareness.

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203759A: <i>Force XXI Battle Command, Brigade and Below (FBCB2)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	3.748	-	-	-	-	-	-	-	-	Continuing	Continuing
122: <i>JOINT BATTLE COMMAND - PLATFORM (JBC-P)</i>	3.748	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

Change Summary Explanation: FY11 RDTE funding of \$3.748 million is for Command and Control (C2)/Situational Awareness (SA) Convergence. It uses Project Code 122. FBCB2 RDTE Funding in FY09 and Prior used Project Code 120.

A. Mission Description and Budget Item Justification

Force XXI Battle Command Brigade and Below (FBCB2) consists of FBCB2 and Joint Battle Command - Platforms (JBC-P) hardware and software.

Joint Battle Command - Platforms (JBC-P), which includes Blue Force Tracking and Army Aviation, provides true Joint force Command and Control (C2) Situational Awareness (SA) and communications (e.g., terrestrial, celestial) capability at the platform level through command center locations (e.g., Network Operations Centers, Theater Operation Commands (TOCs), Brigade Command Posts) and enables mission accomplishment across the entire spectrum of Joint military operations. JBC-P serves as the cornerstone for Joint Blue Force Situational Awareness (JBFSA). It provides continuous near-real-time identification of friendly locations to populate the Joint Common Operating Picture (JCOP). Joint Battle Command - Platforms (JBC-P) enhances Joint Combat Identification to increase combat effectiveness and reduces fratricide in a secure environment. It enables Joint, net-centric C2/Battle Command by seamlessly passing/sharing relevant information vertically and horizontally, within all levels of command, regardless of Service unit hierarchy. In addition to utilizing the existing FBCB2/BFT system, JBC-P system hardware consists of a family of computers (e.g., handhelds, tablets, ruggedized computers, beacons and in-dash computers), communications equipment (e.g., satellite transceivers/antennas), encryption devices (e.g., KGV-72), and ancillary equipment (e.g., Mission Data Loader, Disk Duplicator, cables, installation kits, etc.).

\$3.748 million was programmed for FY11 RDTE to pay for JBC-P C2/SA Convergence.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203759A: <i>Force XXI Battle Command, Brigade and Below (FBCB2)</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	3.935	-	-	-	-
Current President's Budget	3.748	-	-	-	-
Total Adjustments	-0.187	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.115	-			
• Adjustments to Budget Years	-0.072	-	-	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203759A: <i>Force XXI Battle Command, Brigade and Below (FBCB2)</i>	PROJECT 122: <i>JOINT BATTLE COMMAND - PLATFORM (JBC-P)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
122: <i>JOINT BATTLE COMMAND - PLATFORM (JBC-P)</i>	3.748	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Joint Battle Command - Platforms (JBC-P), which includes Blue Force Tracking and Army Aviation, provides true Joint force Command and Control (C2) Situational Awareness (SA) and communications (e.g., terrestrial, celestial) capability at the platform level through command center locations (e.g., Network Operations Centers, Theater Operation Commands (TOCs), Brigade Command Posts) and enables mission accomplishment across the entire spectrum of Joint military operations. JBC-P serves as the cornerstone for Joint Blue Force Situational Awareness (JBFSA). It provides continuous near-real-time identification of friendly locations to populate the Joint Common Operating Picture (JCOP). Joint Battle Command - Platforms (JBC-P) enhances Joint Combat Identification to increase combat effectiveness and reduces fratricide in a secure environment. It enables Joint, net-centric C2/Battle Command by seamlessly passing/sharing relevant information vertically and horizontally, within all levels of command, regardless of Service unit hierarchy. In addition to utilizing the existing FBCB2/BFT system, JBC-P system hardware consists of a family of computers (e.g., handhelds, tablets, ruggedized computers, beacons and in-dash computers), communications equipment (e.g., satellite transceivers/antennas), encryption devices (e.g., KGV-72), and ancillary equipment (e.g., Mission Data Loader, Disk Duplicator, cables, installation kits, etc.).

\$3.748 million was programmed for FY11 RDTE to pay for JBC-P C2/SA Convergence.

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

	FY 2011	FY 2012	FY 2013
Title: Army/Marine Corps JBC-P C2/SA Convergence Implementation	3.748	-	-
Articles:	0		
Description: JBC-P C2/SA Convergence			
FY 2011 Accomplishments: Army/Marine Corps JBC-P C2/SA Convergence Implementation. This is a key senior leader/JCIDS priority to increase operational capability and mission effectiveness.			
Accomplishments/Planned Programs Subtotals	3.748	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203759A: <i>Force XXI Battle Command, Brigade and Below (FBCB2)</i>	PROJECT 122: <i>JOINT BATTLE COMMAND - PLATFORM (JBC-P)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0303140A: <i>OPA W61990, Joint Battle Command - Platform (JBC-P)</i>	0.146	69.514	141.385		141.385		121.658	137.754	148.765	Continuing	Continuing
• 0604805A/589: <i>RDTE 654805/589, ARMY SYS ENGINEERING & WARFIGHTING TECH SUP</i>	9.740									0.000	9.740
• 0604805A/593: <i>RDTE 654804/593, Joint Battle Command - Platform (JBC-P)</i>	53.650	61.983	20.776		20.776					Continuing	Continuing

D. Acquisition Strategy

The JBC-P program was Joint Requirements Oversight Council (JROC) approved in May 2008. RDTE funding for JBC-P began in FY10.

\$3.748 million in FY11 funding for Command and Control/Situational Awareness (C2/SA) Convergence was programmed under this PE (273759) under Project No. 122. Other RDTE funds for JBC-P were programmed in PE 654805, Project No. 589 (for FY10) and PE 654805, Project No. 593 (for FY11 and beyond).

Software Development will be primarily executed through a Memorandum Of Understanding/Memorandum of Agreement with the Army Research and Development Engineering Command (RDECOM) System Engineering Directorate (SED).

Hardware Procurement will be executed through a competitive contracting approach.

The current estimated Acquisition Schedule, as shown in the R-4 Forms, is based on the approved JBC-P 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-2, RDT&E Budget Item Justification: PB 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	23.415	53.015	20.733	-	20.733	7.646	11.964	4.047	4.147	Continuing	Continuing
036: <i>PATRIOT PROD IMP PGM</i>	11.064	42.831	-	-	-	-	-	-	-	Continuing	Continuing
038: <i>AVENGER PIP</i>	-	-	-	-	-	6.068	11.964	4.047	4.147	Continuing	Continuing
DF8: <i>DF8</i>	3.021	0.200	-	-	-	-	-	-	-	Continuing	Continuing
DF9: <i>DF9</i>	9.330	-	-	-	-	-	-	-	-	Continuing	Continuing
DT5: <i>STINGER PRODUCT IMPROVEMENT</i>	-	9.984	20.733	-	20.733	1.578	-	-	-	Continuing	Continuing

Note

FY13 is a key year, with the Radar Digital Processor (RDP) development to support near term fielding. RDP provides additional performance, to include Mode 5 IFF (Identification, Friend or Foe) to reduce fratricide potential. The RDP and related software will begin fielding in FY15. The FY14 Requirement for RDP testing and support is \$17M less than the FY13 Requirement as the task completes.

Development and testing of the Upper Tier Debris Mitigation and THAAD - Patriot interoperability efforts also peak in FY13, with the FY14 requirement \$9M less than the FY13 requirement. The anticipated fielding of THAAD underscores the growing complexity of the battle space and the greater need for integration between weapon systems.

A. Mission Description and Budget Item Justification

Project 036: Patriot is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. The Patriot Product Improvement Program upgrades the Patriot system to address operational lessons learned, enhancements to joint force interoperability, and other system performance improvements to provide overmatch capability with the emerging threat. Efforts will be made to expedite Patriot materiel solutions (e.g. Radar Digital Processor, Communications Upgrades, Radars on the Net) to both enhance capability and facilitate integration into the IAMD architecture.

Project 038 Avenger Product Improvement Program (PIP): Avenger is a highly mobile and transportable surface-to-air missile/gun weapon system mated with a High Mobility Multipurpose Wheeled Vehicle (HMMWV). Mounted on a turret are a .50 caliber M3P machine gun and two Standard Vehicle Missile Launchers (SVMLs). Each SVML contains four STINGER missiles. It is operated by a two-man crew for defense against Rotary Wing (RW) and fixed-Winged (FW) aircraft at low altitude, day or night, and in clear or adverse weather.

The Avenger Product Improvement Program (PIP) provides for the design, development, integration and testing of new LRUs on the Avenger Weapon System.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>
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STINGER Product Improvement: The STINGER Block I missile is an advanced, fire-and-forget, short-range, man-portable, air defense weapon system. It provides low-altitude defense for ground forces against attack or aerial observation by low-flying Unmanned Aerial System (UAS), Cruise Missile (CM), RW, and FW threats. STINGER employs an infrared (heat seeking)/ultraviolet seeker to guide to the target. STINGER Block I missiles have extensive infrared counter-countermeasure capabilities and can engage targets from any aspect to include head-on. The missile utilizes a high-explosive, hit-to-kill warhead. STINGER can be fired from the shoulder or from a variety of platforms to include ground vehicles and helicopters. The missile is delivered as a certified wooden round and requires no field testing or maintenance.

The STINGER Product Improvement provides for design, development, test and integration of a proximity fuze assembly into existing Stinger Block I missiles. The proximity fuze assembly provides the capability to meet the Unmanned Aerial System Defense (UAS-D) requirements stated in the Operational Requirements Document for the STINGER Guided Missile System. When integration is completed the Stinger Block I missile with the new developed proximity fuze assembly will have increased capability with a 10 year service life.

B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	24.280	44.560	46.287	-	46.287
Current President's Budget	23.415	53.015	20.733	-	20.733
Total Adjustments	-0.865	8.455	-25.554	-	-25.554
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.723	-			
• Adjustments to Budget Years	-	-	-25.554	-	-25.554
• Other Adjustments 1	-0.142	8.455	-	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT 036: <i>PATRIOT PROD IMP PGM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
036: <i>PATRIOT PROD IMP PGM</i>	11.064	42.831	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Patriot Product Improvement Program is now reported under Program Element 677865, DV8.

A. Mission Description and Budget Item Justification

Project 036: Patriot is an advanced Surface-to-Air guided missile system with a high probability of kill capable of operation in the presence of Electronic Countermeasures (ECM) and able to conduct multiple simultaneous engagements against high performance air breathing targets and ballistic missiles likely to be encountered by US Forces. The Patriot Product Improvement Program provides for the upgrade of the Patriot System through individual materiel changes. These improvements focus on the evolving threat and will provide a more robust capability and the foundation upon which future improvements can more readily be incorporated with minimal hardware changes. Efforts will be made to expedite Patriot materiel solutions (e.g. Radar Digital Processor, Communications Upgrades, Radars on the Net) to both enhance capability and facilitate integration into the IAMD architecture.

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

	FY 2011	FY 2012	FY 2013
Title: Patriot Product Improvement	11.064	42.831	-
Articles:	0	0	
Description: Software Improvement for Threat Evolution			
FY 2011 Accomplishments: Continued Software Improvement for Threat Evolution.			
FY 2012 Plans: Continued Software Improvement for Threat Evolution and Radar Digital Processor development efforts.			
Accomplishments/Planned Programs Subtotals	11.064	42.831	-

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

N/A

D. Acquisition Strategy

The design objective of the Patriot system was to provide a baseline system capable of modification to cope with continuing threat evolution. This program minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. The Patriot Product Improvement program upgrades the Patriot system to address operational lessons learned, enhancements to joint force interoperability and communications, and other system performance

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	036: <i>PATRIOT PROD IMP PGM</i>

improvements to provide overmatch capability against the emerging threat. Upgrades are implemented through individual hardware and software materiel changes and fielded incrementally. This program encompasses several changes which will require the use of a variety of acquisition methods to develop, test, procure and field.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT 036: <i>PATRIOT PROD IMP PGM</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	RSA:various	25.955	0.535		-		-		-	0.000	26.490	Continuing
U.S. Contracts	C/FFP	Intuitive Research and Technology Corp. (IRTC):Huntsville, AL	1.028	0.377		-		-		-	0.000	1.405	Continuing
Subtotal			26.983	0.912		-		-		-	0.000	27.895	

Remarks
Non-Applicable (N/A); Redstone Arsenal (RSA)

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Improvement for Threat Evolution	Various	Multiple:Multiple	68.997	5.773		-		-		-	0.000	74.770	0.000
Radar Digital Processor (RDP)	Various	Raytheon:Massachusetts	-	35.400		-		-		-	0.000	35.400	0.000
Subtotal			68.997	41.173		-		-		-	0.000	110.170	0.000

Remarks
Sole Source-Firm Fixed Price (SS-FFP)

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RDEC and Other Govt Agencies	Various	RSA:Various	103.891	0.746		-		-		-	0.000	104.637	Continuing
Subtotal			103.891	0.746		-		-		-	0.000	104.637	

Remarks
Aviation and Missile Command (AMCOM), Research and Development and Engineering Center (RDEC)

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>				PROJECT 036: <i>PATRIOT PROD IMP PGM</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	199.871	42.831		-		-		-	0.000	242.702	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT 036: <i>PATRIOT PROD IMP PGM</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PDB 7 Fielding (Modernized Adjunct Processor) IOC																												
Radar Digital Processor Development																												
PDB 8 (RDP)																												
Evolutionary Development Program																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT 036: <i>PATRIOT PROD IMP PGM</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PDB 7 Fielding (Modernized Adjunct Processor) IOC	1	2013	1	2013
Radar Digital Processor Development	1	2012	4	2014
PDB 8 (RDP)	1	2016	1	2016
Evolutionary Development Program	1	2013	4	2015

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT 038: <i>AVENGER PIP</i>
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COST (\$ in Millions)	COST (\$ in Millions)		FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
	FY 2011	FY 2012									
038: <i>AVENGER PIP</i>	-	-	-	-	-	6.068	11.964	4.047	4.147	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Project 038 Avenger Production Improvement Program (PIP) - is a New Start FY 2014.

A. Mission Description and Budget Item Justification
Funds are provided for Avenger PIP.

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

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

D. Acquisition Strategy
N/A

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT DF8: <i>DF8</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DF8: <i>DF8</i>	3.021	0.200	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

DF8 Funding was realigned to Program Element 0203808, DS1.

A. Mission Description and Budget Item Justification

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

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

	FY 2011	FY 2012	FY 2013
Title: DF8	3.021	0.200	-
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2011 Accomplishments: Program will be reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.			
FY 2012 Plans: Program will be reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.			
Accomplishments/Planned Programs Subtotals	3.021	0.200	-

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT DF9: <i>DF9</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DF9: <i>DF9</i>	9.330	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

DF9 Funding was realigned to Program Element 0203808, DS2

A. Mission Description and Budget Item Justification

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

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

	FY 2011	FY 2012	FY 2013
Title: DF 9	9.330	-	-
Articles:	0		
Description: Funding is provided for the following effort			
FY 2011 Accomplishments: Information for this program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.			
Accomplishments/Planned Programs Subtotals	9.330	-	-

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>				PROJECT DT5: <i>STINGER PRODUCT IMPROVEMENT</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DT5: <i>STINGER PRODUCT IMPROVEMENT</i>	-	9.984	20.733	-	20.733	1.578	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

This effort funds the design, development and testing of the STINGER Proximity Fuze and integrates the Proximity Fuze into the STINGER Block I missile.

A. Mission Description and Budget Item Justification

The STINGER Block I missile is an advanced, fire-and-forget, short-range, man-portable, air defense weapon system. It provides low-altitude defense for ground forces against attack or aerial observation by low-flying Unmanned Aerial System (UAS), Cruise Missile (CM), Rotary Wing (RW), and Fixed-Wing (FW) threats. STINGER employs an infrared (heat seeking)/ultraviolet seeker to guide to the target. STINGER Block I has extensive infrared counter-countermeasure capabilities and can engage targets from any aspect to include head-on. The missile utilizes a high-explosive, hit-to-kill warhead. STINGER can be fired from the shoulder or from a variety of platforms to include ground vehicles and helicopters. The missile is delivered as a certified wooden round and requires no field testing or maintenance.

The STINGER Product Improvement provides for design, development, test and integration of a proximity fuze assembly into existing Stinger Block I missiles. The proximity fuze assembly provides the capability to meet the Unmanned Aerial System Defense (UAS-D) requirements stated in the Operational Requirements Document for the STINGER Guided Missile System. When integration is completed the Stinger Block I missile with the new developed proximity fuze assembly will have increased capability with a 10 year service life.

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

	FY 2011	FY 2012	FY 2013
Title: Proximity Fuze Development	-	9.454	15.383
Articles:		0	
Description: This effort funds the design and development of a Proximity Fuze assembly and integrates into existing STINGER Block I missiles			
FY 2012 Plans: Develop requirements, define functionality, establish allocated and product baselines, and perform detail design and development of proximity fuze and integration methods and processes. Perform producibility engineering, build brass boards and conduct component and subsystem test. Perform technical assessments, concept studies, cost reduction, risk reduction, threat analysis, and required documentation.			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT DT5: <i>STINGER PRODUCT IMPROVEMENT</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Complete design and development of proximity fuze and Block I missile integration method and processes. Integrate warhead with proximity fuze and integrate warhead/proximity fuze assembly into existing Stinger Block I missiles for Guided Test Vehicles and All-Up-Rounds for testing. Perform technical assessments, concept studies, cost reduction, risk reduction, and develop required documentation.			
Title: Test and Evaluation Description: This effort funds Government and contractor Developmental and Operational tests. FY 2013 Plans: Perform government and contractor Developmental and Operational flight test, test for hazard classification, international test operating procedures, lethality, and fuze board.	-	-	4.650
Title: Management Support Description: This effort funds government management and technical support. FY 2012 Plans: Provide government management, technical and administrative support for the program in FY 2012. FY 2013 Plans: Provide government management, technical and administrative support for the program in FY 2013.	-	0.530 0	0.700
Accomplishments/Planned Programs Subtotals	-	9.984	20.733

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE0604869A: <i>Proj M06, Patriot.MEADS Compined Aggregate Program (CAP)</i>	450.584	389.630	400.861		400.861					Continuing	Continuing
• PE0605456A: <i>Proj PA3, Pac-3/MSE Missile</i>	121.475	88.909	69.029		69.029		130.348	63.975	65.771	Continuing	Continuing
• SSN C53101: <i>MSE Missile</i>		74.953	12.850		12.850		505.084	596.387	566.757	Continuing	Continuing
• PE0102419A: <i>Proj E55, JLENS</i>	399.477	327.338	190.422		190.422		32.480	24.130	24.612	Continuing	Continuing
• PE0605455A: <i>Proj S35, SLAMRAAM</i>	18.358	1.529								Continuing	Continuing

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT DT5: <i>STINGER PRODUCT IMPROVEMENT</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• SSN C81002: <i>SLAMRAAM Launcher</i>	2.355									Continuing	Continuing
• PE 0604319A: <i>Proj DU3, IFPC2 (FY 2011/2012 PE0603305A IFPC II- Intercept)</i>	4.143	9.269	76.039		76.039		122.355	146.463	151.769	Continuing	Continuing
• SSN WK5053: <i>FAAD GBS</i>	258.413	3.958	7.980		7.980					Continuing	Continuing
• PE0605457A: <i>Proj S40, Army Integrated Air and Missile Defense (AIAMD)</i>	246.691	270.180	262.211		262.211		394.260	210.580	135.072	Continuing	Continuing
• SSN BZ5075: <i>Army IAMD Battle Command system (IBCS)</i>							103.453	281.828	426.582	Continuing	Continuing
• PE 0208053: <i>Proj 635, Joint Tact Grd Station - PI (MIP)</i>	12.005	27.586	31.738		31.738		8.006	8.134	8.314	Continuing	Continuing
• SSN BZ8401: <i>Joint Tactical Ground Station (JTAGS)</i>	9.227	1.199	2.680		2.680		4.432	4.496	4.768	Continuing	Continuing
• PE 0604820A: <i>Proj E10, Sentinel</i>		2.885	3.486		3.486		1.948	2.972	3.022	Continuing	Continuing

D. Acquisition Strategy

In FY 2012 the Stinger Based Systems (SBS) Product Office will award a proximity fuze development contract for the design, development, test and integration of a proximity fuze assembly into existing Stinger Block I missiles. The proximity fuze assembly provides the capability to meet the Unmanned Aerial System Defense (UAS-D) requirements stated in the Operational Requirements Document for the STINGER Guided Missile System. When integration is completed the Stinger Block I missile with the new developed proximity fuze assembly will have increased capability with a 10 year service life.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT DT5: <i>STINGER PRODUCT IMPROVEMENT</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgt/Admin	Various	CMDS PO:Huntsville, AL	-	0.530		0.700		-		0.700	Continuing	Continuing	0.000
Subtotal			-	0.530		0.700		-		0.700			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Proximity Fuze Development	MIPR	Crane Navel Surface Warfare, and Picatinny Arsenal:Crane ,IA and Picatinny Arsenal, NJ	-	9.454		15.383		-		15.383	Continuing	Continuing	Continuing
Subtotal			-	9.454		15.383		-		15.383			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Test and Evaluation	MIPR	Crane Navel Surface Warfare Center:Crane, IA	-	-		0.400		-		0.400	Continuing	Continuing	Continuing
Government Test & Evaluation	Various	CMDS Project Office:Redstone Arsenal,AL; White Sands Missile Range, NM	-	-		4.250		-		4.250	Continuing	Continuing	0.000
Subtotal			-	-		4.650		-		4.650			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	9.984		20.733		-		20.733			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT DT5: <i>STINGER PRODUCT IMPROVEMENT</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contract Award																												
Proximity Fuze Preliminary Design Review																												
Proximity Fuze Critical Design Review																												
Proximity Fuze Development (PFD)																												
PFD Development/Operational Test																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203801A: <i>Missile/Air Defense Product Improvement Program</i>	PROJECT DT5: <i>STINGER PRODUCT IMPROVEMENT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contract Award	3	2012	3	2012
Proximity Fuze Preliminary Design Review	4	2012	4	2012
Proximity Fuze Critical Design Review	2	2013	2	2013
Proximity Fuze Development (PFD)	2	2012	2	2014
PFD Development/Operational Test	4	2013	2	2014

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

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i>			PE 0203808A: <i>TRACTOR CARD</i>								
BA 7: <i>Operational Systems Development</i>											
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	14.340	42.487	63.243	-	63.243	18.778	19.834	19.312	19.611	Continuing	Continuing
DS1: <i>TRACTOR BARN</i>	-	13.528	32.347	-	32.347	-	-	-	-	Continuing	Continuing
DS2: <i>TRACTOR PUMA</i>	-	10.213	13.073	-	13.073	1.517	2.277	1.518	1.518	Continuing	Continuing
E11: <i>DE11</i>	14.340	18.746	17.823	-	17.823	17.261	17.557	17.794	18.093	Continuing	Continuing

Note

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

A. Mission Description and Budget Item Justification

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	14.870	42.554	28.065	-	28.065
Current President's Budget	14.340	42.487	63.243	-	63.243
Total Adjustments	-0.530	-0.067	35.178	-	35.178
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.500	-			
• SBIR/STTR Transfer	-0.443	-			
• Adjustments to Budget Years	-	-	35.178	-	35.178
• Other Adjustments 1	1.413	-0.067	-	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203808A: <i>TRACTOR CARD</i>	PROJECT DS1: <i>TRACTOR BARN</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DS1: <i>TRACTOR BARN</i>	-	13.528	32.347	-	32.347	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

A. Mission Description and Budget Item Justification

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

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

	FY 2011	FY 2012	FY 2013
Title: .DS1 Tractor Barn	-	13.528	32.347
Articles:		0	
Description: DS1			
FY 2012 Plans: Program will be reported in accordance with Title 10, United States Code, Section 119(a)(1).			
FY 2013 Plans: Program will be reported in accordance with Title 10, United States Code, Section 119(a)(1).			
Accomplishments/Planned Programs Subtotals	-	13.528	32.347

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

N/A

D. Acquisition Strategy

Not Applicable

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203808A: <i>TRACTOR CARD</i>	PROJECT DS2: <i>TRACTOR PUMA</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DS2: <i>TRACTOR PUMA</i>	-	10.213	13.073	-	13.073	1.517	2.277	1.518	1.518	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

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

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

	FY 2011	FY 2012	FY 2013
Title: .DS2 Tractor Puma	-	10.213	13.073
Articles:		0	
Description: DS2			
FY 2012 Plans: Program will be reported in accordance with Title 10, United States Code, Section 119(a)(1).			
FY 2013 Plans: Program will be reported in accordance with Title 10, United States Code, Section 119(a)(1).			
Accomplishments/Planned Programs Subtotals	-	10.213	13.073

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

N/A

D. Acquisition Strategy

Not applicable

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0203808A: <i>TRACTOR CARD</i>	PROJECT E11: <i>DE11</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
E11: <i>DE11</i>	14.340	18.746	17.823	-	17.823	17.261	17.557	17.794	18.093	Continuing	Continuing
Quantity of RDT&E Articles											

Note

A. Mission Description and Budget Item Justification

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

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

	FY 2011	FY 2012	FY 2013
Title: Not applicable	14.340	18.746	17.823
Articles:	0	0	
Description: E11			
FY 2011 Accomplishments: Not Applicable			
FY 2012 Plans: Not Applicable			
FY 2013 Plans: Not Applicable			
Accomplishments/Planned Programs Subtotals	14.340	18.746	17.823

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

N/A

D. Acquisition Strategy

Not Applicable

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	12.403	27.630	31.397	-	31.397	14.109	7.912	8.039	8.219	Continuing	Continuing
635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>	12.403	27.630	31.397	-	31.397	14.109	7.912	8.039	8.219	Continuing	Continuing

A. Mission Description and Budget Item Justification

This system is an integral part of the overall Air and Missile Defense (AMD) architecture and will provide for an incrementally fielded Integrated Air and Missile Defense Fire Control System/capability for the composite Army Air and Missile Defense Brigades. This program element supports development of critical improvements and insertion of technology upgrades to the Joint Tactical Ground Station (JTAGS) and the research and development of the JTAGS Pre-Planned Product Improvement (P3I). JTAGS is presently a transportable information processing system that receives and processes in-theater, direct down-linked data from Defense Support Program (DSP) satellites. JTAGS disseminates warning, alerting, and cueing information on Ballistic Missiles and other tactical events of interest throughout the theater using existing communication networks. This program is designated as a DoD Space program. JTAGS provides critical support by providing Combatant Commanders near real-time warning of theater ballistic missiles and other battle space characterization information in their Areas of Responsibility (AOR). The four OCONUS deployed JTAGS units constitute the DoD's only in-theater system providing space-based warning. JTAGS is designated as the in-theater element of the United States Strategic Command's Theater Event System. JTAGS supports all Theater Missile Defense pillars and by being located in-theater, provides the shortest sensor to shooter connectivity. The objectives of the improvements are to upgrade JTAGS to a new configuration for operation with the next generation of Space Based Infrared System (SBIRS) satellites, and to improve warning accuracy and timeliness. These improvements will be accomplished in a two-Block P3I Program development effort. Block 1 activities include Information Assurance (IA) upgrades: Highly Elliptical Orbit (HEO) Automation Track Transfer (ATT) Integration bridging Initial Geosynchronous Capability (IGC); new commercial antennas; Source on Source (SoS) Upgrade; and SIPRNET capability. Utilizing FY12 and out years funding, Block 2 upgrades will be executed in two phases. Phase 1 upgrade includes desheltering five systems and the reintegration of the various hardware/software/communication systems into operation centers and Geosynchronous (GEO) scanner capability (FY 13-14).

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	12.403	27.630	31.397	-	31.397
Current President's Budget	12.403	27.630	31.397	-	31.397
Total Adjustments	-	-	-	-	-
• 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 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>				PROJECT 635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>	12.403	27.630	31.397	-	31.397	14.109	7.912	8.039	8.219	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This system is an integral part of the overall Air and Missile Defense (AMD) architecture and will provide for an incrementally fielded Integrated Air and Missile Defense Fire Control System/capability for the composite Army Air and Missile Defense Brigades. This program element supports development of critical improvements and insertion of technology upgrades to the Joint Tactical Ground Station (JTAGS) and the research and development of the JTAGS Pre-Planned Product Improvement (P3I). JTAGS is presently a transportable information processing system that receives and processes in-theater, direct down-linked data from Defense Support Program (DSP) satellites. JTAGS disseminates warning, alerting, and cueing information on Ballistic Missiles and other tactical events of interest throughout the theater using existing communication networks. This program is designated as a DoD Space program. JTAGS provides critical support by providing Combatant Commanders near real-time warning of theater ballistic missiles and other battle space characterization information in their Areas of Responsibility (AOR). The four OCONUS deployed JTAGS units constitute the DoD's only in-theater system providing space-based warning. JTAGS is designated as the in-theater element of the United States Strategic Command's Theater Event System. JTAGS supports all Theater Missile Defense pillars and by being located in-theater, provides the shortest sensor to shooter connectivity. The objectives of the improvements are to upgrade JTAGS to a new configuration for operation with the next generation of Space Based Infrared System (SBIRS) satellites, and to improve warning accuracy and timeliness. These improvements will be accomplished in a two-Block P3I Program development effort. Block 1 activities include Information Assurance (IA) upgrades: Highly Elliptical Orbit (HEO) Automation Track Transfer (ATT) Integration bridging Initial Geosynchronous Capability (IGC); new commercial antennas; Source on Source (SoS) Upgrade; and SIPRNET capability. Utilizing FY12 and out years funding, Block 2 upgrades will be executed in two phases. Phase 1 upgrade includes desheltering five systems and the reintegration of the various hardware/software/communication systems into operation centers and Geosynchronous (GEO) scanner capability (FY 13-14).

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

	FY 2011	FY 2012	FY 2013
Title: Execute Block 1 Upgrades	7.110	0.200	-
Articles:	0	0	
Description: Funding is provided for the following effort			
FY 2011 Accomplishments: Complete Block 1 development			
FY 2012 Plans: Software, Information Assurance (IA) Upgrade Testing			
Title: Software Upgrades, IA Maintenance, Software Deficiency Report (DR) Resolution and Exercise Participation	1.734	0.750	0.500
Articles:	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>	PROJECT 635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Scheduled IA Maintenance, Software Deficiency Report (DR) Resolution, and Exercise Participation</p> <p>FY 2012 Plans: Scheduled IA Maintenance, Software Deficiency Report (DR) Resolution, and Exercise Participation</p> <p>FY 2013 Plans: Fielded System Software and Information Assurance Upgrades</p>				
<p>Title: JTAGS Test and Evaluation Support</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Test of IGC</p> <p>FY 2012 Plans: Test of P3I Phase 1 System Integration into existing Command Operation Centers</p> <p>FY 2013 Plans: Completion of P3I Block 1 Phase 2 Testing</p>		0.233 0	1.700 0	1.000
		Articles:		
<p>Title: P3I Upgrades (Deshelterization; Hardware/Software Upgrades, Direct Downlink of GEO Starer Data. Includes Government IPPD)</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: P3I RFP and Source Selection</p> <p>FY 2012 Plans: Begin P3I Phase 1 Development Upgrades</p> <p>FY 2013 Plans:</p>		3.326 0	24.980 0	29.897
		Articles:		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>	PROJECT 635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Initiate Block 2 Phase 2 Development Through PDR and CDR			
Accomplishments/Planned Programs Subtotals	12.403	27.630	31.397

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• SSN BZ8401: <i>SSN BZ8401, Joint Tactical Ground Station (JTAGS)</i>	9.279	1.199	2.680		2.680		4.432	4.496	4.768	Continuing	Continuing
• PE 0208053: <i>PE 0208053, Proj 635, Joint Tactical Ground Station - P3I (MIP)</i>	12.403	27.630	31.397		31.397		7.912	8.039	8.219	Continuing	Continuing
• PE 0604869A: <i>PE 0604869A, Proj M06, Patriot/MEADS Combined Aggregate Program (CAP)</i>	467.139	406.605	396.612		396.612					Continuing	Continuing
• PE 0605456A: <i>PE 0605456A, Proj PA3, PAC-3/MSE Missile</i>	62.500	88.993	68.287		68.287		131.745	62.370	65.055	Continuing	Continuing
• SSN C53101: <i>SSN C53101, MSE Missile</i>		74.953	12.683		12.683		498.205	588.231	559.007	Continuing	Continuing
• PE 0102419A: <i>PE 0102419A, Proj E55, JLENS</i>	372.493	344.655								Continuing	Continuing
• PE 0605455A: <i>PE 0605455A, Proj S35, SLAMRAAM</i>	23.700	19.931								Continuing	Continuing
• SSN C81002: <i>SSN C81002, SLAMRAAM Launcher</i>	116.732									Continuing	Continuing
• PE 0603305A: <i>PE 0603305A, Proj TR7, Indirect Fire ProtectionProtection Capability II - Intercept</i>	4.296	21.126	75.222		75.222		114.099	144.738	150.000	Continuing	Continuing
• SSN WK5053: <i>SSN WK5053, FAAD GBS</i>	91.467	7.958	7.871		7.871					Continuing	Continuing

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>	PROJECT 635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PE 0605457A: <i>PE 0605457A, Proj S40, Army Integrated Air and Missile Defense (IAMD)</i>	251.124	270.607	259.201		259.201		389.908	373.319	313.542	Continuing	Continuing
• SSN BZ5075: <i>SSN BZ5075, Army IAMD Battle Command System (IBCS)</i>							101.700	256.859	408.525	Continuing	Continuing
• PE 0604820A: <i>PE 0604820A, Proj E10, SENTINEL</i>		2.890	3.449		3.449		1.968	2.937	2.987	Continuing	Continuing
• PE 0654741 Prj 126: <i>PE 654741, FAAD C2 ED</i>	8.262	9.739	3.631		3.631		3.423	3.464		Continuing	Continuing
• PE 0654741, Prj 146: <i>PE 654741, AIR & MSL DEFENSE PLANNING CONTROL</i>	19.227	15.532	15.275		15.275		14.823	14.992		Continuing	Continuing
• PE 0654741, Prj 149: <i>PE 654741, COUNTER ROCKETS, ARTILLERY & MORTAR</i>	6.720	57.739	53.705		53.705					Continuing	Continuing

D. Acquisition Strategy

Under this program element, critical improvements will be developed making maximum use of Non-Developmental Items (NDI)/Commercial Off-The-Shelf (COTS) components. After design and integration, the system will be subject to a thorough developmental and limited user test (LUT) to verify performance, operational effectiveness and suitability. All Block 1 activities (formerly known as Defense Support Program (DSP)-Only Multi-Mission Mobile Processor (M3P) (DM3P)) were rebaselined and resources refocused to maintain viability of JTAGS. Block 1 activities include Information Assurance (IA) upgrades; Highly Elliptical Orbit (HEO) Automation Track Transfer (ATT) Integration upgrades; and a bridging Initial Geosynchronous Capability (IGC); new commercial antennas; and SIPRNET capability. Utilizing FY12 and outyears funds, Block 2 upgrades will be executed in two phases. Phase 1 upgrade includes desheltering five systems and the reintegration of the various hardware/software/communication systems into operation centers and Geosynchronous (GEO) scanner capability (FY 13-14).

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>	PROJECT 635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government IPPD	Various	various:various	43.931	6.558		5.275		-		5.275	Continuing	Continuing	Continuing
Contractor IPPD	Various	TBD:TBD	21.551	1.678		1.750		-		1.750	Continuing	Continuing	Continuing
Subtotal			65.482	8.236		7.025		-		7.025			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Services Software	Various	Northrop Grumman:Arlington, VA	22.130	0.750		0.500		-		0.500	Continuing	Continuing	Continuing
Engineering Services Hardware	Various	Northrop Grumman:Arlington, VA	14.234	-		-		-		-	Continuing	Continuing	Continuing
Government Furnished Equipment	Various	various:various	1.510	0.200		0.350		-		0.350	Continuing	Continuing	Continuing
Development Engineering Software and Hardware	TBD	TBD:TBD	-	-		2.000		-		2.000	Continuing	Continuing	Continuing
P3I Development	Various	TBD:TBD	-	16.744		19.772		-		19.772	Continuing	Continuing	Continuing
Subtotal			37.874	17.694		22.622		-		22.622			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Integrated Product & Process Development (IPPD) Support	Various	various:various	22.902	0.450		0.750		-		0.750	Continuing	Continuing	Continuing
Subtotal			22.902	0.450		0.750		-		0.750			

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>	PROJECT 635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
A TEC	Various	various:various	5.506	1.250		1.000		-		1.000	Continuing	Continuing	Continuing	
Subtotal			5.506	1.250		1.000		-		1.000				

Remarks
N/A-Not Applicable

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	131.764	27.630		31.397		-		31.397			

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208053A: <i>Joint Tactical Ground System</i>	PROJECT 635: <i>JOINT TACT GRD STATION-P3I (MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
P3I BLOCK 1 IGC FIELDING	2	2011	2	2012
P3I JTAGS BLOCK 2	3	2012	3	2017
P3I H/W & S/W BLK 2 PHASE 1 DESHELTERIZATION AND GEO SCANNER	1	2012	2	2014
P3I GEO STARER UPGRADE (P3I BLK 2 PHASE 2 UPGRADE)	2	2013	3	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058A: <i>Joint High Speed Vessel (JHSV)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	3.041	-	0.035	-	0.035	0.038	0.040	0.041	-	Continuing	Continuing
JH1: <i>JOINT HIGH SPEED VESSEL MANUFACTURING TECHNOLOGY</i>	3.041	-	0.035	-	0.035	0.038	0.040	0.041	-	Continuing	Continuing

Note

Funding in FY13 realigned to support Army higher priority requirements.

A. Mission Description and Budget Item Justification

The Joint High Speed Vessel (JHSV) program is a merger of the Army's Theater Support Vessel (TSV) program and the Marine Corps/Navy High Speed intra-theater surface Connector (HSC) program into a joint (multi-service) High Speed Vessel program.

The JHSV program takes advantage of inherent commonality hull forms to create a more flexible asset for the Department of Defense and leverage the Navy's core competency in ship acquisition. The JHSV program will provide high speed intra-theater surface connector capability to rapidly deploy troops and equipment together and then immediately transition to execute, even in the absence of developed infrastructure, and conduct deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns. The primary missions include: support to Theater Security Cooperation Program (TSCP) and Global War on Terrorism (GWOT), littoral maneuver, and seabasing support. Department of Army (DA) and Department of Navy (DoN) will maintain separate and distinct funding streams to support this joint program. DA will resource to the critical Army requirement set validated for the joint Initial Capabilities Document (ICD) for High Speed Intra-theater Surface Connector (HSC) and the Capability Development Document (CDD) for JHSV. DA and DoN will focus on the development of common capabilities, each Department will source their unique developmental costs for unique service capabilities that cannot be incorporated into a combined solution set. FY10/11 funding will procure for the Army Integrated Logistics Support (ILS)/Integrated Electronic Technical Manuals.(IETMs).

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	3.153	3.044	3.229	-	3.229
Current President's Budget	3.041	-	0.035	-	0.035
Total Adjustments	-0.112	-3.044	-3.194	-	-3.194
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.112	-3.044	-3.194	-	-3.194

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0208058A: <i>Joint High Speed Vessel (JHSV)</i>				PROJECT JH1: <i>JOINT HIGH SPEED VESSEL MANUFACTURING TECHNOLOGY</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
JH1: <i>JOINT HIGH SPEED VESSEL MANUFACTURING TECHNOLOGY</i>	3.041	-	0.035	-	0.035	0.038	0.040	0.041	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Per the Memorandum of Agreement signed 2 May 2011, "The Army funding contained in the Program Objective Memorandum FY13-17 will be transferred to the Navy via a budget based transfer from the Army to the Navy."

A. Mission Description and Budget Item Justification

The Joint High Speed Vessel (JHSV) program is a merger of the Army's Theater Support Vessel (TSV) program and the Marine Corps/Navy High Speed intra-theater surface Connector (HSC) program into a joint (multi-service) High Speed Vessel program. The JHSV program takes advantage of inherent commonality hull forms to create a more flexible asset for the Department of Defense and leverage the Navy's core competency in ship acquisition. The JHSV program will provide high speed intra-theater surface connector capability to rapidly deploy troops and equipment together and then immediately transition to execute, even in the absence of developed infrastructure, and conduct deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns. The primary missions include: support to Theater Security Cooperation Program (TSCP) and Overseas Contingency Operations (OCO), littoral maneuver, and seabasing support. Department of Army (DA) and Department of Navy (DoN) will maintain separate and distinct funding streams to support this joint program. DA will resource to the critical Army requirement set validated for the joint Initial Capabilities Document (ICD) for High Speed Intra-theater Surface Connector (HSC) and the Capability Development Document (CDD) for JHSV. DA and DoN will focus on the development of common capabilities, each Department will source their unique developmental costs for unique service capabilities that cannot be incorporated into a combined solution set. FY12 funding will allow the Army to develop and design Army-unique Command, Control, Communications, Computers and Intelligence (C4I) and Anti-Terrorist/Force Protection Capabilities in support of the Army JHSV concept of operations.

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

	FY 2011	FY 2012	FY 2013
Title: JHSV ACQUISITION /DOCUMENTATION DEVELOPMENT	0.170	-	-
Articles:	0		
Description: FY10: Provide Program Management Support			
FY 2011 Accomplishments: PROVIDES ACQUISITION /DOCUMENTATION DEVELOPMENT			
Title: JHSV ILS	1.888	-	-
Articles:	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058A: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT JH1: <i>JOINT HIGH SPEED VESSEL MANUFACTURING TECHNOLOGY</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Description: FY10: Integrated Logistics Support (ILS)/Integrated Electronic Technical Manuals (IETMs)			
FY 2011 Accomplishments: Integrated Logistics Support (ILS)/Integrated Electronic Technical Manuals (IETMs)			
Title: JHSV PROGRAM SUPPORT			
Description: Funding is provided for the following effort			
FY 2011 Accomplishments: PROGRAM SUPPORT			
FY 2013 Plans: PROGRAM SUPPORT			
Articles:	0.983 0	-	0.035
Accomplishments/Planned Programs Subtotals	3.041	-	0.035

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u> <u>Continuing</u>
• JH1: <i>OPA 3, M11203, Joint High Speed Vessel (JHSV),</i>	203.964										

D. Acquisition Strategy

The JHSV program will combine the two separate programs (Theater Support Vessel (TSV) - Army and High Speed Connector (HSC) - Navy) and take advantage of inherent commonality of hull forms to create a more flexible asset for the Department of Defense. Based on the efforts accomplished and data collected to date by the two services, it appears that a hardware solution will incorporate the evolutionary development of commercial based high speed vessel technology employing integrated military unique capabilities/adaptations. The JHSV would be acquired competitively and production would be based in the United States. The Joint High Speed Vessel (JHSV) program's updated Acquisition Strategy is currently under development. The JHSV program Milestone A Defense Acquisition Board (DAB) was in April 2006. Milestone B occurred November 2008.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0208058A: <i>Joint High Speed Vessel (JHSV)</i>	PROJECT JH1: <i>JOINT HIGH SPEED VESSEL MANUFACTURING TECHNOLOGY</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	PM Force Projection, TACOM, Warren, MI	7.094	-		0.035		-		0.035	Continuing	Continuing	Continuing
SBIR/STTR	Various	PM Force Projection, TACOM, Warren, MI	0.086	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			7.180	-		0.035		-		0.035			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition/Documentation Development	Various	PEO Ships: Washington DC	9.047	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			9.047	-		-		-		-			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support (ILS)/Integrated Electronic Technical Manuals (IETMs)	Various	NSWCCD: Norfolk, VA	4.138	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			4.138	-		-		-		-			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			20.365	-		0.035		-		0.035			

Remarks

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0301359A: <i>SPECIAL ARMY PROGRAM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	-	-	-	-	-	-	-	-	Continuing	Continuing
000: <i>SPECIAL ARMY PROGRAM</i>	-	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

This is a Classified Program.

A. Mission Description and Budget Item Justification

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

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	-	-	-
Total Adjustments	-	-	-	-	-
• 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 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0301359A: <i>SPECIAL ARMY PROGRAM</i>	PROJECT 000: <i>SPECIAL ARMY PROGRAM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
000: <i>SPECIAL ARMY PROGRAM</i>	-	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Classified Program

A. Mission Description and Budget Item Justification

Not Applicable

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

N/A

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE								
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>			PE 0303028A: <i>Security and Intelligence Activities</i>								
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	2.850	7.591	-	7.591	2.569	2.274	2.314	2.411	Continuing	Continuing
H13: <i>INFORMATION DOMINANCE CENTER (IDC) - TIARA</i>	-	2.850	7.591	-	7.591	2.569	2.274	2.314	2.411	Continuing	Continuing

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

INSCOM's RDTE program provides the Army with low-density, high-demand, extremely advanced offensive cyberspace technologies designed to degrade, deny, disrupt, or destroy adversary C4I and shape the operational warfighting environment in order to create conditions favorable to the application of other elements of national power.

Justification: INSCOM conducts RDTE of offensive Cyberspace technologies in direct support of the full range of missions called for in the National Defense Strategy, Comprehensive National Cyber-Security Initiative, National Security Strategy, National Defense Guidance, NSPD-38, NSPD-54 and HSPD-23.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	2.854	2.739	-	2.739
Current President's Budget	-	2.850	7.591	-	7.591
Total Adjustments	-	-0.004	4.852	-	4.852
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	4.852	-	4.852
• Other Adjustments 1	-	-0.004	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303028A: <i>Security and Intelligence Activities</i>				PROJECT H13: <i>INFORMATION DOMINANCE CENTER (IDC) - TIARA</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
H13: <i>INFORMATION DOMINANCE CENTER (IDC) - TIARA</i>	-	2.850	7.591	-	7.591	2.569	2.274	2.314	2.411	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

INSCOM's RDTE program provides the Army with low-density, high-demand, extremely advanced offensive cyberspace technologies designed to degrade, deny, disrupt, or destroy adversary C4I and shape the operational warfighting environment in order to create conditions favorable to the application of other elements of national power.

Justification: INSCOM conducts RDTE of offensive Cyberspace technologies in direct support of the full range of missions called for in the National Defense Strategy, Comprehensive National Cyber-Security Initiative, National Security Strategy, National Defense Guidance, NSPD-38, NSPD-54 and HSPD-23.

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

	FY 2011	FY 2012	FY 2013
Title: Cyberspace technologies	-	2.850	7.591
Articles:		0	
Description: INSCOM's RDTE program provides the Army with low-density, high-demand, extremely advanced offensive cyberspace technologies designed to degrade, deny, disrupt, or destroy adversary C4I and shape the operational warfighting environment in order to create conditions favorable to the application of other elements of national power.			
FY 2012 Plans: Utilized to support cyberspace technologies designed to degrade, deny, disrupt, or destroy adversary C4I and shape the operational warfighting environment in order to create conditions favorable to the application of other elements of national power. Supports the conduct of offensive Cyberspace technologies in direct support of the full range of missions called for in the National Defense Strategy, Comprehensive National Cyber-Security Initiative, National Security Strategy, National Defense Guidance, NSPD-38, NSPD-54 and HSPD-23.			
FY 2013 Plans: Utilized to support cyberspace technologies designed to degrade, deny, disrupt, or destroy adversary C4I and shape the operational warfighting environment in order to create conditions favorable to the application of other elements of national power. Supports the conduct of offensive Cyberspace technologies in direct support of the full range of missions called for in the National Defense Strategy, Comprehensive National Cyber-Security Initiative, National			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303028A: <i>Security and Intelligence Activities</i>	PROJECT H13: <i>INFORMATION DOMINANCE CENTER (IDC) - TIARA</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Security Strategy, National Defense Guidance, NSPD-38, NSPD-54 and HSPD-23.			
Accomplishments/Planned Programs Subtotals	-	2.850	7.591

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303028A: <i>Security and Intelligence Activities</i>	PROJECT H13: <i>INFORMATION DOMINANCE CENTER (IDC) - TIARA</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mobile Objects/PHAEDRUS	Various	TBD:TBD	17.348	2.850		7.591		-		7.591	Continuing	Continuing	Continuing
Subtotal			17.348	2.850		7.591		-		7.591			

Remarks
 FY08 and FY09: Congressional Adds: Mobile Objects/PHAEDRUS to develop an analytical tool that leverages the value of merging structured and unstructured data into a consolidated result set providing the analyst with: 1.) a faster query and retrieval process, 2) a more comprehensive view of both types of data, and 3) enhanced situational awareness. This effort supports the development of a system that will help increase the user's recall (ability to extract relevant information) from disparaging sources and then process it to improve their understanding of the collected data.
 FY10-11: Global Horizontal Integration (GHI) is a multi-phased Department of Defense Joint experiment, led by the Army, to build a capability for real-time fusion of multi-discipline and coalition intelligence available from tactical, operational, combined, and national levels. GHI and the Information Dominance Center are complementary programs, with GHI applying IDC capabilities to Joint and Coalition environments.

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.348	2.850		7.591		-		7.591			

Remarks

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	12.232	15.684	15.961	-	15.961	9.725	10.253	5.327	5.417	Continuing	Continuing
491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>	11.525	15.684	8.380	-	8.380	9.725	10.253	5.327	5.417	Continuing	Continuing
501: <i>ARMY KEY MGT SYSTEM</i>	-	-	7.581	-	7.581	-	-	-	-	Continuing	Continuing
50B: <i>BIOMETRICS</i>	0.707	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

Prior year adjustments reflect the realignment of the Biometrics and DOD Biometrics Program Management (PM) from this Program Element (PE) into a stand-alone PE, 0607665A, Biometrics Enterprise.

A. Mission Description and Budget Item Justification

The Cryptographic Modernization (CM) program supports the implementation of the National Security Agency (NSA) developed Communications Security (COMSEC) technologies into the Army by providing COMSEC system capabilities through encryption, trusted software or standard operating procedures, and integrating these mechanisms into specific systems in support of securing the National Network Enterprise. This entails architecture studies, modeling and simulation, system integration, testing, certification, and accreditation of COMSEC systems and equipment. COMSEC technology ensures total signal and data security for all Army information systems to include any operational enhancement and specialized Army configurations. The program also assesses, develops, and integrates COMSEC tools (hardware and software) which provide protection for fixed infrastructure posts, camp or station networks as well as tactical networks. The cited work is consistent with Strategic Planning Guidance and the Army Modernization Strategy. The Army Key Management System (AKMS) automates key generation and distribution while supporting joint interoperability, providing communications and network planning with key management.

The program provides Commanders with an automated capability to plan, engineer, distribute, and manage all systems that employ Electronic Key, Electronic Protection (EP), and Signal Operating Instructions (SOI).

Army Key Management System (AKMS) consists of two Workstations, one hosting Local COMSEC Management Software (LCMS) for COMSEC Management, one hosting Automated Communication Engineering System (ACES) for Cryptonet Planning and the Simple Key Loader (SKL). LCMS is the COMSEC accounting and generation software that provides Information Systems with Cryptographic Key capability. Key Management Infrastructure (KMI) will be replacing LCMS. KMI will provide an integrated operational environment that will bring essential key management personnel and functions in-band; achieving an integrated, over the network key management solution to support emerging cryptographically modernized systems. The KMI client nodes will be the Army's subset of NSA's Key Management Infrastructure System supporting DoD GIG Net Centric and Crypto Modernization Initiatives. The Mission Planning Mission Support System (MPMSS) Interface for KMI will create a secure and highly automated interface to enable transparent provisioning of KMI products. This interface shall facilitate transparent communications between MPMSS and KMI to achieve integration between provisioning services and the communications net plan of the Warfighter. ACES provides Information Systems with Cryptonet Planning & SOI/EP Fill for Combat Net. SKLs move the ACES/LCMS data to End Crypto Units (ECUs). The Next Generation Load Device

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>
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(NGLD) Large is the fill device slated for use with the Joint Tactical Radio System (JTRS) Wideband Network Waveform(WNW) and Soldier Radio Waveform (SRW) radios, providing critical key fill and mission data set loading operations as well as preventing the need for additional redundant Software Loader Verifier (SLV) laptops in the field. The NGLD Large will support loading of Military GPS User Equipment (MGUE) which will replace all current Selective Availability Anti-Spoofing Module(SASSM) based GPS devices. It meets the critical requirement for time to first fix. The NGLD Large may also be used to configure WIN-T nodes. MIDS JTRS also intends to use this device for their fill requirements. Its internal HAIPE process will allow users to pass black keys across SIPR without having to use the Electronic Key Distribution (EKD) process. The NGLD Large also has potential in meeting Over-The-Network-Keying (OTNK) requirements.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	118.090	61.220	55.924	-	55.924
Current President's Budget	12.232	15.684	15.961	-	15.961
Total Adjustments	-105.858	-45.536	-39.963	-	-39.963
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-39.963	-	-39.963
• Other Adjustments 1	-105.858	-45.536	-	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>	11.525	15.684	8.380	-	8.380	9.725	10.253	5.327	5.417	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This program supports the implementation of the National Security Agency (NSA) developed Communications Security (COMSEC) technologies into the Army by providing COMSEC system capabilities through encryption, trusted software or standard operating procedures, and integrating these mechanisms into specified systems in support of securing the National Network Enterprise in as transparent a manner as possible.

This entails architecture studies, modeling, system integration and testing, installation kits, and certification and accreditation of Automation Information Systems. The program assesses, develops and integrates information assurance (IA)/COMSEC tools (hardware and software) which provide protection for fixed infrastructure post, camp and station networks as well as efforts on tactical networks. The cited work is consistent with Strategic Planning Guidance and the Army Modernization Plan.

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

	FY 2011	FY 2012	FY 2013
Title: Assessing emerging COMSEC hardware and software systems and products	5.980	4.827	4.942
Articles:	0	0	
Description: This program researches, assesses, tests and plans for cryptographic and information assurance technology insertions within the existing and future network infrastructure; provides the basis for adjusting COMSEC capabilities and policies to reflect the latest technologies. Supports risk mitigation of IA networked vulnerabilities in end-to-end network operations and common operating environment.			
FY 2011 Accomplishments: Continued development and planned for the transition of cryptographic and information assurance solutions to the Army Warfighter, Alternate Command Authorities (ACAs) and other Programs of Record (PORs). Researched new crypto and key management technologies and developed IA tools (Armadillo and Purge Farm). Executed concept exploration and concept validation on proof of concept prototypes, infrastructure and policies for IA/COMSEC.			
FY 2012 Plans: This Program researches new cryptographic, information assurance, and key management technologies, perform operational assessments, concept exploration and validation to develop strategies and policies capitalizing on and leveraging emerging Cryptographic and Key Management technologies. Continuing to provide information, knowledge sharing and new equipment capabilities, limitations, and impacts on the Army network to assist in bridging the gap between the tactical edge and the Army Enterprise Network. Test proof of concept prototypes and provide infrastructure support to facilitate information assurance			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>technology transition. Continue to provide guidance for the adjustment of COMSEC programs and ensure COMSEC policies remains in synchronization with the latest COMSEC technologies.</p> <p>FY 2013 Plans: This program will research new cryptographic, information assurance, and key management technologies, perform operational assessments, concept exploration and validation to develop strategies and policies capitalizing on and leveraging advanced Cryptographic and Key Management technologies. Continue providing information and knowledge sharing on new equipment capabilities, limitations, and impacts on the Army network to assist in bridging the gap between the tactical edge and the Army Enterprise Network. Test proof of concept prototypes and provide infrastructure support to facilitate information assurance technology transition. Provide guidance for the adjustment of COMSEC programs and ensure COMSEC policies remains in synchronization with the latest COMSEC technologies.</p>				
<p>Title: Cryptographic Modernization and Key Management Test and Evaluation</p> <p>Description: This Program supports the Army Cryptographic Modernization Transformational Initiative. This is accomplished by providing test and evaluation capabilities to the COMSEC community in order to assess emerging technologies before being released and approved for Army use; testing can be performed on hardware, software, or network systems.</p> <p>FY 2011 Accomplishments: Evaluated the performance Crypto Mod compliant devices, including new software releases to High Assurance Internet Protocol Encryptor (HAIPE) 4.0 devices. As part of Comprehensive National Cybersecurity Initiative (CNCI) integration, begin migration to NSA approved Commercial Off The Shelf (COTS) solutions, including secure laptop and data-at-rest solutions. Evaluated the performance of initial software releases to Key Management Infrastructure (KMI) Capability Increment (CI)-2. Began to evaluate the performance of initial Electronic Key Management System (EKMS) / Army Key Management System (AKMS) to KMI transition strategies.</p> <p>FY 2012 Plans: The Program will continue to test and evaluate advanced prototypes and cryptographic devices to confirm capability and interoperability on Army networks and systems as well as identifying risk areas for compliance with COMSEC regulations and procedures. Continuing to evaluate performance of Cryptographic Modernization (CM) compliant devices, including the initial Suite B Internet Protocol Security (IPSec) devices built based on commercial standards. This is the first step in the migration to NSA approved COTS devices for Secret and below information in place of Government Off-The-Shelf (GOTS) devices. Started evaluation of Secure Smartphones based on COTS platform for Mobile secure use. Evaluating KMI CI-2, Spiral 2 initial release and migration of initial HAIPE 4.0 compliant crypto devices to KMI based key delivery. Development plan for delivery of NSA produced keys for COTS devices. Complete evaluation of the performance of initial EKMS / AKMS to KMI transition strategies.</p>		<p>5.545</p> <p>0</p>	<p>6.357</p> <p>0</p>	<p>3.438</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>These efforts will support network operations from end-to-end throughout the force and the Common Operating Environment (COE) thus mitigating Information Assurance (IA) vulnerabilities to the national network enterprise.</p> <p>FY 2013 Plans: The Program will continue to test and evaluate advanced prototypes within the system to confirm capability and interoperability on Army networks and systems as well as identifying risk areas for compliance with COMSEC regulations and procedures. The Program will continue to test and evaluate Crypto Mod compliant devices, Suite B IPsec devices built on commercial standards, Cryptographic High Value Product (CHVP), commercial solutions for Classified Standards, and new software releases to HAIPE 4.X devices in accordance with AR 700-142 Rapid Action Revision dated October 16, 2008. Will continue to evaluate Secure Smartphone based on a COTS platform for Mobile secure use, KMI CI-2, Spiral 2 initial release, and migrate crypto devices to KMI based key delivery. Evaluate delivery of NSA produced keys for COTS devices. Complete implementation of EKMS / AKMS to KMI transition strategies.</p>			
<p>Title: Mission Planning Mission Support System (MPMSS) Interface</p> <p align="right">Articles:</p> <p>Description: The program creates a secure highly automated interface to enable transparent provisioning of Key Management Infrastructure (KMI) products. The Mission Planning Mission Support System (MP/MSS) system is to be used by both the KMI system developer and MP/MSS developers to have a standard interface to electronically exchange information, enabling Warfighter Operations; achieves integration between provisioning services and the communications net plan of the Warfighter.</p> <p>FY 2012 Plans: Continue to develop additional capabilities/upgrades if Mission Planning Mission Support System (MP/MSS). Develop the capability to validate signatures of payloads from MP/MSS using the Technical Readiness Level (TRL) 6 (client) emulator. MP/MSS moves under the AKMS funding line BA1201 in FY2013.</p>	-	4.500 0	-
Accomplishments/Planned Programs Subtotals	11.525	15.684	8.380

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

N/A

D. Acquisition Strategy

The objective of this program is to develop, integrate and validate hardware and software solutions that will secure current and objective architecture and electronic business/commerce transactions. The program focuses on completing development and evaluation of Mission Command and control Information Assurance (IA) common tools and the procurement and institutionalization of information assurance related hardware and software, as well as techniques and procedures. The objective of the DOD Crypto Modernization Program is to provide adaptive, flexible, and programmable cryptographic systems using best practices, lessons learned

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0303140A: <i>Information Systems Security Program</i>	491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>

and programmatic management to meet the challenge of modernizing the Army's aging cryptographic systems. The network operations effort will support the network operations from end-to-end throughout the force and the Common Operating Environment (COE) thus mitigating IA networked vulnerabilities to National information security systems.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	C/FFP	CECOM RDEC:CECOM RDEC APG, MD	70.773	2.547		2.360		-		2.360	Continuing	Continuing	Continuing
Hardware/Software Engineering	C/FFP	CECOM RDEC:APG, MD	5.224	-		0.800		-		0.800	Continuing	Continuing	Continuing
Information Assurance System Engineering Support	C/FFP	MITRE:McLean, VA	3.178	0.150		-		-		-	Continuing	Continuing	Continuing
C2 Protect Common Tools	C/FFP	CECOM RDEC:APG, MD	9.899	-		0.450		-		0.450	Continuing	Continuing	Continuing
Information Assurance System Engineering Support	C/FFP	DSCI Consulting:APG, MD	6.396	-		-		-		-	Continuing	Continuing	Continuing
Engineering Support	C/FFP	VIATECH:APG, MD	6.180	1.939		0.800		-		0.800	Continuing	Continuing	Continuing
Engineering Support	C/FP	CACI:APG, MD	3.100	0.500		1.000		-		1.000	Continuing	Continuing	Continuing
Engineering Support	C/CPFF	Booz Allen Hamilton:APG, MD	2.730	-		0.800		-		0.800	Continuing	Continuing	Continuing
Engineering Support	C/FP	CSC:APG, MD	14.341	2.107		2.170		-		2.170	Continuing	Continuing	Continuing
Mission Planning Mission Support System (MPMSS) Interface	C/IDIQ	TBD:TBD	-	4.500		-		-		-	0.000	4.500	0.000
Network Operations	C/TBD	TBD:TBD	-	1.941		-		-		-	0.000	1.941	0.000
Subtotal			121.821	13.684		8.380		-		8.380			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	C/CPFF	TBD:TBD	-	2.000		-		-		-	0.000	2.000	0.000
Subtotal			-	2.000		-		-		-	0.000	2.000	0.000

Remarks
Not Applicable

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Army							DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>				PROJECT 491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>				
	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	121.821	15.684		8.380		-		8.380			

Remarks

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>
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FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

EVALUATE KMI CI - 2/3	
TEST & EVALUATION OF CRYPTO PRODUCTS	

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 491: <i>INFORMATION ASSURANCE DEVELOPMENT</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EVALUATE KMI CI - 2/3	1	2012	4	2017
TEST & EVALUATION OF CRYPTO PRODUCTS	1	2012	4	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 501: <i>ARMY KEY MGT SYSTEM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
501: <i>ARMY KEY MGT SYSTEM</i>	-	-	7.581	-	7.581	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Provides Commander with an automated capability to plan, engineer, distribute, and manage all systems that employ Electronic Key, Electronic Protection (EP), and Signal Operating Instructions (SOI).

- Army Key Management System (AKMS) AKMS consists of two Workstations, one hosting Local COMSEC Management Software (LCMS) for COMSEC Management, one hosting Automated Communication Engineering System (ACES) for Cryptonet Planning and the Simple Key Loader (SKL).
- LCMS is the Communications Security (COMSEC) accounting and generation software that provides Information Systems with Cryptographic Key capability.
- Key Management Infrastructure (KMI) will be replacing LCMS. KMI will provide an integrated operational environment that will bring essential key management personnel and functions in-band; achieving an integrated, over the network key management solution to support emerging cryptographically modernized systems. The KMI client nodes will be the Army's subset of NSA's Key Management Infrastructure System supporting DoD Global Information Grid (GIG) Net Centric and Crypto Modernization Initiatives. The Mission Planning Mission Support System (MPMSS) Interface for KMI will create a secure and highly automated interface to enable transparent provisioning of KMI products. This interface shall facilitate transparent communications between MPMSS and KMI to achieve integration between provisioning services and the communications net plan of the Warfighter.
- The Next Generation Load Device (NGLD) Large is the fill device slated to provide critical key fill and mission data set loading operations as well as preventing the need for additional redundant Software Loader Verifier (SLV) laptops in the field. The NGLD Large will support loading of Military GPS User Equipment (MGUE) which will replace all current Selective Availability Anti-Spoofing Module (SAASM) based Global Positioning Satellite (GPS) devices. It meets the critical requirement for time to first fix. The NGLD Large may also be used to configure Warfighter Information Network- Tactical (WIN-T) nodes. Its internal High Assurance Internet Protocol Encryptor (HAIPE) process will allow users to pass black keys across Secure Internet Protocol, Router (SIPR) without having to use the Electronic Key Distribution (EKD) process. The NGLD Large also has potential in meeting Over-The-Network-Keying (OTNK) requirements.

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

	FY 2011	FY 2012	FY 2013
Title: Common Load Device (CLD)	-	-	7.581
Description: Funding is provided for the following effort			
FY 2013 Plans: Provides soldiers with the ability to load cryptographic key material and mission planning data into numerous emerging end cryptographic units, which will not be fully supported by any other fill devices.			
Accomplishments/Planned Programs Subtotals	-	-	7.581

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 501: <i>ARMY KEY MGT SYSTEM</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• xx: <i>TSEC - AKMS</i>	25.959	12.541	23.111		23.111		25.899	15.872	34.640	Continuing	Continuing

D. Acquisition Strategy

AKMS Milestone III was conducted/approved in FY1999. LCMS completed fielding of software v5.0.3 in FY2009 to all COMSEC custodians to provide Encrypted Key capability. LCMS hardware refresh began 2QFY2010. The AKMS acquisition strategy to procure Simple Key Loaders was updated in an Acquisition Decision Memorandum (ADM) approved by the PEO C3T Milestone Decision Authority (MDA) 3QFY2002. SKL Fielding began 3QFY2005 and continues. Science Applications International Corporation (SAIC) began efforts in 1QFY2009 to upgrade SKL software and v6.0 was released 2QFY2010 to provide interoperability with emerging systems (all services). ACES software v2.0 development began in FY2009 and was released 2QFY2010. ACES software development continues with v2.1 supporting Vista scheduled for release 2QFY2011. ACES hardware refresh occurred in FY10. FY 10 continued enhancement and support of next generation of AKMS software tools to meet emerging Army systems' requirements. In FY2010, an Engineering Change Proposal was initiated to modify the current SKL design in order to meet emerging requirements of modern end cryptographic units and Joint Tactical Radio Systems (JTRS).

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 501: <i>ARMY KEY MGT SYSTEM</i>
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	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 501: <i>ARMY KEY MGT SYSTEM</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CLD Development, Production, and Fielding	2	2013	2	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 50B: <i>BIOMETRICS</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
50B: <i>BIOMETRICS</i>	0.707	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Biometrics (measurable physical and behavioral characteristics that enable the establishment and verification of an individual's identity), is a component within the Information System Security Program (ISSP). Prior to FY11 there were two biometrics organizations executing funds described in this R Form: the Biometrics Identity Management Agency (BIMA), formerly the Biometrics Task Force (BTF), and Program Manager (PM) Department of Defense (DoD) Biometrics. Currently, only BIMA uses project 50B.

BIMA acts as the DoD proponent for biometrics; leads in the development and implementation of biometric technologies for Combatant Commands, Services, and Agencies; delivers capabilities in order to contribute to the enhancement of biometric community; increases Joint Service interoperability and; empowers the warfighter by improving operational effectiveness on the battlefield.

This program has no FY13 Base or OCO RDTE requirement.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Biometrics Identity Management Agency (BIMA)</p> <p style="text-align: right;">Articles:</p> <p>Description: Biometrics Identity Management Agency (BIMA)</p> <p>FY 2011 Accomplishments: BIMA solicits proposals for Biometric Technology Demonstrations (BTDs) with specified focus areas tailored to address current operational needs and capability gaps. These BTDs promote the identification and transition of new or emergent biometric technologies that enhance biometrics-enabled capabilities in DoD. BIMA utilizes memberships in research and development organizations as well as the annual Multiple Biometric Grand Challenge event to investigate, test and improve performance of biometric technologies and capabilities. The current focus is on face and iris recognition technology on both still and video imagery through a series of challenge problems and evaluation using large sequestered data sets. BIMA is required to use the Joint Interoperability Test Command to test biometric technologies and provide certification that biometric equipment is interoperable and can be utilized by all branches of the armed services and government.</p>	0.707 0	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303140A: <i>Information Systems Security Program</i>	PROJECT 50B: <i>BIOMETRICS</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
BIMA uses RDTE contract labor and development projects to directly impact the efficiency and operation of the Automated Biometric Identification System. Projects include Gallery Manager and Development of an Iris Quality Measurement Algorithm Tool.			
Accomplishments/Planned Programs Subtotals	0.707	-	-

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• BIMA OMA: <i>BIMA Operations and Maintenance Army</i>	27.560	27.391								0.000	54.951
• BIMA OCO OMA: <i>BIMA Operations and Maintenance Army OCO</i>	69.548									0.000	69.548

D. Acquisition Strategy

C. Acquisition Strategy Support DoD Acquisition organizations in developmental testing, systems integration, and/or independent verification and validation of biometric 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 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	123.136	160.491	120.927	-	120.927	23.475	1.543	1.461	1.537	Continuing	Continuing
083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>	79.236	126.761	96.596	-	96.596	4.656	1.389	1.413	1.437	Continuing	Continuing
08A: <i>Army Enterprise System Integration Program (AESIP)</i>	42.000	17.436	24.331	-	24.331	18.819	0.154	0.048	0.100	Continuing	Continuing
DU6: <i>Lead Materiel Integrator (LMI) DST</i>	1.900	-	-	-	-	-	-	-	-	Continuing	Continuing
VU2: <i>INSTALLATION FIXED BASE (IFB)</i>	-	16.294	-	-	-	-	-	-	-	Continuing	Continuing

Note

The FY 2013 funding change shows the Army's support of the Program's approved Army Cost Position.

A. Mission Description and Budget Item Justification

The Global Combat Support System-Army (GCSS-Army) program has two components: a functional component titled GCSS-Army and a technology enabler component titled Army Enterprise Systems Integration Program (AESIP) (formerly Product Lifecycle Management Plus (PLM+)). GCSS-Army coupled with AESIP are information and communications technology investments that will provide key enabling support to the transformation of the Army into a network-centric, knowledge-based future force. The GCSS-Army approved Joint Capability Description Document (CDD) requires an enterprise approach to replace current logistics and maintenance Standard Army Management Information Systems (STAMIS). GCSS-Army will provide the Army's Sustainment Support (CS/CSS) warfighter with a seamless flow of timely, accurate, accessible and secure information management that gives combat forces a decisive edge. AESIP will provide the system's enterprise hub services, centralized master data management and cross-functional business intelligence/analytics. GCSS-Army will implement best business practices to streamline supply, accountability, maintenance, distribution, and reporting procedures in support of the future force transition path of the Army Campaign Plan.

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE				
2040: <i>Research, Development, Test & Evaluation, Army</i>	PE 0303141A: <i>Global Combat Support System</i>				
BA 7: <i>Operational Systems Development</i>					

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	125.569	100.505	81.927	-	81.927
Current President's Budget	123.136	160.491	120.927	-	120.927
Total Adjustments	-2.433	59.986	39.000	-	39.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	59.986			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	39.000	-	39.000
• Other Adjustments 1	-2.433	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>				PROJECT 083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>	79.236	126.761	96.596	-	96.596	4.656	1.389	1.413	1.437	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Global Combat Support System-Army will provide the Army's Tactical warfighter with a seamless flow of timely, accurate, accessible, actionable, and secure information not readily available today that gives combat forces a decisive edge. GCSS-Army will modernize automated logistics by implementing best business practices to streamline supply operations, maintenance operations, property accountability, and tactical logistics and financial management and integration procedures in support of the Future Force transition path of the Army Campaign Plan. This effort will implement a comprehensive logistics automation solution for the field (deployable) and installation level Army and provide the Commander on the battlefield with an integrated, interoperable view of the battle-space in time to support decisions that will affect the outcome of combat operations. Further, it will allow the Army to meet statutory requirements for auditability. This solution implements Commercial-Off-The-Shelf (COTS) Enterprise Resource Planning (ERP) products from SAP AG. This will also allow the Army to retire multiple custom designed stand-alone business software baselines optimized to existing Army business processes and replace them with a single integrated business software baseline that has been optimized to industry defined best business practices. GCSS-Army is a key component of the Federated ERP Integration solution that will optimize tactical logistics and finance domain business processes into a single federated approach. It will eliminate the need for extensive maintenance and modification of aging, diverse software systems resulting in improved and efficient change control and configuration management through implementation of an enterprise system.

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

	FY 2011	FY 2012	FY 2013
Title: PM Operations	8.111	12.285	10.021
Articles:	0	0	
Description: Provide functional support across a wide array of specialty areas to sustain product development.			
FY 2011 Accomplishments: Provided functional support across a wide array of specialty areas to sustain product development.			
FY 2012 Plans: Continue to provide functional support across a wide array of specialty areas to sustain product development.			
FY 2013 Plans: Continue to provide functional support across a wide array of specialty areas to sustain product development.			
Title: Production and Deployment Phase Contract Activity	68.816	111.656	83.955
Articles:	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>		PROJECT 083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
<p>Description: Manage a myriad of Government contracts associated with work relating to acquisition, engineering, planning and integration activities supporting Global Combat Support System-Army (GCSS-Army). These contracts support an evolutionary development strategy using Systems Applications & Products (SAP) products and architecture. The current efforts support the Milestone Decision Authority federated approach. It is also synchronized with the Army Enterprise Systems Integration Program (AESIP), the Logistics Modernization Program (LMP), and the General Fund Enterprise Business System (GFEBS) to enable end-to-end integration of the Army's logistical and financial Enterprise Resource Planning (ERP) programs.</p> <p>FY 2011 Accomplishments: Managed a myriad of Government contracts associated with work relating to acquisition, engineering, planning and integration activities supporting production and deployment. The focus of work planned for FY 2011 included designing, building and testing required for GCSS-Army Rel 1.1. GCSS-Army successfully conducted the planned initial development testing leading to a Milestone C (MS C) decision.</p> <p>FY 2012 Plans: Following the successful FY 2011 MS C decision, GCSS-Army began the design and build phase for Release 1.2 which will continue throughout FY 2012. The 1st Qtr FY 2012 plan includes accomplishing the Initial Operational Test and Evaluation (IOT&E) for Rel 1.1 which was completed as scheduled. Based on this success, the Program plans to seek a Full Deployment Decision (FDD) for this capability in 4th Qtr FY 2012. Initial deployment activities will follow the FDD.</p> <p>FY 2013 Plans: Release 1.2 design and build efforts will continue into FY 2013.</p>				FY 2011	FY 2012	FY 2013
<p>Title: Government System Test and Evaluation</p> <p align="right">Articles:</p> <p>Description: Plans, conducts and reports on developmental tests and assists in planning, conducting, and reporting of operational and interoperability tests, assessments, and experiments in order to provide essential information for the acquisition and fielding of warfighting systems.</p> <p>FY 2011 Accomplishments: Conducted Army Test & Evaluation Command (ATEC), Operational Test Command (OTC) and Joint Interoperability Test Command (JITC) testing and evaluation of GCSS-Army Rel 1.1 which supported Milestone C achievement in August 2011.</p> <p>FY 2012 Plans: Continue ATEC, OTC and JITC testing and evaluation focusing on IOT&E for GCSS-Army Rel 1.1.</p> <p>FY 2013 Plans:</p>				2.309 0	2.820 0	2.620

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continue ATEC, OTC and JITC testing and evaluation focusing on development testing of GCSS-Army Rel 1.2 design and build phase.			
Accomplishments/Planned Programs Subtotals	79.236	126.761	96.596

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Single Army Logistic Enterprise OPA: <i>GCSS-Army Other Procurement, Army STACOMP (OPA)</i>	33.196	83.765	110.158		110.158		176.522	165.269	152.350	Continuing	Continuing
• GCSS-Army Sustainment: <i>GCSS-Army Operations & Maintenance, Army (OMA)</i>	6.647	26.716	44.619		44.619		102.594	105.374	107.206	Continuing	Continuing

D. Acquisition Strategy

GCSS-Army has an evolutionary acquisition strategy as defined in DoD Directive 5000.01 and DoD Instruction 5000.02 and will define, develop and produce/deploy an initial, militarily useful (and supportable) operational capability based upon proven technology, time-phased requirements, projected threat assessments, and demonstrated manufacturing capabilities in as short a time as possible. The system will be developed in multiple releases as functional capabilities are defined and as integration and synchronization opportunities with related systems present opportunities for subsequent releases. Release 1.2 will be a viable stand alone capability that will not require subsequent releases to be operational.

GCSS-Army is being implemented in three releases to ensure program success.

Release 1.0 replaces: Standard Army Retail Supply System (SARSS) at one Direct Support Unit (DSU) in the 11th Armored Cavalry Regiment (ACR), Fort Irwin, California. An Operational Assessment (OA) was conducted on Release 1.0 and information is gathered through Continuous Evaluation.

Release 1.1 includes: Supply (Tactical and Installation Warehouse and Materiel Management); Field-level Maintenance; Property Accountability (Property Book, Unit Level Supply, and Unit Basic Load Ammunition); Force Element and Defense Forces Public Security (Allows Task Organization of Personnel, Equipment and Associated Property Accountability, Maintenance and Finance Actions); Store and Forward capability; Interoperability with STAMIS systems; Tactical and Installation Finance (Cost Management, Funds Distribution and Execution, Fund Status Reporting, and General Fund Enterprise Business System (GFEBs) Data Synchronization); Hub services; and Enterprise Master Data Management. Release 1.1 provides over 80% of the required GCSS-Army capability; it subsumes Release

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>
<p>1.0 and replaces the SARSS, Property Book Unit Supply Enhanced (PBUSE), Standard Army Maintenance System - Enhanced (SAMS-E) and Standard Army Maintenance System Installation Enhanced (SAMS-IE) legacy systems.</p> <p>Release 1.2 provides enhanced capabilities such as disconnected operations, increased financial capabilities, expanded enterprise master data management, installation based maintenance and is prepared to receive a bolt-on aviation maintenance system. Rel 1.2 does not by itself replace any additional Systems. Rel 1.2 represents the complete baseline with all required capabilities provided.</p> <p>E. Performance Metrics</p> <p>Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.</p>		

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1. PMO Operations - PM GCSS-Army PMO Operations	Various	PM GCSS-Army:FT LEE	94.945	6.469		5.369		-		5.369	Continuing	Continuing	62.385
Subtotal			94.945	6.469		5.369		-		5.369			62.385

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1. Enterprise Resource Planning (ERP) design and development	C/FPAF	Northrop Grumman Information Systems:Chester, VA	302.954	109.369		82.809		-		82.809	Continuing	Continuing	453.329
Government Developer Subject Matter Experts	IA	ASA (FM&C), CASCOM and GFEBS:Various Locations	17.097	2.286		1.146		-		1.146	Continuing	Continuing	19.730
Subtotal			320.051	111.655		83.955		-		83.955			473.059

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1. PM Support - Indepent Verification and Validation (IV&V)	C/T&M	CAP Gemini:2250 Corporate Park Dr, Herndon, VA 20171	0.477	0.503		0.184		-		0.184	Continuing	Continuing	Continuing
2. PM Support - Program Management Support Services A	C/T&M	L3 Services Inc.:11955 Freedom Dr. Reston VA 20190	0.213	0.681		0.479		-		0.479	Continuing	Continuing	25.580
3. PM Support - Program Management Support Services B	C/T&M	Logistics Management Institue:Colonial Heights, VA	27.068	4.633		3.989		-		3.989	Continuing	Continuing	34.531
Subtotal			27.758	5.817		4.652		-		4.652			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Increment 1 - Milestone C				■																								
Independent Govt Test and Release 1.1 OA/CE				■	■	■	■	■																				
Release 1.1 Stabilization					■	■	■	■																				
Full Deployment Decision								■																				
Field Wave 1 Release 1.1									■	■	■	■	■	■	■	■												
GCSS-Army Release 1.2 Design, Build & Test			■	■	■	■	■	■	■	■	■	■																
Release 1.2 Fielding IPR																■												
Field Wave 2																	■	■	■	■	■	■	■	■				

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 083: <i>GLOBAL COMBAT SUPPORT SYS - ARMY (GCSS-ARMY)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 1 - Milestone C	4	2011	4	2011
Independent Govt Test and Release 1.1 OA/CE	4	2011	1	2012
Release 1.1 Stabilization	1	2012	3	2012
Full Deployment Decision	4	2012	4	2012
Field Wave 1 Release 1.1	4	2012	4	2014
GCSS-Army Release 1.2 Design, Build & Test	3	2011	4	2013
Release 1.2 Fielding IPR	2	2014	2	2014
Field Wave 2	2	2014	4	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
08A: <i>Army Enterprise System Integration Program (AESIP)</i>	42.000	17.436	24.331	-	24.331	18.819	0.154	0.048	0.100	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Army Enterprise Systems Integration Program (AESIP), mission is to integrate Army business processes by providing a single source for enterprise hub services, centralized master data management, and business intelligence and analytics. AESIP will support the Army's federated approach and enable the integration of end-to-end logistical and financial processes. The Army has successfully addressed concerns about the lack of integration of ERPs by leveraging AESIP core capabilities and expanding those benefits across the Army enterprise. AESIP will be an Army specific commercial off-the-shelf (COTS) web portal implementation via the NetWeaver Platform from developer Systems Applications and Products (SAP) American Group to support Army process scenarios and requirements that will provide core competencies:

Enterprise Service Bus (Hub Services) - For a Service oriented, Single Point of Entry to connect, mediate, and control the exchange of data.

Enterprise Business Intelligence/Business Warehouse - Aggregates data from ERP and non-ERP systems to provide flexible Enterprise level reporting.

Enterprise Master Data Management - For a single source of authoritative data and improved workflow and business processes.

Hence, the AESIP solution establishes a framework for a fully integrated ERP centric environment that will ultimately provide Commanders Total Visibility from Factory to Foxhole thereby ensuring delivery of the right equipment to the right unit at the right time, while reducing backlogs of material on the battlefield.

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

	FY 2011	FY 2012	FY 2013
Title: System Development and Demonstration (SDD) Phase Contract Activity	25.956	6.111	2.637
Articles:	0	0	
Description: Manage a myriad of Government contracts associated with work relating to acquisition, engineering, planning and integration activities supporting SDD. These contracts support an evolutionary development strategy for enterprise hub services, centralized master data management and business intelligence/business warehouse applications using Systems Applications & Products (SAP) products and architecture. The current efforts support the Milestone Decision Authority federated approach. It is also synchronized with the Global Combat Support System-Army (GCSS-Army), the Logistics Modernization Program (LMP), and the General Fund Enterprise Business System (GFEBS) to enable end-to-end integration of the Army's logistical and financial Enterprise Resource Planning (ERP) programs.			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p><i>FY 2011 Accomplishments:</i> Managed a myriad of Government contracts associated with work relating to acquisition, engineering, planning and integration activities supporting SDD. The focus of work planned for FY 2011 included designing, building and testing hub services and the material master interfaces required for GCSS-Army Rel 1.1 and LMP Deploy #3. During this fiscal year the work plan included the transition of architecture and development services from the current DoD lead systems integrator to government control through the Center of Expertise at Picatinny Arsenal which was accomplished. FY 2011 work also included development, testing and implementation of Material Master Release (Rel) 3.1 to support the Army Central Logistics Data Base sunset and Milestone C. The plan for application server hosting and enterprise disaster recovery support remained unchanged at Redstone Arsenal and Acquisition Logistics and Technology Enterprise System and Services (ALTESS) respectively.</p> <p><i>FY 2012 Plans:</i> Continue to manage a myriad of Government contracts associated with work relating to acquisition, engineering, planning and integration activities supporting SDD. The focus of work planned for FY 2012 includes designing, building and testing hub services and the material master (MM) interfaces required for GCSS-Army Rel 1.2 and complete MM release functionality and attain a Full Deployment Decision. FY 2012 work also includes design, development, testing & implementation of MM 3.2 release to support the initial Army instance of an Enterprise non-standard material capability. Funding will support the initiation of convergence of the ERP programs IAW the federated approach. The plan for application server hosting and enterprise service support remains unchanged at Redstone Arsenal and ALTESS respectively.</p> <p><i>FY 2013 Plans:</i> Continue to manage a myriad of Small Business and Government contracts associated with work relating to acquisition, engineering, planning and integration activities supporting SDD. The focus of work planned for FY13 includes designing, building and testing hub services and the MM interfaces required for GCSS-Army Rel 1.2 and complete MM 3.3, 3.5, 3.6 release functionality. Funding will continue to support the convergence of the ERP programs IAW the federated approach. The plan for application server hosting and enterprise disaster recovery support remains unchanged at Redstone Arsenal and ALTESS respectively.</p>				
<p><i>Title:</i> PM Operations</p> <p align="right"><i>Articles:</i></p> <p><i>Description:</i> Provide functional support across a wide array of specialty areas to sustain product development.</p> <p><i>FY 2011 Accomplishments:</i> Provided functional support across a wide array of specialty areas to sustain product development.</p> <p><i>FY 2012 Plans:</i></p>		7.557 0	5.884 0	14.990

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Continue to provide functional support across a wide array of specialty areas to sustain product development. FY 2013 Plans: Continue to provide functional support across a wide array of specialty areas to sustain product development.				
Title: Government System Test and Evaluation Description: Plans, conducts and reports on developmental tests and assists in planning, conducting, and reporting of operational and interoperability tests, assessments, and experiments in order to provide essential information for the acquisition and fielding of warfighting systems. FY 2011 Accomplishments: Conducted Army Test & Evaluation Command (ATEC), Operational Test Command (OTC) and Joint Interoperability Test Command (JITC) testing and evaluation of Enterprise Service Bus (Hub Services) products including but not limited to Business Intelligence/Business Warehouse, Material Master Data and Equipment Master Data applications which supported Milestone C achievement in August 2011. FY 2012 Plans: Continue ATEC, OTC and JITC testing and evaluation of Enterprise Service Bus (Hub Services) products including but not limited to Business Intelligence/Business Warehouse, Material Master Data and Equipment Master Data applications for full deployment. FY 2013 Plans: Continue developmental and operational (ATEC and JITC) testing and evaluation of AESIP Hub Services products. These products include data brokering (interfaces and data conversion), enterprise master data management (material, customer, and vendor records), and enterprise business intelligence/business warehouse capabilities.		0.027 0	0.250 0	0.190
Articles:				
Title: Small Business Innovative Research/Small Business Technology Transfer Programs Description: Small Business Innovative Research/Small Business Technology Transfer Programs FY 2011 Accomplishments: Conducted the transition of systems integration to small business firms through two (2) Source Selection Evaluation Boards (SSEB) which identified potential vendors and offered them fair opportunity competitions for Task Order (TO)Award. FY 2012 Plans:		8.460 0	5.191 0	6.514
Articles:				

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continue to transition systems integration to small business firms through Source Selection Evaluation Boards (SSEB) to identify potential vendors and offer them fair opportunity competitions for TO Award.			
<i>FY 2013 Plans:</i> Continue to transition systems integration to small business firms through Source Selection Evaluation Boards (SSEB) to identify potential vendors and offer them fair opportunity competitions for TO Award.			
Accomplishments/Planned Programs Subtotals	42.000	17.436	24.331

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

Line Item	FY 2011	FY 2012	FY 2013 <u>Base</u>	FY 2013 <u>OCO</u>	FY 2013 <u>Total</u>	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• Single Army Logistic Enterprise OPA: <i>AESIP Other Procurement, Army (OPA)</i>	11.599	9.217	2.970		2.970		5.466	3.472	2.783	Continuing	Continuing
• AESIP Sustainment: <i>AESIP Operations & Maintenance Army (OMA)</i>	23.116	10.235	19.160		19.160		20.219	37.360	37.995	Continuing	Continuing

D. Acquisition Strategy

As the technical component of GCSS-Army, AESIP employs an evolutionary acquisition strategy as defined in DoD Directive 5000.1 and DoD Instruction 5000.2, and will define, develop and produce/deploy an initial operational capability based upon proven technology, time-phased requirements, projected threat assessments, and demonstrated manufacturing capabilities in as short a time as possible. The system will be developed in multiple releases then integrated and synchronized with related systems presenting opportunities for subsequent increments.

AESIP will support the same Release 1.1 and 1.2 schedules of GCSS-Army by providing Enterprise Service Bus (Hub Services), Enterprise Master Data Management, and Enterprise Business Intelligence/Business Warehouse capabilities in support of the entire GCSS-Army program.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1. PMO Operations - PM AESIP PMO Operations	Various	PM AESIP:5911 Kingstowne Village Pkwy, Alexandria VA 22315	15.740	1.784		5.761		-		5.761	Continuing	Continuing	Continuing
Subtotal			15.740	1.784		5.761		-		5.761			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1. Enterprise Resource Planning (ERP) Implementation Systems Integration	C/T&M	Computer Sciences Corporation (CSC):3160 Fairview Park Drive, Falls Church, VA 22042	118.445	-		-		-		-	Continuing	Continuing	111.902
2. Enterprise Resource Planning (ERP) Implementation - Technical Support Services	FFRDC	MITRE Corporation:7615 Colshire Drive, McLean, VA 22102	5.363	0.622		0.359		-		0.359	Continuing	Continuing	Continuing
3. Enterprise Resource Planning (ERP) - Government Lead Systems Integrator	IA	US Army ARDEC:Picatinny Arsenal NJ 08706	34.577	2.840		1.179		-		1.179	Continuing	Continuing	Continuing
4. Enterprise Resource Planning (ERP) - Technical Support Services	C/T&M	Systems Applications and Services (SAP):1300 Pennsylvania Ave, Washington DC 20004	6.009	1.600		0.664		-		0.664	Continuing	Continuing	Continuing
5. Enterprise Resource Planning (ERP) - ERP/SAP Technical and Management Support Services	C/T&M	iLuMina Solution Inc.:23330 Cottonwood, California MD 20619	2.430	1.049		0.435		-		0.435	Continuing	Continuing	Continuing
6. Enterprise Resource Planning (ERP) - Enterprise Application Services A	C/T&M	Attain, LLC:8000 Towers Crescent Dr., Vienna VA 22182	1.214	0.745		0.935		-		0.935	Continuing	Continuing	Continuing

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
7. Enterprise Resource Planning (ERP) - Enterprise Application Services B	C/T&M	Insap Services Inc.:12000 Lincoln Dr. Marlton, NJ 08053	0.010	0.010		0.010		-		0.010	Continuing	Continuing	Continuing
8. Enterprise Resource Planning (ERP) - Enterprise Application Services C	C/T&M	Oakland Consulting Group Inc:9501 Sheridan Lanham MD 20706	5.821	3.550		4.470		-		4.470	Continuing	Continuing	Continuing
9. Enterprise Resource Planning (ERP) - Enterprise Integration Services	C/T&M	EDC Consulting LLC:1104 Good Hope Rd SE Washington DC 20020	1.364	0.837		1.050		-		1.050	Continuing	Continuing	Continuing
10. Enterprise Resource Planning (ERP) - Infrastructure Services	C/T&M	TBD:TBD	0.050	0.050		0.050		-		0.050	Continuing	Continuing	Continuing
Subtotal			175.283	11.303		9.152		-		9.152			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
1. PM Support - Program Management Support Services A	C/FFP	L3 Services Inc. (MPRI Division):1320 Braddock PL, Alexandria, 22314	6.846	0.042		0.094		-		0.094	Continuing	Continuing	Continuing
2. PM Support - Program Management Support Services B	C/T&M	LMI Government Consulting:2000 Corporate Ridge, McLean, VA 22102	10.477	2.169		4.884		-		4.884	Continuing	Continuing	Continuing
3. PM Support - Program Management Support Services C	C/T&M	Science Applications Internation Corporation (SAIC):1710 SAIC Dr., McLean, VA 22102	3.366	1.623		3.654		-		3.654	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Increment 1 - Milestone C				■																								
Increment 1 - IOT&E				■	■	■	■	■																				
Increment 1 - Full Deployment Decision (FDD)												■																

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT 08A: <i>Army Enterprise System Integration Program (AESIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 1 - Milestone C	4	2011	4	2011
Increment 1 - IOT&E	4	2011	1	2012
Increment 1 - Full Deployment Decision (FDD)	4	2012	4	2012

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT DU6: <i>Lead Materiel Integrator (LMI) DST</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
DU6: <i>Lead Materiel Integrator (LMI) DST</i>	1.900	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

N/A

A. Mission Description and Budget Item Justification

N/A

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

	FY 2011	FY 2012	FY 2013
Title: N/A	1.900	-	-
Articles:	0		
Description: N/A			
FY 2011 Accomplishments: N/A			
Accomplishments/Planned Programs Subtotals	1.900	-	-

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

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>				PROJECT VU2: <i>INSTALLATION FIXED BASE (IFB)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
VU2: <i>INSTALLATION FIXED BASE (IFB)</i>	-	16.294	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Program requirements FY 2013 and out were rolled into Project 083 GCSS-A requirements.

A. Mission Description and Budget Item Justification

Installation Fixed Base (IFB) delivers the GCSS-Army Enterprise Solution to Installations. It integrates Installation Director Of Logistics/Financial Business Processes and the Tactical Army Logistics/Financial Business Processes into a single Enterprise Resource Planning System that will enable Army Force Generation (ARFORGEN) capability to generate land power capabilities that support the Joint Forces Commander's operational needs and conforms with Title 10 functions. IFB entails a modification to expand the GCSS-Army Enterprise Resource Planning (ERP) baseline software system to include the functions required for logistical tasks performed at Army Installations. IFB will result in enhanced management of Army inventory including a national view of Class IX and Class V stocked at all 88 Army installations; and will support expanded mission - (Reset, ARFORGEN, Expanded Fleet Management, National Maintenance Management) and will provide more accurate and actionable data, fully automated and integrated billing process between installation, Army Materiel Command, Major Subordinate Commands (AMC MSC), and Defense Finance and Accounting Service (DFAS).

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

	FY 2011	FY 2012	FY 2013
Title: Installation Fixed Base (IFB)	-	16.294	-
Articles:		0	
Description: IFB expands the GCSS-Army Enterprise Resource Planning (ERP) baseline software system to include the functions required for logistical tasks performed at Army Installations. IFB will result in enhanced management of Army inventory including a national view of Class IX and Class V stocked at all 88 Army installations.			
FY 2012 Plans: FY12 plan includes initiating development, configuration, testing, and evaluation of software for IFB software capabilities.			
Accomplishments/Planned Programs Subtotals	-	16.294	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303141A: <i>Global Combat Support System</i>	PROJECT VU2: <i>INSTALLATION FIXED BASE (IFB)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Other Procurement Army: <i>Installation Fixed Based (IFB)</i> <i>W11008</i>		1.691								0.000	1.691

D. Acquisition Strategy

IFB will support the needs of installation level logistics across the Army. It will do this by exploiting and building on GCSS-Army products to produce/deploy an operational capability that is based upon proven technology, and that readily integrates with other Army 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 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	32.525	12.085	15.756	-	15.756	16.616	14.132	9.981	10.146	Continuing	Continuing
253: <i>DSCS-DCS (PHASE II)</i>	11.716	5.757	5.730	-	5.730	5.586	5.540	5.364	5.451	Continuing	Continuing
456: <i>MILSATCOM SYSTEM ENGINEERING</i>	20.809	6.328	10.026	-	10.026	11.030	8.592	4.617	4.695	Continuing	Continuing

Note

Change Summary Explanation: Funding - FY 2013 : Funding increased to support Transportable Tactical Command Communications (T2C2).

A. Mission Description and Budget Item Justification

Military Satellite Communication (MILSATCOM) systems are joint program/project efforts to satisfy ground mobile requirements for each Service, the Joint Chiefs of Staff (JCS), the National Command Authority, the combatant commanders, the Office of the Secretary of Defense, and other governmental, non-DoD users. The worldwide MILSATCOM systems are: the Super High Frequency (SHF) Defense Satellite Communications System (DSCS); the Wideband Global SATCOM (WGS); the MILSTAR Extremely High Frequency (EHF) Low Data Rate (LDR) and Medium Data Rate (MDR); the Advanced Extremely High Frequency (AEHF); and future MILSATCOM capabilities. All of these systems are required to support legacy, interim and emerging communication space architectures and Future Force requirements. The Army is responsible for materiel development, acquisition, product improvement, testing, fielding and integrated logistics support of ground satellite terminals and SATCOM control subsystems and all associated equipment used to provide range extension of Mission Command Networks and Systems. The Army also participates in the development of MILSATCOM programs, including architectures, payloads, waveforms, antennas and terminal developments to ensure US Army equities are appropriately addressed with our sister services. This includes technology assessment efforts associated with the integration of MILSATCOM components to US Army Landwarnet. This responsibility also includes maintaining the life cycle logistics support required to achieve end-to-end connectivity and interoperability, satisfying JCS network operations in support of the President, JCS, combatant commanders, Military Departments, Department of State, and other government Departments and Agencies.

This program is designated as a DoD Space Program.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	33.694	12.104	12.372	-	12.372
Current President's Budget	32.525	12.085	15.756	-	15.756
Total Adjustments	-1.169	-0.019	3.384	-	3.384
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.222	-			
• SBIR/STTR Transfer	-0.947	-			
• Adjustments to Budget Years	-	-0.019	3.384	-	3.384

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 253: <i>DSCS-DCS (PHASE II)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
253: <i>DSCS-DCS (PHASE II)</i>	11.716	5.757	5.730	-	5.730	5.586	5.540	5.364	5.451	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project provides funds to develop SATCOM ground subsystem equipment and software in support of Joint Chiefs of Staff (JCS) validated Mission Command Network and Systems requirements for the worldwide Defense Enterprise Wideband SATCOM System (DEWSS). DEWSS is composed of the Super High Frequency (SHF) Defense Satellite Communications System (DSCS) and Wideband Global SATCOM (WGS) programs, which are required to support legacy, interim and emerging communication space architectures and future Force requirements. Expansion of the WGS constellation and upgrades to both DSCS and WGS are vital to support the Army's emerging power projection and rapid deployment role. DSCS and WGS provide multiple channels of tactical end-to-end connectivity and interoperability with strategic networks and national decision-makers, satisfying JCS network operations in support of the President, JCS, combatant commanders, military departments, Department of State and other government departments and agencies.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Netcentric Systems Engineering and Analysis</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continues Netcentric Systems Engineering and Analysis</p> <p>FY 2012 Plans: Continues Netcentric Systems Engineering and Analysis</p> <p>FY 2013 Plans: Future Netcentric Systems Engineering and Analysis</p>	4.143 0	3.157 0	3.155
<p>Title: Initiate integration and test efforts on the Remote Monitor Control Equipment (RMCE)</p> <p style="text-align: right;">Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continuing integration and test efforts on the Remote Monitor Control Equipment (RMCE)</p>	5.000 0	-	-
<p>Title: Joint SATCOM Engineering Center (JSEC) Lab, PM Administration and Systems Engineering Technical Assistance (SETA) efforts</p>	2.573 0	2.600 0	2.575

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 253: <i>DSCS-DCS (PHASE II)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Articles:</p> <p>Description: Funding is provided for the following effort</p> <p>FY 2011 Accomplishments: Continuing Joint SATCOM Engineering Center (JSEC) Lab, PM Admin and Systems Engineering Technical Assistance (SETA) efforts</p> <p>FY 2012 Plans: Future Joint SATCOM Engineering Center (JSEC) Lab, PM Admin and Systems Engineering Technical Assistance (SETA) efforts</p> <p>FY 2013 Plans: Future Joint SATCOM Engineering Center (JSEC) Lab, PM Admin and Systems Engineering Technical Assistance (SETA) efforts</p>			
Accomplishments/Planned Programs Subtotals	11.716	5.757	5.730

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 24: <i>Defense Enterprise Wideband Satcom Systems (BB8500)</i>	115.094	123.859	151.636		151.636		117.430	132.994	145.308	Continuing	Continuing

D. Acquisition Strategy

FY12 funding finances PM DCATS netcentric systems engineering, modem risk mitigation, Joint SATCOM Engineering Center (JSEC) Lab efforts and DoD Information Assurance Certification Accreditation Process (DIACAP) support. Funding provides for SATCOM terminal upgrades, enhancement of baseband throughput capabilities, technology insertion and upgrades which enhance decision support capabilities, allowing for full utilization of Wideband Global SATCOM (WGS) capabilities. Both the Wideband SATCOM Operational Management System (WSOMS) and the Enterprise Wideband SATCOM Terminal System (EWSTS) Capability Production Documents (CPDs) contain Netcentric-Ready Key Performance Parameters (NR-KPPs) as required by CJCSI 6212.01C. Netcentric efforts are required to facilitate the migration from the current trunk-based communications systems to Internet Protocol (IP) based systems and to engineer, test and integrate IP based capabilities into EWSTS and WSOMS systems. Studies, risk mitigation, system integration and advanced demonstrations for netcentric baseband and policy based control will accommodate technology insertion, data sharing, remote operations, architecture efforts and use of commercial technology, thus ensuring the life of the Defense Enterprise Wideband System (DEWSS) terminal family beyond 2025 and reducing lifecycle costs and enterprise requirements on the WGS and Defense Satellite Communication System (DSCS) satellites in the future.

E. Performance Metrics

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

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>				PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
456: <i>MILSATCOM SYSTEM ENGINEERING</i>	20.809	6.328	10.026	-	10.026	11.030	8.592	4.617	4.695	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

MILSATCOM System Engineering provides centralized funding for US Army participation in the joint development of MILSATCOM programs. This includes engineering, technical and Cost As An Independent Variable (CAIV) related analyses supporting architecture, payloads, network and terminal requirement and design decisions across all MILSATCOM programs

MILSATCOM System Engineering also supports experimentation and/or development of new and emerging SATCOM related technologies and standards. This includes prototyping efforts to address technology gaps identified by US Army Program of Records (POR) in the US Army Technology Transition Matrix.

Transportable Tactical Command Communications (T2C2) Development: T2C2 is a family of transportable satellite communications terminals intended to provide small company-sized early entry units robust voice and data communications capabilities in the early phases of joint operations using commercial and military satellite communications. Funding supports preparation for a Material Development Decision and initiation of an Analysis of Alternatives in FY 2013.

FY 2013 funds support efforts in the area of both Wideband/Commerical and Protected Communications related efforts.

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

	FY 2011	FY 2012	FY 2013
Title: Protected Advanced EHF (AEHF) Communications System Engineering	1.600	2.040	2.075
Articles:	0	0	
Description: Protected Advanced EHF (AEHF) Communications System Engineering			
FY 2011 Accomplishments: Protected Advanced EHF (AEHF) Communications System Engineering			
FY 2012 Plans: Protected Advanced EHF (AEHF) Communications System Engineering			
FY 2013 Plans: Protected Advanced EHF (AEHF) Communications System Engineering			
Title: Wideband Global SATCOM (WGS) Communications System Engineering and Intelligence, Surveillance, Reconnaissance (ISR) Migration	1.300	1.650	1.901
	0	0	

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p align="right">Articles:</p> <p>Description: Wideband Global SATCOM (WGS) Communications System Engineering</p> <p>FY 2011 Accomplishments: Wideband Global SATCOM (WGS) Communications System Engineering and Intelligence, Surveillance, Reconnaissance (ISR) Migration</p> <p>FY 2012 Plans: Wideband Global SATCOM (WGS) Communications System Engineering and Intelligence, Surveillance, Reconnaissance (ISR) Migration</p> <p>FY 2013 Plans: Wideband Global SATCOM (WGS) Communications System Engineering and Intelligence, Surveillance, Reconnaissance (ISR) Migration</p>				
<p>Title: Experimentation, development, testing and certification of critical SATCOM and SOTM communication and network technologies.</p> <p align="right">Articles:</p> <p>Description: Experimentation, development, testing and certification of critical SATCOM and SOTM communication and network technologies.</p> <p>FY 2011 Accomplishments: Experimentation, development, testing and certification of critical SATCOM and SOTM communication and network technologies.</p> <p>FY 2012 Plans: Experimentation, development, testing and certification of critical SATCOM and SOTM communication and network technologies.</p> <p>FY 2013 Plans: Experimentation, development, testing and certification of critical SATCOM and SOTM communication and network technologies.</p>		3.950 0	1.438 0	1.538
<p>Title: Federal Communications Commission/ International Telecommunications Union (FCC/ITU) Satellite Communications On the Move (SOTM) Regulatory Proposals/Analyses/Modifications</p> <p align="right">Articles:</p> <p>Description: Federal Communications Commission/ International Telecommunications Union (FCC/ITU) SOTM Regulatory Proposals/Analyses/Modifications</p> <p>FY 2011 Accomplishments:</p>		1.000 0	0.700 0	0.605

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Federal Communications Commission/ International Telecommunications Union (FCC/ITU) SOTM Regulatory Proposals/ Analyses/Modifications FY 2012 Plans: Federal Communications Commission/ International Telecommunications Union (FCC/ITU) SOTM Regulatory Proposals/ Analyses/Modifications FY 2013 Plans: Federal Communications Commission/ International Telecommunications Union (FCC/ITU) SOTM Regulatory Proposals/ Analyses/Modifications				
Title: Protected Terminal COTM and Wide Area Network (WAN) Prototyping and NIE participation Description: Protected Wide Area Network (WAN) and Terminal Prototyping FY 2011 Accomplishments: Protected Wide Area Network (WAN) Prototyping FY 2012 Plans: Protected Terminal COTM and Wide Area Network (WAN) Prototyping FY 2013 Plans: Protected Terminal COTM and Wide Area Network (WAN) Prototyping		2.092 0	0.500 0	0.425
Title: Transportable Tactical Command Communications (T2C2) Description: T2C2 Development: Achieve Material Development Decision (MDD), Conduct Analysis of Alternatives (AoA), Preparation for Milestone C, procure Low Rate Initial Production (LRIP), conduct Initial Operational Testing and Evaluation (IOT&E), Support Full Rate Production Decision FY 2013 Plans: T2C2 Development: Achieve MDD, Conduct AoA		-	-	3.482
Title: Intelligence, Surveillance, Reconnaissance (ISR) POR Migration to OPM WIN T SATCOM Solutions. Includes Reginal Hub Node (RHN) mods, Joint Management and Operations Subsystem (JMOS) mods, Terminal Cert Description: Intelligence, Surveillance, Reconnaissance (ISR) POR Migration to OPM WIN T SATCOM Solutions. Includes Reginal Hub Node (RHN) mods, Terminal Certifications (WGS)		0.250 0	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: Intelligence, Surveillance, Reconnaissance (ISR) POR Migration to OPM WIN T SATCOM Solutions. Includes Regional Hub Node (RHN) mods, Joint Management and Operations Subsystem (JMOS) mods, Terminal Certifications (WGS)				
Title: Protected Communications On the Move (COTM) Technical Reference Terminal Prototyping				
Description: Protected COTM Technical Reference Terminal Prototyping				
FY 2011 Accomplishments: Protected COTM Technical Reference Terminal Prototyping				
		Articles:	10.617 0	- -
Accomplishments/Planned Programs Subtotals		20.809	6.328	10.026
C. Other Program Funding Summary (\$ in Millions)				
N/A				
D. Acquisition Strategy				
This project funds advanced systems engineering, research, development, test and evaluation of new and emerging technologies to optimize terminal performance and communications control. Once the technologies are mature and deemed feasible, funding and management responsibility for implementation of the technology will transition to Army PORs.				
The funds provided for T2C2 will be used to achieve Material Development Decision (MDD) and conduct an Analysis of Alternatives (AoA). The AoA will evaluate at least two competitive non-development commercial capabilities that can be rapidly integrated into existing communications architecture. If the AoA shows a low cost commercial system can meet Army requirements, T2C2 would proceed directly to 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 2013 Army **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Oversight	MIPR	PM WIN T:PEO C3T	1.514	0.400		0.500		-		0.500	Continuing	Continuing	Continuing
Advanced Architecture/ Advanced Wideband System Architecture	MIPR	MIT Lincoln Labs:Lexington , MA	11.474	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			12.988	0.400		0.500		-		0.500			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Protected Advanced EHF and WGS Communications System Engineering	C/CR	PEO C3T PM WIN-T:Various	24.820	0.900		1.100		-		1.100	Continuing	Continuing	Continuing
Experimentation, development , testing & certification of SATCOM & SOTM communciation & networking.	TBD	PM WIN-T:Various	21.251	0.900		1.150		-		1.150	Continuing	Continuing	Continuing
FCC/ITU SOTM Regulatory Proposals/Analyses/ Modifications	MIPR	John Hopkins Universtiy Applied Physics Lab:Laurel, MD	0.800	0.650		0.605		-		0.605	Continuing	Continuing	Continuing
Protected COTM Tactical Reference Terminal Prototyping and Protected Wide Area Network Prototyping	MIPR	PEO C3T PM WIN-T:Various	19.200	0.250		0.300		-		0.300	Continuing	Continuing	Continuing
T2C2 Development Analysis of AoA activity associated with the evaluation and award of T2C2 contract	TBD	PEO C3T:PM WIN-T	-	-		0.750		-		0.750	Continuing	Continuing	Continuing
Includes conducting market surveys on T2C2 candidate technologies	C/CR	PEO C3T:PM WIN-T	-	-		0.100		-		0.100	0.000	0.100	0.100

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Purchase of prototype hardware and engineering studies	C/CR	PEO C3T:PM WIN-T	-	-		1.200		-		1.200	Continuing	Continuing	Continuing
Subtotal			66.071	2.700		5.205		-		5.205			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering (In House)	MIPR	PEO C3T PM WIN T:Core, Matrix	22.990	1.048		1.250		-		1.250	Continuing	Continuing	Continuing
Engineering Contractors Support	C/CPFF	PEO C3T PM WIN-T:Linquest, Janus, Booz Allen Hamilton	37.035	0.600		0.700		-		0.700	Continuing	Continuing	Continuing
System Architecture & Analysis	Various	MIT Lincoln Labs, Lexington, MA; MITRE, CERDEC:PM WIN T	16.663	0.530		0.143		-		0.143	Continuing	Continuing	Continuing
Preparation for Milestone C Request for Proposal and solicitation preparation	MIPR	PEO C3T PM WIN T:Various	-	-		0.400		-		0.400	Continuing	Continuing	Continuing
Subtotal			76.688	2.178		2.493		-		2.493			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Terminal Testing and Evaluation System Engineering	FFRDC	PEO C3T WIN T:MITRE	1.554	0.150		0.500		-		0.500	Continuing	Continuing	Continuing
Test Support	MIPR	MATRIX:PM WIN T	21.382	0.450		0.396		-		0.396	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

T2C2 Product delvelopment and M/S C preparation																												
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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303142A: <i>SATCOM Ground Environment (SPACE)</i>	PROJECT 456: <i>MILSATCOM SYSTEM ENGINEERING</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
T2C2 Product delvelopment and M/S C preparation	1	2013	2	2015

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

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0303150A: <i>WWMCCS/Global Command and Control System</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	12.606	23.899	14.443	-	14.443	13.995	13.290	12.950	9.687	Continuing	Continuing
C86: <i>ARMY GLOBAL C2 SYSTEM</i>	12.606	23.899	14.443	-	14.443	13.995	13.290	12.950	9.687	Continuing	Continuing

Note

Change Summary Explanation: No significant changes (+/-10%)

A. Mission Description and Budget Item Justification

Global Command and Control System-Army (GCCS-A): This project is the Army component system that directly supports the implementation of the Global Command and Control System Family of Systems. GCCS-A provides automated command and control tools for Army Strategic and Operational Theater Commanders to enhance warfighter capabilities throughout the spectrum of conflict during joint and combined operations in support of the National Security. The GCCS-A developed software systems dramatically improves the Army's ability to analyze courses of action; develop and manage Army Forces; and ensure feasibility of war plans. GCCS-A provides a client-server layered architecture and functional best-of-breed software applications to develop a totally integrated component of the Global Command and Control System Family of Systems that integrates the GCCS-Joint picture with the Army Battle Command Systems. The GCCS-A strategic tools have been modernized and replaced by Defense Readiness Reporting System - Army (DRRS-A), a suite of web based applications for Army Readiness, Force Registration and Force Projection.

B. Program Change Summary (\$ in Millions)

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	13.024	23.937	15.253	-	15.253
Current President's Budget	12.606	23.899	14.443	-	14.443
Total Adjustments	-0.418	-0.038	-0.810	-	-0.810
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.418	-0.038	-0.810	-	-0.810

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150A: <i>WWMCCS/Global Command and Control System</i>	PROJECT C86: <i>ARMY GLOBAL C2 SYSTEM</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
C86: <i>ARMY GLOBAL C2 SYSTEM</i>	12.606	23.899	14.443	-	14.443	13.995	13.290	12.950	9.687	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Global Command and Control System-Army (GCCS-A): This project is the Army component of the Global Command and Control System Family of Systems (FoS). GCCS-A provides automated command and control tools, including Force readiness, planning and movement, and situational awareness, for Army Strategic and Operational Theater commanders to enhance warfighter capabilities throughout the spectrum of conflict during Joint and combined operations in support of National Security. GCCS-A dramatically improves the Army's ability to analyze courses of action, develop and manage Army forces and execute war plans. GCCS-A links the GCCS-J Common Operating Picture with the Army Mission Command systems. GCCS-A will be modernized to meet evolving requirements to enterprise and web based architectures. GCCS-A strategic tools for readiness reporting have been modernized and replaced with the Defense Readiness Reporting System - Army (DRRS-A), a suite of web based applications for Army Readiness, Force Registration and Force Projection. Defense Readiness Report System - Army (DRRS-A) will implement the Global Force Management Data Initiative (GFM DI) for consumption of authoritative force structure data.

In response to the Congressional direction (Section 247 of Fiscal Year 2010 National Defense Authorization Act (NDAA)), GCCS-A will be included in the modernization of command and control systems within the Department of Defense (DoD) under the Joint Command and Control (JC2) framework. While sustaining and synchronizing current fielded operations, the Army will modernize and enhance current capabilities to support both the Service and Joint warfighter as part of a synchronized, orchestrated DoD wide effort that will transition the GCCS FoS into a more agile, net-centric, service oriented environment.

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

	FY 2011	FY 2012	FY 2013
<p>Title: GCCS-A/DRRS-A Software and System Engineering</p> <p style="text-align: right;">Articles:</p> <p>Description: Software and System Engineering for GCCS-A and DRRS-A Modernization</p> <p>FY 2011 Accomplishments: Software and System Engineering for GCCS-A and DRRS-A Modernization</p> <p>FY 2012 Plans: Software and System Engineering for GCCS-A and DRRS-A Modernization</p> <p>FY 2013 Plans: Software and System Engineering for GCCS-A and DRRS-A Modernization</p>	<p>0.248</p> <p>0</p>	<p>0.317</p> <p>0</p>	<p>0.317</p>
<p>Title: GCCS-A/DRRS-A Data Engineering</p> <p style="text-align: right;">Articles:</p>	<p>1.157</p> <p>0</p>	<p>1.385</p> <p>0</p>	<p>1.005</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150A: <i>WWMCCS/Global Command and Control System</i>	PROJECT C86: <i>ARMY GLOBAL C2 SYSTEM</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Description: Data Engineering for GCCS-A and DRRS-A Modernization FY 2011 Accomplishments: Data Engineering for GCCS-A and DRRS-A Modernization FY 2012 Plans: Data Engineering for GCCS-A and DRRS-A Modernization FY 2013 Plans: Data Engineering for GCCS-A and DRRS-A Modernization				
Title: GCCS-A/DRRS-A Software Development of Automated Command and Control Tools Description: Software Development of Automated Command and Control Tools for GCCS-A and DRRS-A Modernization FY 2011 Accomplishments: Software Development of Automated Command and Control Tools for GCCS-A and DRRS-A Modernization FY 2012 Plans: Software Development of Automated Command and Control Tools for GCCS-A and DRRS-A Modernization FY 2013 Plans: Software Development of Automated Command and Control Tools for GCCS-A and DRRS-A Modernization		Articles: 10.157 0	20.611 0	11.535
Title: GCCS-A/DRRS-A Test and Evaluation Description: Test and Evaluation for GCCS-A and DRRS-A Modernization FY 2011 Accomplishments: Test and Evaluation for GCCS-A and DRRS-A Modernization FY 2012 Plans: Test and Evaluation for GCCS-A and DRRS-A Modernization FY 2013 Plans: Test and Evaluation for GCCS-A and DRRS-A Modernization		Articles: 0.133 0	0.643 0	0.643
Title: GCCS-A/DRRS-A Program Support and Management		0.911	0.943	0.943

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150A: <i>WWMCCS/Global Command and Control System</i>	PROJECT C86: <i>ARMY GLOBAL C2 SYSTEM</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>Articles:</p> <p>Description: Support and Management for GCCS-A and DRRS-A Modernization</p> <p>FY 2011 Accomplishments: Program Support and Management for GCCS-A and DRRS-A Modernization</p> <p>FY 2012 Plans: Program Support and Management for GCCS-A and DRRS-A Modernization</p> <p>FY 2013 Plans: Support and Management for GCCS-A and DRRS-A Modernization</p>	0	0	
Accomplishments/Planned Programs Subtotals	12.606	23.899	14.443

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 373150: <i>Global Command & Control System-Army (GCCS-A)</i>	20.272	18.788	10.848		10.848					Continuing	Continuing

D. Acquisition Strategy

GCCS-A was slated for replacement by the future DoD Command and Control (C2) system, the Net Enabled Command Capability (NECC) program. The NECC program was cancelled by the Defense Acquisition Executive (DAE) on 2 November 2009. Under current plans, GCCS-A will be modernized to meet the requirements defined in the JC2 Capability Development Document (CDD), as well as align with the Joint and Army Enterprise architectures and Common Operating Environment (COE) standards.

GCCS-A must be maintained as a system until replaced by a new joint command and control capability. Based on the JC2 AoA determination, services are directed to transform the GCCS Family of Systems to a more agile, net-centric, service oriented environment. Post-AoA activities are on-going to determine the specific modernization efforts required to address the JC2 capabilities and the management and governance processes to implement them. Product Manager, Strategic Mission Command, remains actively engaged in the "Path Forward" planning activities. This provides an avenue to raise issues and make recommendations to assure that the Army's interests are protected and the GCCS-A program modernization is adequately defined and supported

In accordance with the Training and Doctrine Command (TRADOC) requirements document approved in 2008, entitled GCCS-A Mission Command Essential Capability, software capability will be developed in 2-year increments as capability sets designed to Collaborate, Collapse and Converge Mission Command products. The product development funded under this R-Form is an integral part of the Mission Command System of Systems, under a strategy designed to optimize opportunity

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0303150A: <i>WWMCCS/Global Command and Control System</i>	C86: <i>ARMY GLOBAL C2 SYSTEM</i>

for improved interoperability among the systems, to capture the benefits of competition where possible and to ensure the rapid integration of new capability into warfighter systems. This strategy is designed to reduce the physical footprint, logistics support requirements and increase operational efficiency.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150A: <i>WWMCCS/Global Command and Control System</i>	PROJECT C86: <i>ARMY GLOBAL C2 SYSTEM</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Management	Various	PM Mission Command:Aberdeen Proving Ground, Maryland	12.221	0.943		0.943		-		0.943	Continuing	Continuing	Continuing
Subtotal			12.221	0.943		0.943		-		0.943			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development (Completed Contracts)	Various	Lockheed Martin Corp (LMC):Springfield, VA	156.266	-		-		-		-	Continuing	Continuing	Continuing
GCCS-A and DRRS-A Modernization Software Development (Current Contract)	C/CPAF	Lockheed Martin Corp (LMC):Springfield, VA	9.457	13.096		-		-		-	Continuing	Continuing	0.000
Modernization Software Development (Future Contracts)	Various	To be determined:To be determined	-	6.142		10.162		-		10.162	Continuing	Continuing	0.000
Defense Readiness Reporting System-Army	Various	CACI Accenture:Eatontown, NJ	8.217	1.000		1.000		-		1.000	Continuing	Continuing	Continuing
Matrix	Various	CECOM:Aberdeen Proving Ground, MD	6.106	0.373		0.373		-		0.373	Continuing	Continuing	Continuing
System Engineering	Various	Various:Various	5.774	0.317		0.317		-		0.317	Continuing	Continuing	Continuing
Subtotal			185.820	20.928		11.852		-		11.852			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contractors	C/FP	Various:Various	12.880	1.385		1.005		-		1.005	Continuing	Continuing	Continuing

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0303150A: <i>WWMCCS/Global Command and Control System</i>	PROJECT C86: <i>ARMY GLOBAL C2 SYSTEM</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GCCS-A and DRRS-A Modernization Software Development COE 2	1	2013	4	2014
GCCS-A and DRRS-A Modernization Software Development COE 3	1	2015	4	2016

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

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	38.049	26.508	31.303	-	31.303	16.860	12.163	19.647	10.876	Continuing	Continuing
114: <i>Tactical Unmanned Aerial Vehicle (TUAV) (MIP)</i>	1.619	-	-	-	-	-	-	-	-	Continuing	Continuing
11A: <i>Advanced Payload Develop & Spt (MIP)</i>	24.452	15.910	6.247	-	6.247	7.180	7.386	11.994	3.094	Continuing	Continuing
11B: <i>TSP DEVELOPMENT (MIP)</i>	5.164	6.282	20.730	-	20.730	5.436	2.709	4.363	4.437	Continuing	Continuing
123: <i>JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)</i>	6.483	4.316	4.326	-	4.326	4.244	2.068	3.290	3.345	Continuing	Continuing
D10: <i>SUAV (MIP)</i>	0.331	-	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project 114: Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system air vehicle meets the required operating range of 50 kilometers and remains on station for up to nine hours with the re-wing configuration. The TUAV Shadow system consists of four air vehicles (each configured with an Electro Optical/Infrared (EO/IR) sensor payload), launcher, ground control and support equipment including: power generation, communications equipment, automated recovery equipment, one system remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) and is supported at the division level by a Mobile Maintenance Facility (MMF).

Project 11A, The STARLite Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) payload is a lightweight, high performance, all weather, multi-functional radar system for the Gray Eagle Unmanned Aircraft System (UAS). The STARLite system provides wide area, near real time Reconnaissance, Surveillance and Target Acquisition (RSTA) capabilities. It operates throughout the UAS flight mission profile in adverse weather and through battlefield obscurants. The Common Sensor Payload (CSP), an Electro Optical Infra Red w/Laser Designator (EO/IR/LD) system, also for the Gray Eagle, provides a day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the Army's Current and Future Force. This effort has been expanded to include High Definition (HD) and Target Location Accuracy (TLA) capability.

Project 11B, The Tactical Signals Intelligence (SIGINT) Payload (TSP) is a SIGINT sensor, currently under development for the Gray Eagle that detects radio frequency (RF) emitters. The TSP system will provide a SIGINT capability to the tactical commander. The TSP system will be a modular, scalable payload using an architecture that is software reconfigurable to allow for growth and flexibility as technology, and as the adversaries use of technology, changes. The TSP system improves

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>
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situational awareness and shortens the targeting cycle by detecting and identifying emitters associated with high value targets (HVTs). The TSP system is capable of processing conventional signals, standard military signals, and modern signals of interest.

Project 123: The Unmanned Aircraft System (UAS) Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a Joint facility that develops, integrates, and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development, builds the UAS Institutional Mission Simulator (IMS) trainers for the Shadow, Hunter, and ERMP programs, and provides modeling and simulation support. The MUSE is a real-time, operator in-the-loop simulation that may be integrated with larger simulations in support of Army and Joint training and exercises. The MUSE is also employed as a Mission Rehearsal Tool for ongoing combat operations. This project funds the management of the JTC/SIL and MUSE enhancements.

Project D10: The Small Unmanned Aircraft System (SUAS) provides the battalion and below ground maneuver elements critical situational awareness and enhances force protection. The system provides the small unit commander an organic and responsive tactical Reconnaissance, Surveillance, and Target Acquisition (RSTA) capability through the ability to view real-time Full Motion Video (FMV) and sensor data via the system ground control station. Other compatible receivers, such as the One Station Remote Video Terminal (OSRVT) and appropriately equipped manned platforms may also receive the SUAS products.

A SUAS includes three aircraft that must be launched by hand or by some other means that does not require an improved launch/recovery location. In addition to the aircraft, the system contains ground support equipment, which includes an interoperable hand controller. This equipment is fully transportable in or on rucksack type packs that are organic to the unit.

The SUAS RDT&E budget line includes funding for studies and incremental development/upgrade of current SUAS capabilities that will capitalize on new technology insertions based on identified user requirements. Past improvements include a Digital Data Link capability, introdu

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	54.300	40.650	15.681	-	15.681
Current President's Budget	38.049	26.508	31.303	-	31.303
Total Adjustments	-16.251	-14.142	15.622	-	15.622
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-16.251	-14.142	15.622	-	15.622

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>				PROJECT 114: <i>Tactical Unmanned Aerial Vehicle (TUAV) (MIP)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
114: <i>Tactical Unmanned Aerial Vehicle (TUAV) (MIP)</i>	1.619	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Funding shifts to PE 0305233A - RQ-7 UAV MODS, Project RQ7 in FY2011.

A. Mission Description and Budget Item Justification

Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system air vehicle meets the required operating range of 50 kilometers and remains on station for up to nine hours with the re-wing configuration. The TUAV Shadow system consists of four air vehicles (each configured with an Electro Optical/Infrared (EO/IR) sensor payload), launcher, ground control and support equipment including: power generation, communications equipment, automated recovery equipment, one system remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) and is supported at the division level by a Mobile Maintenance Facility (MMF).

All 102 Shadow UAS systems have been procured and 93 have been fielded. Shadow has amassed over 709,000 total flight hours, most of which were flown in support of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The Shadow UAS began being deployed to OIF in 2003 and to OIF in 2006. Incremental upgrades are required for continued improvement and interoperability. Common Systems Integration is required to ensure interoperability with other manned and unmanned weapon systems, to include One System Remote Video Transceiver (OSRVT). Continued developmental improvements are required to provide greater interoperability, increase operational capability and flexibility to the Brigade Combat Team. Modifications to the airframe, avionics, payloads, ground control equipment, and support equipment are based on documented requirements and lessons learned units operating in OEF and OIF.

Justification:

FY2013 RQ-7 UAV Base funding of \$31.158 million will be used for Capability Improvements, specifically: Engine improvements (engine development), Air Vehicle modifications (small mission computer development, weatherization, improved fuel system (vented), GPS Denied Operations and redundant avionics development), and Ground Equipment (interoperability) improvements. Additionally, funds will be for System Engineering, Program Management, Software Architecture and Reliability Solutions and System Test and Evaluation support. Funds will also be used to conduct the Increment II OSRVT Limited User Test (LUT), and other applicable OSRVT test events.

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

	FY 2011	FY 2012	FY 2013
Title: Base: Block Upgrades / Capability Improvements	1.619	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 114: <i>Tactical Unmanned Aerial Vehicle (TUAV) (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Articles:	0		
Description: Funding is provided for the following effort			
FY 2011 Accomplishments: Base: OIF Improvements / Block Upgrades / Capability Improvements			
Accomplishments/Planned Programs Subtotals	1.619	-	-

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RQ-7 UAV MODS (A00018): <i>RQ-7 UAV MODS (A00018)</i>	548.998	165.139	104.339		104.339		143.584	135.313	137.220	0.000	1,379.383
• TUAV - Initial Spares: <i>TUAV - Initial Spares</i>	2.613									Continuing	Continuing
• RQ-7 UAV MODS - (Project RQ7): <i>RQ-7 UAV MODS - (Project RQ7)</i>	7.555	31.896	31.158		31.158		22.773	22.953	18.991	0.000	158.960

D. Acquisition Strategy

A System Capability Demonstration (SCD) was conducted with four contractors. The results from the SCD in conjunction with proposal evaluations resulted in the competitive down select of a Best Value TUAS. A successful Milestone II ASARC was conducted 21 Dec 99 and a Milestone III Decision 25 Sep 02. The full rate production contract was awarded 27 Dec 02, and all 102 systems were procured by FY2009. Continued development of the selected TUAV system will be accomplished through a series of modifications and retrofits such as Tactical Common Data Link (TCDL), Communications Relay, Laser Designator, Larger engine, Larger fuselage, and reliability upgrades. Development/integration of these improved capabilities will be through individual efforts on sole source cost-plus fixed fee engineering services contract with the Shadow prime contractor and competitive contracts. Development of the larger engine will be accomplished through a competitive process.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 114: <i>Tactical Unmanned Aerial Vehicle (TUAV) (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	RO	PM UAS:Redstone Arsenal, AL	9.677	-		-		-		-	0.000	9.677	0.000
Subtotal			9.677	-		-		-		-	0.000	9.677	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Base: OIF Improvements / Block Upgrades / Capability Improvements	Various	AAI Corporation:Hunt Valley, MD	23.774	-		-		-		-	Continuing	Continuing	Continuing
Target Location Error (TLE) / TCDL / JTRS/ Laser Designator	SS/CPFF	AAI Corporation:Hunt Valley, MD	52.200	-		-		-		-	0.000	52.200	0.000
Re-Wing	SS/CPFF	AAI Corporation:Hunt Valley, MD	10.600	-		-		-		-	0.000	10.600	0.000
Common System Integration (UCGS, Trainers, OSRVT)	SS/CPFF	AAI Corporation:Hunt Valley, MD	23.206	-		-		-		-	0.000	23.206	0.000
TUAS Heavy Fuel Engine	SS/CPFF	AAI Corporation / Other:Hunt Valley, MD	1.600	-		-		-		-	0.000	1.600	0.000
LALHAV	SS/CPFF	AAI Corporation:Hunt Valley, MD / Various	2.000	-		-		-		-	0.000	2.000	0.000
Shadow Encryption	Various	Various:Various	29.500	-		-		-		-	0.000	29.500	0.000
Subtotal			142.880	-		-		-		-			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various Contractor:Various	12.196	-		-		-		-	0.000	12.196	0.000

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11A: <i>Advanced Payload Develop & Spt (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
11A: <i>Advanced Payload Develop & Spt (MIP)</i>	24.452	15.910	6.247	-	6.247	7.180	7.386	11.994	3.094	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Tactical Unmanned Aerial Vehicles (TUAV) budget line is a shared funding line between multiple Payload programs. These Payload programs support the Army's transformation by developing Reconnaissance, Surveillance and Target Acquisition (RSTA) and Intelligence, Surveillance and Reconnaissance (ISR) payload systems for brigade combat teams, divisions, and corps Unmanned Aircraft Systems (UAS). This is in accordance with Headquarters Department of the Army (HQDA) and Training and Doctrine Command (TRADOC) UAS priorities.

Small Tactical Radar - Lightweight (STARLite) Synthetic Aperture Radar/Ground Moving Target Indicator (SAR/GMTI) is a lightweight, high performance, all weather, multi-functional radar system for the Gray Eagle Unmanned Aircraft System (UAS). The STARLite system provides wide area, near real time Reconnaissance, Surveillance and Target Acquisition (RSTA) capabilities. It operates throughout the UAS flight mission profile in adverse weather and through battlefield obscurants. The SAR mode generates quality images for the battlefield commander for detection, classification and location of stationary commercial wheeled vehicle-size targets. The GMTI mode detects moving ground targets, provides location information and performs cross-cue with the Electro-Optic/Infrared (EO/IR) sensors.

Common Sensor Payload (CSP) - Electro Optical / Infra Red / Laser Designator (EO/IR/LD) provides day/night capability to collect and display continuous imagery with the ability to designate targets of interest for attack by laser guided precision weapons. It is the EO/IR/LD sensor for Gray Eagle UAS which supports force applications, battlespace awareness, force protection, and net-centric operations across the battlefield to provide wide area, near real time RSTA capabilities. Additional initiatives will continue to focus on the transition of technologies directly supporting emerging requirements and the Army's Current and Future Force. CSP is being procured for the Gray Eagle UAS program and has potential application to other platforms.

CSP High Definition (HD) is the first capability enhancement for the CSP which will provide the commander with HD Full Motion Video (FMV) in both the Electro-optical and Mid-wave IR spectrums for improved battlefield situation awareness and identification of high value targets. All Gray Eagle platforms will be equipped with CSP HD.

CSP Target Location Accuracy (TLA) is the final upgrade to the current capability and provides 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. All Gray Eagle platforms will be equipped with the CSP TLA capability.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11A: <i>Advanced Payload Develop & Spt (MIP)</i>
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The Tactical Signals Intelligence (SIGINT) Payload (TSP) is a SIGINT sensor, currently under development for the Gray Eagle that detects radio frequency (RF) emitters. The TSP system will provide a SIGINT capability to the tactical commander. The TSP system will be a modular, scalable payload using an architecture that is software reconfigurable to allow for growth and flexibility as technology, and as the adversaries use of technology, changes. The TSP system improves situational awareness and shortens the targeting cycle by detecting and identifying emitter associated with high value targets (HVTs). The TSP system is capable of processing conventional signals, standard military signals, and modern signals of interest.

FY 2013 base development dollars in the amount of \$6.247 million is for the continued integration and test of the CSP HD upgrade as well as the initial pre-contract award efforts for TLA.

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

	FY 2011	FY 2012	FY 2013
<p>Title: CSP - EO/IR/LD</p> <p style="text-align: right;">Articles:</p> <p>Description: CSP Development, testing and final integration</p> <p>FY 2011 Accomplishments: Final Testing</p>	<p>2.379</p> <p>0</p>	<p>-</p>	<p>-</p>
<p>Title: CSP High Definition (HD) - EO/IR/LD</p> <p style="text-align: right;">Articles:</p> <p>Description: Development, testing and integration</p> <p>FY 2011 Accomplishments: CSP HD Support to NSWC Crane</p> <p>FY 2012 Plans: CSP HD Development, testing and integration</p> <p>FY 2013 Plans: Final CSP HD Development, testing, integration and program management support.</p>	<p>0.200</p> <p>0</p>	<p>14.281</p> <p>0</p>	<p>3.567</p>
<p>Title: CSP HD Target Location Accuracy (TLA) - EO/IR/LD</p> <p>Description: CSP Target Location Accuracy (TLA) - Non Recurring Engineering (NRE), design, build and test of seven CSP HDTLA integration and test assets.</p> <p>FY 2013 Plans:</p>	<p>-</p>	<p>-</p>	<p>2.680</p>

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11A: <i>Advanced Payload Develop & Spt (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
CSP HDTLA Contract prep work - RFP, SOW and Contract award for FY14 TLA development start			
Title: STARLite ER (Extended Range) - SAR/GMTI Description: STARLite (SAR/GMTI) - Design, build, test and integrate 3 STARLite ER integration and test systems (Larger Antenna = Extended Range and Increased Reliability) onto the host platform (Gray Eagle). FY 2011 Accomplishments: Final testing, integration of the STARLite ER and final development of GMTI vehicle classification and Man-sized detection S/W capability to be cut-in to production in FY12 timeframe FY 2012 Plans: Finalize testing events and integration onto host platform (Gray Eagle)	11.227 0	1.629 0	-
Title: Tactical Signals Intelligence (SIGINT) Payload Description: Tactical Signals Intelligence (SIGINT) Payload FY 2011 Accomplishments: Tactical Signals Intelligence (SIGINT) Payload	10.646 0	-	-
Accomplishments/Planned Programs Subtotals			
	24.452	15.910	6.247

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 0643774 131: NIGHT VISION SYS A/DEV - 0603774A, 131	4.975									0.000	4.975
• 0305204A 11B: Tactical Unmanned Aerial Vehicles - 0305204A, 11B	5.164	6.282	20.730		20.730		2.709	4.363	4.437	Continuing	Continuing
• A00020: MQ-1 PAYLOAD - UAS - A00020	83.556	146.983	231.508		231.508		258.027	10.146	10.162	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11A: <i>Advanced Payload Develop & Spt (MIP)</i>

D. Acquisition Strategy

STARLite SAR/GMTI is a threshold requirement for the Gray Eagle UAS. The acquisition strategy for STARLite program was based on a full and open competition for the Army. A five year competitive production contract was awarded in April 2008 to Northrop Grumman for the build, integration, test and delivery of STARLite systems with preplanned improvements for Extended Range and Increased Reliability. STARLite will support the Gray Eagle UAS Initial Operational Test and Evaluation (IOT&E) event planned for 4th Quarter FY 2012. No additional development dollars are planned for STARLite in FY 2013 as the program will be in Full Rate Production (FRP).

Common Sensor Payload (CSP) EO/IR/LD is a KPP (Key Performance Parameter) requirement for the Gray Eagle UAS. The acquisition strategy for the CSP program was based on a full and open competition for the Army. It was briefed and approved at the Army Systems Acquisition Review Council (ASARC) in Dec 2006. A competitive contract was awarded in Nov 2007 to Raytheon for the build, integration, test and delivery of the CSP. CSP will support the Gray Eagle UAS IOT&E event planned for 4th Quarter FY 2012. No additional development dollars are planned for CSP baseline in FY 2013 as the program will be in FRP.

CSP High Definition (HD) is an upgrade to the baseline CSP program which is planned for final development, testing and integration in FY 2012. The development will conclude with a Developmental Test (DT) in early FY 2013 and a production cut-in decision will be briefed to the Milestone Decision Authority (MDA) prior to the FY 2013 CSP HD production buy. A retrofit is also planned for award in FY 2013 to bring all of the previously procured CSP baseline systems up to the HD configuration.

CSP TLA is a directed requirement for the Gray Eagle platform with enhanced capabilities addressed in the Joint Requirement Oversight Council Memorandum (JROCM 051-09). The approved acquisition strategy for the development of this new capability is a sole source task order through the competitively awarded Navy Basic Order Agreement (BOA) with Raytheon that will provide seven integration and test assets. These assets will be used to fully test and integrate this new capability onto the Gray Eagle platform. Once the TLA upgrade has been fully integrated and tested, the program can enter Milestone C and begin production and replacement of the baseline CSP system. The entire Gray Eagle fleet will be retrofitted to the CSP TLA variant.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11A: <i>Advanced Payload Develop & Spt (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt Personnel	Various	PM RUS:Aberdeen, MD	7.086	0.871		0.567		-		0.567	Continuing	Continuing	Continuing
PM ARES Funding for TSP	Allot	PM, ARES:Aberdeen, MD	11.255	-		-		-		-	0.000	11.255	11.255
Subtotal			18.341	0.871		0.567		-		0.567			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
STARLite Extended Range (ER) (SAR/GMTI)	C/CPFF	Northrop Grumman:Linthicum, MD	6.786	-		-		-		-	0.000	6.786	6.786
CSP EO/IR/LD	C/FFP	Raytheon:McKinney, TX	48.500	-		-		-		-	0.000	48.500	48.500
CSP HD (High Definition)	MIPR	NSWC Crane:Crane, IN	3.000	7.850		-		-		-	0.000	10.850	10.850
CSP TLA - NRE, Build and Test	MIPR	NSWC Crane:Crane, IN	22.000	-		2.680		-		2.680	Continuing	Continuing	Continuing
Subtotal			80.286	7.850		2.680		-		2.680			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Gray Eagle Integration Support (STARLite ER, CSP, HD & TLA)	MIPR	PM UAS/General Atomics:Huntsville, AL	20.344	4.191		1.500		-		1.500	Continuing	Continuing	Continuing
Subtotal			20.344	4.191		1.500		-		1.500			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11A: <i>Advanced Payload Develop & Spt (MIP)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CSP HD (EO/IR/LD) Development					██████████																							
CSP HD (EO/IR/LD) Testing									██████████																			
CSP HD (EO/IR/LD) Production													██															
CSP HD (EO/IR/LD) Retrofit																	██											
CSP TLA (EO/IR/LD) NRE/Build													██															
CSP TLA (EO/IR/LD) Testing																					██							
CSP HD/TLA (EO/IR/LD) Milestone C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11A: <i>Advanced Payload Develop & Spt (MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CSP HD (EO/IR/LD) Development	2	2012	2	2013
CSP HD (EO/IR/LD) Testing	1	2013	3	2013
CSP HD (EO/IR/LD) Production	2	2013	4	2016
CSP HD (EO/IR/LD) Retrofit	3	2014	3	2017
CSP TLA (EO/IR/LD) NRE/Build	1	2014	3	2016
CSP TLA (EO/IR/LD) Testing	3	2015	4	2016
CSP HD/TLA (EO/IR/LD) Milestone C	1	2017	1	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11B: <i>TSP DEVELOPMENT (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
11B: <i>TSP DEVELOPMENT (MIP)</i>	5.164	6.282	20.730	-	20.730	5.436	2.709	4.363	4.437	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Tactical Signals Intelligence (SIGINT) Payload (TSP) is a SIGINT sensor, currently under development for the Gray Eagle that detects radio frequency (RF) emitters. The TSP system will provide a SIGINT capability to the tactical commander. The TSP system will be a modular, scalable payload using an architecture that is software reconfigurable to allow for growth and flexibility as technology, and as the adversaries use of technology, changes. This flexible architecture allows for third party software applications to be integrated into the TSP system. The TSP system is a complementary system to the aerial and terrestrial Intelligence, Surveillance, and Reconnaissance (ISR) layers through direct interface with the Distributed Common Ground System-Army (DCGS-A) Information and Intelligence Enterprise (DI2E). It supports Manned/Unmanned (MUM) teaming with Brigade Combat Team ground SIGINT Terminal Guidance (STG) teams and manned airborne assets. The TSP system improves situational awareness and shortens the targeting cycle by detecting and identifying emitters associated with high value targets (HVTs).

The TSP system is capable of processing conventional signals, standard military signals, and modern signals of interest. This includes detection, recognition, identification, direction finding, and high confidence geo-location. The TSP system operates in two modes, passive and active to provide an enhanced Aerial Precision Geolocation (APG) capability.

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

	FY 2011	FY 2012	FY 2013
Title: EMD NRE, Training Development, Other Licensing and Equipment	5.164	6.282	20.730
Articles:	0	0	
Description: EMD NRE, Training Development, Other Licensing and Equipment			
FY 2011 Accomplishments: Continued EMD NRE, Training Development, Other Licensing and Equipment. Awarded EMD contract			
FY 2012 Plans: Continued EMD NRE(2), Training Development, Other Licensing and Equipment			
FY 2013 Plans: Continued EMD NRE(2), Training Development, Other Licensing and Equipment			
Accomplishments/Planned Programs Subtotals	5.164	6.282	20.730

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11B: <i>TSP DEVELOPMENT (MIP)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0305204A 11A: <i>NSA MIP (TSP)</i>	0.520		8.669		8.669		6.795			0.000	22.779
• A00020: <i>MQ-1 Payload</i>	83.600	147.000	231.500		231.500		258.000	10.100	10.200	0.000	989.900
• 0305204A /11A: <i>Advanced Payloads Development</i>	10.646									0.000	10.646

D. Acquisition Strategy

TSP is a threshold requirement for the MQ-1C Gray Eagle UAS. The TSP program entered the Engineering and Manufacturing Development (EMD) phase with a Milestone B decision in September 2011. The TSP Program EMD contract award was based on full-and-open competition and was focused on integration and test onto the Gray Eagle platform and integration and test of TSP software into the Distributed Common Ground System-Army (DCGS-A). The TSP EMD program is a derivative of systems that are currently fielded on the Hunter UAS and a variety of other manned platforms. The demonstrated scalability of these fielded materiel solutions allows the TSP EMD program to leverage efforts that directly support the TSP EMD program.

The TSP programs acquisition strategy has been modified to accommodate the FY 2012 Appropriation that reduces the 11B Funding Line by \$14.100 Million. The TSP program is following an incremental acquisition strategy with a TSP Block 0, Block 1 and Block 2.

The TSP Block 0 will provide an early TSP operational capability for the Gray Eagle program.

The TSP Block 1 is the current Program of Record that entered EMD in FY 2011.

Beginning in FY 2016, the TSP Block 2 effort will address System enhancements and upgrades as the threat and technology evolves.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11B: <i>TSP DEVELOPMENT (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management-Gov	RO	PM ARES:APG	5.412	0.810		1.264		-		1.264	Continuing	Continuing	Continuing
Program Management Support	MIPR	Various:APG	2.830	0.350		0.396		-		0.396	Continuing	Continuing	Continuing
FFRDC Support	FFRDC	MITRE:APG	0.286	0.358		1.260		-		1.260	Continuing	Continuing	0.000
Subtotal			8.528	1.518		2.920		-		2.920			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TSP EMD	C/CPIF	BAE Systems,;Nashua, NH	2.841	3.544		6.953		-		6.953	Continuing	Continuing	Continuing
Subtotal			2.841	3.544		6.953		-		6.953			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Various:...	1.250	0.540		1.000		-		1.000	Continuing	Continuing	Continuing
Subtotal			1.250	0.540		1.000		-		1.000			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Activities	MIPR	Various:ATEC/APG	4.139	0.680		4.600		-		4.600	Continuing	Continuing	Continuing
Systems Integration and Test	MIPR	ATEC:APG	0.500	-		3.247		-		3.247	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army			DATE: February 2012				
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>			PROJECT 11B: <i>TSP DEVELOPMENT (MIP)</i>		

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TSP EMD Milestone B				■																								
TSP EMD Award				■																								
System Integration and Test					■	■	■	■	■	■	■	■																
Development Test and Evaluation													■	■	■	■												
Limited User Test																■												
Milestone C																				■								
LRIP Contract Award																				■								
Initial Operational Test and Evaluation																								■				
Full Rate Production Decision																												■

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 11B: <i>TSP DEVELOPMENT (MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TSP EMD Milestone B	4	2011	4	2011
TSP EMD Award	4	2011	4	2011
System Integration and Test	1	2012	1	2014
Development Test and Evaluation	2	2014	3	2014
Limited User Test	4	2014	4	2014
Milestone C	1	2015	1	2015
LRIP Contract Award	1	2015	1	2015
Initial Operational Test and Evaluation	3	2015	3	2015
Full Rate Production Decision	1	2016	1	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>				PROJECT 123: <i>JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)</i>			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
123: <i>JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)</i>	6.483	4.316	4.326	-	4.326	4.244	2.068	3.290	3.345	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Unmanned Aircraft System (UAS) Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a Joint facility that develops, integrates, and supports the enhancement of its Multiple Unified Simulation Environment (MUSE) capability for Army systems and operational concepts. The JTC/SIL conducts prototype hardware and software development, builds the UAS Institutional Mission Simulator (IMS) trainers for the Shadow, Hunter, and ERMP programs, and provides modeling and simulation support. The MUSE is a real-time, operator in-the-loop simulation that may be integrated with larger simulations in support of Army and Joint training and exercises. The MUSE is also employed as a Mission Rehearsal Tool for ongoing combat operations. This project funds the management of the JTC/SIL and MUSE enhancements.

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

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

	FY 2011	FY 2012	FY 2013
Title: Product Development	3.687	1.800	1.840
Articles:	0	0	
Description: Funding is provided for the following efforts.			
FY 2011 Accomplishments: Released MUSE 8.6 software which contained advanced weaponization, improvements for software for integrating third party software to meet user requirements such as mapping and visualization software, advanced mission planning capabilities, ease of use enhancements to assist users in operation of the system, networking software for easier connection and control in a distributed network environment, entity handling software improvements and Windows 7 64 bit operations.			
FY 2012 Plans: Integration of a government owned visualization package. Develop more ease of use enhancements including standardized set up packages for the aircraft simulation. Evaluate Ground Control Station simulation improvements for fidelity and realism. Design, develop, implement, and release Build 8.8.			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 123: <i>JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
Move to smart phone or more portable computing capabilities. Evaluate the adaptable environment that gives the user more flexibility by choosing which components to use for a more customized environment. Incorporate new sensor technologies. Incorporate new aircraft and avionics. Design, develop, implement, and release Build 8.9.				
Title: Support OSD Joint UAS Interoperability Requirements and Activities Description: Funding is provided for the following efforts. FY 2011 Accomplishments: Established the JSIL as a legitimate Joint test organization by forging relationships with Test Resources Management Center (TRMC) and Joint Interoperability Test Center (JITC). Continued to move the UAS Control Segment Working Group (UCS WG) forward to include coordinating and integrating a tri-service demonstration of the architecture. Developed of UCS Architecture related tools and training aids. Established an Unmanned Systems Interoperability Profile (USIP) Management Plan which governs the USIP process. FY 2012 Plans: Develop UCS Architecture environment and compliance tools. Develop and publish multiple new USIPs based on OSD prioritization. Provide technical and administrative support to I IPT and associated WGs. FY 2013 Plans: Continue development of UCS Architecture environment and compliance tools. Continue to develop and publish multiple new USIPs based on OSD prioritization. Continue to provide technical and administrative support to I IPT and associated WGs.		Articles: 2.000 0	2.000 0	2.000
Title: Management Services Description: Funding is provided for the following efforts. FY 2011 Accomplishments: Provided coordination and oversight of MUSE product development and OSD Interoperability Requirements and Tool development. FY 2012 Plans: Continue coordination and oversight of MUSE product development and OSD Interoperability Requirements and tool development. FY 2013 Plans:		Articles: 0.796 0	0.516 0	0.486

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 123: <i>JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Continue coordination and oversight of MUSE product development and OSD Interoperability Requirements and Tool development.			
Accomplishments/Planned Programs Subtotals	6.483	4.316	4.326

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• PE 0603261N Navy: <i>PE 0603261N Navy</i>	3.661	3.573	3.600		3.600		3.667	1.689		Continuing	Continuing
• PE 0305206F Air Force: <i>PE 0305206F Air Force</i>	3.362	3.235	3.464		3.464		3.504	3.387		Continuing	Continuing

D. Acquisition Strategy
Continued MUSE development will be accomplished through a combination of Government in-house functional directorate support using a variety of existing contract vehicles.

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT 123: <i>JOINT TECHNOLOGY CENTER SYSTEM INTEGRATION (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	AMC, AMCOM, AMRDEC, SED:Redstone Arsenal, AL	0.796	0.516		0.486		-		0.486	Continuing	Continuing	Continuing
Subtotal			0.796	0.516		0.486		-		0.486			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MUSE Development	MIPR	AMC, AMCOM, AMRDEC, SED:Redstone Arsenal, AL	3.687	1.800		1.840		-		1.840	Continuing	Continuing	Continuing
Subtotal			3.687	1.800		1.840		-		1.840			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Interoperability Support	MIPR	AMC, RDECOM, AMRDEC:Redstone Arsenal, AL	2.000	2.000		2.000		-		2.000	Continuing	Continuing	0.000
Subtotal			2.000	2.000		2.000		-		2.000			0.000

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			6.483	4.316		4.326		-		4.326			

Remarks

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT D10: <i>SUAV (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
D10: <i>SUAV (MIP)</i>	0.331	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Funding for this project shifts to PE 0305232A RQ-11 in FY11.

A. Mission Description and Budget Item Justification

The Small Unmanned Aircraft System (SUAS) provides the battalion and below ground maneuver elements critical situational awareness and enhances force protection. The system provides the small unit commander an organic and responsive tactical Reconnaissance, Surveillance, and Target Acquisition (RSTA) capability through the ability to view real-time Full Motion Video (FMV) and sensor data via the system ground control station. Other compatible receivers, such as the One Station Remote Video Terminal (OSRVT) and appropriately equipped manned platforms may also receive the SUAS products.

A SUAS includes three aircraft that must be launched by hand or by some other means that does not require an improved launch/recovery location. In addition to the aircraft, the system contains ground support equipment, which includes an interoperable hand controller. This equipment is fully transportable in or on rucksack type packs that are organic to the unit.

The SUAS RDT&E budget line includes funding for studies and incremental development/upgrade of current SUAS capabilities that will capitalize on new technology insertions based on identified user requirements. Past improvements include a Digital Data Link capability, introduced in 2010, which provided data link security, increased the number of communications channels allowing more aircraft to operate in close proximity, extended range through data link relay capability, and integrated advanced digital payloads. Future enhancements will follow the natural progression of technology and exploitation of improved payloads to meet warfighter needs. FY 2013 and future improvements will be in the areas of: continued communications link encryption; gimbaled payloads; software blocking integration; common hand controller development and integration; ADS-B integration; and noise reduction.

Justification:

FY 2013 engineering services efforts will continue to focus on communication link encryption, GPS Denied / Comms Denied Navigation, Autonomous Air Vehicle behaviors, Simulator upgrades, ADS-B integration, and noise reduction.

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

	FY 2011	FY 2012	FY 2013
Title: Program Management Support	0.331	-	-
Articles:	0		
Description: Program Management Support			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT D10: <i>SUAV (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Program Management Support			
Accomplishments/Planned Programs Subtotals	0.331	-	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RQ-11 (RAVEN MIP) (RDT&E,A): <i>RQ-11 (RAVEN MIP) (RDT&E,A) - 0305232A</i>	1.547	1.935	4.039		4.039		2.977	3.025	3.077	0.000	19.517
• RQ-11 (RAVEN) / APA - A00010: <i>RQ-11 (RAVEN) / APA - A00010</i>	37.467	86.062	25.798		25.798		25.342	25.356	26.675	0.000	250.134

D. Acquisition Strategy
Small Unmanned Aircraft System (SUAS) acquisition strategy was based upon a full and open and was awarded in Aug 2005. The Full Rate Production Decision Review was approved in Oct 2006 with Full Rate Production beginning in April 2007. A significant system upgrade was completed in early FY2010 incorporated a Digital Data Link (DDL) which improved operational capability by: incorporating an encryption capability enabling secure data links increasing the number of channels allowing for more air vehicles to be flown in a smaller areas; extending the operational range through communication relay capability; and integration of advanced digital payloads. The first DDL systems were fielded in December 2009.

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	PROJECT D10: <i>SUAV (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management	RO	PM UAS:PM UAS	1.278	-		-		-		-	0.000	1.278	0.000
Subtotal			1.278	-		-		-		-	0.000	1.278	0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Improvement Studies and Plans (Engineering Services)	SS/CPFF	Aero Vironment:Simi Valley, CA	13.047	-		-		-		-	0.000	13.047	0.000
Shadow Flight In National Air Space	SS/CPIF	Aero Vironment:Simi Valley, CA	2.000	-		-		-		-	0.000	2.000	0.000
Subtotal			15.047	-		-		-		-	0.000	15.047	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Government Agencies	MIPR	AMRDEC / IMMC / Various:Redstone Arsenal, AL / Various	0.550	-		-		-		-	0.000	0.550	0.000
Subtotal			0.550	-		-		-		-	0.000	0.550	0.000

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			16.875	-		-		-		-	0.000	16.875	0.000

Remarks

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/Surface Systems</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	125.404	31.649	40.876	-	40.876	25.655	14.962	0.354	31.911	Continuing	Continuing
956: <i>Distributed Common Ground System (DCGS) (MIP)</i>	124.805	31.649	40.876	-	40.876	25.655	14.962	0.354	31.911	Continuing	Continuing
D15: <i>MUSE & TES TADSS (MIP)</i>	0.599	-	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Distributed Common Ground System - Army (DCGS-A) is the Intelligence, Surveillance and Reconnaissance (ISR) System of Systems (SoS) for Joint, Interagency, Allied, Coalition, and National data analysis, sharing and collaboration. The core functions of DCGS-A are: the vertical and horizontal synchronization of ISR Processing, Exploitation and Dissemination (PED) efforts; operations in a networked environment at multiple security levels; the control of select Army and joint sensor systems; the fusion of all acquired data and information, and distribution of relevant red (threat), gray (non-aligned), and environmental (weather and terrain) information; and providing the Warfighters' early warning and targeting capability. DCGS-A provides a single integrated ISR ground processing system composed of common components that are interoperable with sensors, other information sources, all Warfighting Functions, and the Defense Information & Intelligence Enterprise (DI2E). DCGS-A is fielded in Fixed and Mobile configurations emphasizing the use of reach and split based operations by improving accessibility of data in order to reduce forward deployed footprint. As enhanced capabilities are developed and tested, annual software releases are integrated into Army Common/commodity hardware and fielded to units IAW the Army Force Generation (ARFORGEN) process.

FY13 Base funding in the amount of \$40.876 million will be used for development of the Command Post Computing Environment (CPCE) as the Lead for PEO IEW&S. As such, DCGS-A is currently aligning its architecture to fit within the Common Operating Environment (COE) as described by the ASA(ALT) COE Implementation Plan. This alignment is in accordance with the G-3/5/7 priority to align all Army networks, procurements, and enhancements under one COE and one vision.

DCGS-A software will be tailored by echelon and scalable to each unit's mission. DCGS-A provides commanders and staffs the ability to maintain an accurate and up to date understanding of the operational environment. DCGS-A's contributions to commanders' visualization and situational awareness, rapid planning, and the synchronization of all warfighting functions, enable Army units to operate within the enemy's decision cycle. This capability enhances tactical and operational maneuver and the conduct of full spectrum operations across the range of military operations from humanitarian to major combat operations.

The DCGS-A configurations range from laptops to systems integrated in tactical shelters and mounted on tactical vehicles to large commodity servers operating in a Cloud Processing Architecture. Main Cloud nodes will be placed in data centers strategically located across the globe, while tactical edge Cloud nodes will be integrated within select existing equipment currently on units Modified Tables of Organization & Equipment (MTOE). The fundamental intent and tenet of this approach is to reduce forward deployed equipment/footprint by co-locating the advanced analytics capabilities within the DCGS-A baseline with the regional data centers, where the data is stored. This infrastructure consolidation simultaneously reduces processor and communications requirements in tactical units by limiting the number of large data files transported across tactical communications systems. The first DCGS-A Cloud node reached its initial operating capability in Operation Enduring Freedom

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/Surface Systems</i>
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(OEF) in FY11. The design, development, and initial deployment of prototype tactical edge nodes will be in 4QFY11. Following a successful operational assessment and Milestone C in 2QFY12/Full Deployment Decision in 4QFY12, DCGS-A Software Baseline (DSB) 1.0 capability will be deployed throughout the Army.

DCGS-A consolidates, enhances, and modernizes the tasking, processing, exploitation, and dissemination (TPED) capabilities formerly found in nine Army intelligence programs of record and two Quick Reaction Capabilities. DCGS-A provides these technologically advanced PED capabilities in tailored and scalable mobile and fixed configurations in all maneuver and maneuver support units from Company Intelligence Support Team to Army Service Component Command, and in select maneuver sustainment units battalion and above. The program also will develop software packages to be embedded in mission command and other select systems to provide required ISR/analytic capabilities. DCGS-A is a key component of the DoD ISR Task Force modernization efforts and a critical Army priority.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	119.202	44.198	39.692	-	39.692
Current President's Budget	125.404	31.649	40.876	-	40.876
Total Adjustments	6.202	-12.549	1.184	-	1.184
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	6.202	-12.549	1.184	-	1.184

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT 956: <i>Distributed Common Ground System (DCGS) (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
956: <i>Distributed Common Ground System (DCGS) (MIP)</i>	124.805	31.649	40.876	-	40.876	25.655	14.962	0.354	31.911	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Distributed Common Ground System - Army (DCGS-A) is the Intelligence, Surveillance and Reconnaissance (ISR) System of Systems (SoS) for Joint, Interagency, Allied, Coalition, and National data analysis, sharing and collaboration. The core functions of DCGS-A are: the vertical and horizontal synchronization of ISR Processing, Exploitation and Dissemination (PED) efforts; operations in a networked environment at multiple security levels; the control of select Army and joint sensor systems; the fusion of all acquired data and information, and distribution of relevant red (threat), gray (non-aligned), and environmental (weather and terrain) information; and providing the Warfighters' early warning and targeting capability. DCGS-A provides a single integrated ISR ground processing system composed of common components that are interoperable with sensors, other information sources, all Warfighting Functions, and the Defense Information & Intelligence Enterprise (DI2E). DCGS-A is fielded in Fixed and Mobile configurations emphasizing the use of reach and split based operations by improving accessibility of data in order to reduce forward deployed footprint. As enhanced capabilities are developed and tested, annual software releases are integrated into Army Common/commodity hardware and fielded to units IAW the Army Force Generation (ARFORGEN) process.

FY13 Base funding in the amount of \$40.876 million will be used for development of the Command Post Computing Environment (CPCE) as the Lead for PEO IEW&S. As such, DCGS-A is currently aligning its architecture to fit within the Common Operating Environment (COE) as described by the ASA(ALT) COE Implementation Plan. This alignment is in accordance with the G-3/5/7 priority to align all Army networks, procurements, and enhancements under one COE and one vision.

DCGS-A software will be tailored by echelon and scalable to each unit's mission. DCGS-A provides commanders and staffs the ability to maintain an accurate and up to date understanding of the operational environment. DCGS-A's contributions to commanders' visualization and situational awareness, rapid planning, and the synchronization of all warfighting functions, enable Army units to operate within the enemy's decision cycle. This capability enhances tactical and operational maneuver and the conduct of full spectrum operations across the range of military operations from humanitarian to major combat operations.

The DCGS-A configurations range from laptops to systems integrated in tactical shelters and mounted on tactical vehicles to large commodity servers operating in a Cloud Processing Architecture. Main Cloud nodes will be placed in data centers strategically located across the globe, while tactical edge Cloud nodes will be integrated within select existing equipment currently on units Modified Tables of Organization & Equipment (MTOE). The fundamental intent and tenet of this approach is to reduce forward deployed equipment/footprint by co-locating the advanced analytics capabilities within the DCGS-A baseline with the regional data centers, where the data is stored. This infrastructure consolidation simultaneously reduces processor and communications requirements in tactical units by limiting the number of large data files transported across tactical communications systems. The first DCGS-A Cloud node reached its initial operating capability in Operation Enduring Freedom (OEF) in FY11. The design, development, and initial deployment of prototype tactical edge nodes will be in 4QFY11. Following a successful operational assessment and Milestone C in 2QFY12/Full Deployment Decision in 4QFY12, DCGS-A Software Baseline (DSB) 1.0 capability will be deployed throughout the Army.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT 956: <i>Distributed Common Ground System (DCGS) (MIP)</i>
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DCGS-A consolidates, enhances, and modernizes the tasking, processing, exploitation, and dissemination (TPED) capabilities formerly found in nine Army intelligence programs of record and two Quick Reaction Capabilities. DCGS-A provides these technologically advanced PED capabilities in tailored and scalable mobile and fixed configurations in all maneuver and maneuver support units from Company Intelligence Support Team to Army Service Component Command, and in select maneuver sustainment units battalion and above. The program also will develop software packages to be embedded in mission command and other select systems to provide required ISR/analytic capabilities. DCGS-A is a key component of the DoD ISR Task Force modernization efforts and a critical Army priority.

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Title: Design and Development of DCGS-A enterprise level net-centric architecture</p> <p align="right">Articles:</p>	98.057 0	3.164 0	26.712	-	26.712
<p>Description: Continue design and development of DCGS-A enterprise level net-centric architecture to include: Development & Integration of DCGS-A Software; DT/OT, Mobile Basic Contract Deliverables, and Program Management support costs. Global Unified Data Environment (Cloud) - development - to create direct Data Ingest of varying intelligence data types and development of analytical tools to exploit single -INT data, further enhancing Cloud Enterprise Account Management load distribution of enterprise level complex searches. Development of Cloud to Cloud Data Synchronization technologies and enhanced data management applications between Cloud and Edge nodes.</p>					
<p>FY 2011 Accomplishments: Continue design and development of DCGS-A enterprise level net-centric architecture to include: Development & Integration of DCGS-A Software; Limited User Test, Developmental Testing, Mobile Basic Data and Program Management support costs</p>					
<p>FY 2012 Plans: Continue and complete design and development of DCGS-A enterprise level net-centric architecture to include: Development & Integration of DCGS-A Software; IOT&E, Developmental Testing, DCGS-A and Program Management support costs</p>					
<p>FY 2013 Base Plans: Continue design and development of DCGS-A enterprise level net-centric architecture to include: Development & Integration of DCGS-A Software; DT/OT and Program Management support costs. Global Unified Data Environment (Cloud) - development - to create direct Data Ingest of varying intelligence data types and development of analytical tools to exploit single -INT data, further enhancing Cloud Enterprise Account Management load distribution of enterprise level complex searches. Development of Cloud to Cloud Data Synchronization technologies and enhanced data management applications between Cloud and Edge nodes.</p>					
<p>Title: Cloud development</p>	13.200	21.500	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012			
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT 956: <i>Distributed Common Ground System (DCGS) (MIP)</i>				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
		FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Articles:		0	0			
Description: Global Unified Data Environment (Cloud) development - creates near real-time multi-intelligence analytics environment, extends access and reduces analytic response time.						
FY 2011 Accomplishments: Global Unified Data Environment (Cloud) development - creates near real-time multi-intelligence analytics environment, extends access and reduces analytic response time.						
FY 2012 Plans: Global Unified Data Environment (Cloud) - development - to create near real time multi-intelligence analytics environment, extend Cloud Enterprise access and reduces Intelligence Product production time.						
Title: Human Terrain Teams		3.000	-	-	-	-
Articles:		0				
Description: Human Terrain Teams - Completed development of software for the MAP-HT system for capabilities above the baseline 1.0 release.						
FY 2011 Accomplishments: Human Terrain Teams - Completed development of software for the MAP-HT system for capabilities above the baseline 1.0 release.						
Title: Matrix Support including SIL S/W Support		3.591	-	4.554	-	4.554
Articles:		0				
Description: Matrix Support including SIL S/W Support						
FY 2011 Accomplishments: Matrix Support including SIL S/W Support						
FY 2013 Base Plans: Matrix Support including SIL S/W Support						
Title: Army and Joint Testing/Development/Operational Test Support		-	4.551	6.507	-	6.507
Articles:			0			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT 956: <i>Distributed Common Ground System (DCGS) (MIP)</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
<p>Description: Ongoing Army and Joint interoperability testing and evaluation to include Operational Assessment (NIE Operational Assessment), JITC, and Operational Test</p> <p>FY 2012 Plans: Ongoing Army and Joint interoperability testing and evaluation to include Operational Assessment (NIE Operational Assessment), JITC, and Operational Test</p> <p>FY 2013 Base Plans: Development Test/Operational Test Support</p>					
<p>Title: Support Costs and Management Services</p> <p align="right">Articles:</p>	6.957 0	2.434 0	3.103	-	3.103
<p>Description: Funding is provided for the following effort/Project Management Support</p> <p>FY 2011 Accomplishments: Provide matrix support and PMO efforts</p> <p>FY 2012 Plans: Provide matrix support and PMO efforts</p> <p>FY 2013 Base Plans: Provide matrix support and PMO efforts</p>					
Accomplishments/Planned Programs Subtotals	124.805	31.649	40.876	-	40.876

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• DCGS-A (MIP): <i>DCGS-A (MIP)</i>	334.516	227.548	184.507	166.094	350.601		286.377	406.239	409.643	Continuing	Continuing

D. Acquisition Strategy
The Distributed Common Ground System-Army (DCGS-A) program was created in response to the Department of Defense (DoD) Distributed Common Ground/ Surface System (DCGS) Mission Area Initial Capabilities Document (MA ICD) dated 13 Aug 2004, which captured the overarching requirements for an Intelligence, Surveillance, and Reconnaissance (ISR) Family of Systems (FoS) that will contribute to Joint and combined Warfighter needs. That ICD was updated as the Distributed Common Ground/Surface System (DCG/SS) Enterprise ICD, and approved by the Joint Requirements Oversight Council (JROC) 27 Feb 2009. The Army

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	956: <i>Distributed Common Ground System (DCGS) (MIP)</i>

requirements were refined in the DCGS-A Capabilities Development Document (CDD), and approved by the JROC 31 Oct 2005. The DCGS-A program is currently in the Engineering, Manufacturing and Development (EMD) phase and was designated as a Major Automated Information System (MAIS) in OSD (AT&L) Memorandum, 29 Mar 2010.

DCGS-A is following an evolutionary acquisition approach to develop and field system capabilities over time to satisfy the requirements of the DCGS-A Capability Development Document (CDD). Following this approach, the first increment was defined and a Capability Production Document (CPD) was created with full consideration of all of the preceding supporting documents and analysis. As part of its initial staffing, a Cost Benefit Analysis was completed in support of the DCGS-A CPD. This analysis projected a significant cost avoidance/savings over the life cycle by not limiting the hardware configuration to a one size fits all unit types design but rather integrating the DCGS-A SW capabilities into common servers and other IT components fielded at that echelon. This approach was included in the CPD and updated DCGS-A Acquisition Strategy. The CPD was approved by the JROC on 20 Dec 2011.

The DCGS-A System Engineering Plan (SEP) updated the current development plan and was approved by OASD (R&E) on 5 Dec 2011. The DCGS-A Revised Acquisition Strategy (AS) is awaiting approval by the Defense Acquisition Executive (DAE). It is anticipated the DCGS-A Acquisition Program Baseline will be approved in 2Q12. The DCGS-A program is currently preparing for a milestone C in 2Q12 and an operational test in 2Q-3Q12 and subsequent FDD decision in 4Q12.

PM DCGS-A has been designated as the Command Post Computing Environment (CPCE) Lead for PEO IEW&S. As such, DCGS-A is currently aligning it's architecture to fit within the Common Operating Environment (COE) as described by the ASA(ALT) COE Implementation Plan. This alignment is in accordance with the G-3/5/7 priority to align all Army networks, procurements, and enhancements under one COE and one vision. Our acquisition strategy supports this initiative as we continue to collapse PORs and reduce footprint following our capability migration path and iterative development approach in support of an "IT Box" requirements prioritization process. As we continue the path to DSB 1.0 and beyond, each release will focus on the COE and continually align the Command Post activities with DCGS-A Cloud, Edge Node, and POR migration activities.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT 956: <i>Distributed Common Ground System (DCGS) (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	Various	PM, DCGS-A:APG, MD	22.552	2.434		3.103		-		3.103	Continuing	Continuing	Continuing
Subtotal			22.552	2.434		3.103		-		3.103			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Metadata Catalog	Various	MITRE, various	17.865	-		-		-		-	Continuing	Continuing	Continuing
Design & Develop DCGS-A Architecture	Various	Northrup Grumman: Linthicum, MD	220.204	3.164		26.712		-		26.712	Continuing	Continuing	0.000
SCDL	Various	CUBIC: Orlando, Fla.	0.788	-		-		-		-	Continuing	Continuing	0.000
Global Unified Data Environment (Cloud) Development	Various	CERDEC/SEC: APG, MD	-	21.500		-		-		-	Continuing	Continuing	0.000
Subtotal			238.857	24.664		26.712		-		26.712			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support Government Test & Integration Lab	Various	CECOM: CECOM	14.180	-		4.554		-		4.554	Continuing	Continuing	Continuing
Subtotal			14.180	-		4.554		-		4.554			

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test support for DCGS-A	Various	ATEC: ATEC	8.636	1.651		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT 956: <i>Distributed Common Ground System (DCGS) (MIP)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Empire Challenge 11			■																									
Developmental Test/End User Test DSB 1.0			■																									
IOT&E DCGS-A Software Baseline (DSB)							■																					
Full Deployment Decision							■																					
Developmental Test/Operational Test DSB 1.1											■																	
Developmental Test/Operational Test DSB 1.2												■																
Developmental Test/Operational Test DSB 1.3																■												
Fielding & Training DSB 1.0											■																	
DSB 1.0 Initial Operational Capability											■																	
Fielding & Training DSB 1.1												■																
Fielding & Training DSB 1.2																■												
Fielding & Training DSB 1.3																				■								

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT 956: <i>Distributed Common Ground System (DCGS) (MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Empire Challenge 11	3	2011	4	2011
Developmental Test/End User Test DSB 1.0	4	2011	4	2011
IOT&E DCGS-A Software Baseline (DSB)	3	2012	4	2012
Full Deployment Decision	4	2012	4	2012
Developmental Test/Operational Test DSB 1.1	3	2013	3	2013
Developmental Test/Operational Test DSB 1.2	3	2014	3	2014
Developmental Test/Operational Test DSB 1.3	3	2015	3	2015
Fielding & Training DSB 1.0	1	2013	4	2013
DSB 1.0 Initial Operational Capability	3	2013	3	2013
Fielding & Training DSB 1.1	1	2014	1	2015
Fielding & Training DSB 1.2	2	2015	2	2016
Fielding & Training DSB 1.3	3	2016	4	2017

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305208A: <i>Distributed Common Ground/ Surface Systems</i>	PROJECT D15: <i>MUSE & TES TADSS (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
D15: <i>MUSE & TES TADSS (MIP)</i>	0.599	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Training Aids, Devices, Simulators and Simulations (TADSS) for the Tactical Exploitation System (TES), enables development and ingestion of sensors and battlespace updates into the moduling and simulation exercise tool (MUSE) for up-to-date pre-deployment training on the Tactical Exploitation System (TES), a Corps and Division multi-intelligence processor capability that has now transitioned into the Defense Common Ground System -Army (DCGS-A) program.

A. Mission Description and Budget Item Justification

funds Training Aids, Devices, Simulators and Simulations (TADSS) for the Tactical Exploitation System (TES). (Note: these funds and activities have transitioned to PM DCGS-A)

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

	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: TADSS	0.599	-	-	-	-
Articles:	0				
Description: Funding is provided for the following effort					
FY 2011 Accomplishments: Continue Training Aids, Devices, Simulators and Simulations (TADSS)					
Accomplishments/Planned Programs Subtotals	0.599	-	-	-	-

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

N/A

D. Acquisition Strategy

Execute funds to support continued ingest of sensor and CONOPS changes to ensure modeling and simulation tools accurately reflect battlespace for optimal use in training and exercises.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	119.195	121.846	74.618	-	74.618	14.705	2.513	19.760	20.092	Continuing	Continuing
MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>	119.195	121.846	74.618	-	74.618	14.705	2.513	19.760	20.092	Continuing	Continuing

Note

Prior to FY2011, ERMP RDT&E funding was in PE 0305204A, Project D09.

A. Mission Description and Budget Item Justification

The production MQ-1C Gray Eagle Unmanned Aircraft System (UAS) has changed based on new Army Guidance from a company sized unit equipped with twelve (12) Unmanned Aircraft (UA) and associated support equipment to balanced Platoons, each capable of operating independently with four (4) Aircraft. Each will be equipped with a Standard Equipment Package (SEP), Ground Equipment and the following Payloads: Electro-Optical/Infrared, Laser Range Finder/Laser Designator (EO/IR/LRF/LD), communications relay, and up to four (4) HELLFIRE Missiles. The SEP includes: two (2) Universal Ground Control Stations (UGCS), two (2) Ground Data Terminal?s (GDT?s), one (1) Satellite Communication (SATCOM) Ground Data Terminal (SGDT), one (1) Portable Ground Control Station (PGCS), one (1) Portable Ground Data Terminal (PGDT), one (1) Automatic Take-off and Landing System (ATLS) set which includes (2) Tactical Automatic Landing Systems (TALS), and ground support equipment.

Ground Based Sense and Avoid (GBSAA) provides a solution to the ?See and Avoid? issues associated with gaining access to the National Airspace System (NAS) for UAS. GBSAA is a ground-based means of detecting airborne traffic and providing the necessary intelligence to the UAS, allowing it to Sense and Avoid (SAA) as an alternate means of compliance with CFR Part 91.

Justification: FY 2013 funding of \$74,618 million will provide for software/hardware fixes identified from the Initial Test and Evaluation (IOTE) in FY2012. It will provide funding to conduct the Follow-On Test and Evaluation (FOTE) for the Universal Ground Control Station (UGCS) and the Universal Ground Data Terminal, GBSAA development, testing and integration of the Phase I Plus systems.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	123.156	137.038	66.124	-	66.124
Current President's Budget	119.195	121.846	74.618	-	74.618
Total Adjustments	-3.961	-15.192	8.494	-	8.494
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-3.961	-15.192	8.494	-	8.494

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>	PROJECT MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>	119.195	121.846	74.618	-	74.618	14.705	2.513	19.760	20.092	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Prior to FY2011, Gray Eagle RDT&E funding was in PE 0305204A, Project D09.

A. Mission Description and Budget Item Justification

The production MQ-1C Gray Eagle Unmanned Aircraft System (UAS) has changed based on new Army Guidance from a company sized unit equipped with twelve (12) Unmanned Aircraft (UA) and associated support equipment to balanced Platoons, each capable of operating independently with four (4) Aircraft. Each will be equipped with a Standard Equipment Package (SEP), Ground Equipment and the following Payloads: Electro-Optical/Infrared, Laser Range Finder/Laser Designator (EO/IR/LRF/LD), communications relay, and up to four (4) HELLFIRE Missiles. The SEP includes: two (2) Universal Ground Control Stations (UGCS), two (2) Ground Data Terminal?s (GDT?s), one (1) Satellite Communication (SATCOM) Ground Data Terminal (SGDT), one (1) Portable Ground Control Station (PGCS), one (1) Portable Ground Data Terminal (PGDT), one (1) Automatic Take-off and Landing System (ATLS) set which includes (2) Tactical Automatic Landing Systems (TALS), and ground support equipment.

Ground Based Sense and Avoid (GBSAA) provides a solution to the ?See and Avoid? issues associated with gaining access to the National Airspace System (NAS) for UAS. GBSAA is a ground-based means of detecting airborne traffic and providing the necessary intelligence to the UAS, allowing it to Sense and Avoid (SAA) as an alternate means of compliance with CFR Part 91.

Justification: FY 2013 funding of \$74,618 million will provide for software/hardware fixes identified from the Initial Test and Evaluation (IOTE) in FY2012. It will provide funding to conduct the Follow-On Test and Evaluation (FOTE) for the Universal Ground Control Station (UGCS) and the Universal Ground Data Terminal, GBSAA development, testing and integration of the Phase I Plus systems.

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

	FY 2011	FY 2012	FY 2013
Title: ERMP EMD System including Electro-Optical / Infrared, synthetic Aperture Radar, and communications Relay Payloads	57.695	79.039	-
Articles:	0	0	
Description: ERMP EMD System including Electro-Optical / Infrared, synthetic Aperture Radar, and communications Relay Payloads			
FY 2011 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>	PROJECT MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
ERMP EMD System including Electro-Optical / Infrared, synthetic Aperture Radar, and communications Relay Payloads FY 2012 Plans: ERMP EMD System including Electro-Optical / Infrared, synthetic Aperture Radar, and Communications Relay Payloads Title: Gray Eagle Software / Hardware Development Description: Gray Eagle Software / Hardware Development FY 2013 Plans: Gray Eagle Software / Hardware Development		-	-	18.919
Title: Government Test support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO) Description: Government Test support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO) FY 2011 Accomplishments: Government Test support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO) FY 2012 Plans: Government Test support including IOT&E, LUT, Logistics Demonstration Operational Tempo (OPTEMPO) FY 2013 Plans: Government Test support including FOT&E		20.500 Articles: 0	18.165 0	28.031
Title: Gray Eagle System Training and Training Equipment Development Description: Gray Eagle System Training and Training Equipment Development FY 2011 Accomplishments: Gray Eagle System Training and Training Equipment Development FY 2012 Plans: Gray Eagle System Training and Training Equipment Development FY 2013 Plans: Gray Eagle System Training and Training Equipment Development		18.900 Articles: 0	20.764 0	11.525
Title: Gray Eagle Support including Engineering and Program Management		22.100 Articles: 0	3.878 0	8.450

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>	PROJECT MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Description: Gray Eagle Support including Engineering and Program Management FY 2011 Accomplishments: Gray Eagle Support including Engineering and Program Management FY 2012 Plans: Gray Eagle Support including Engineering and Program Management FY 2013 Plans: Gray Eagle Support including Engineering and Program Management			
Title: Ground Base Sense and Avoid (GBSAA) Description: Ground Base Sense and Avoid (GBSAA) FY 2013 Plans: Ground Base Sense and Avoid (GBSAA)	-	-	7.693
Accomplishments/Planned Programs Subtotals	119.195	121.846	74.618

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MQ-1 UAV / APA (A00005): <i>MQ-1 UAV / APA (A00005) - Base</i>	459.310	550.798	518.088		518.088		232.321			0.000	2,278.977
• MQ-1 UAV / APA (A00025): <i>MQ-1 UAV / APA (A00025) - Weaponization UAS</i>	14.644									0.000	14.644

D. Acquisition Strategy

Extended Range Multi-Purpose (ERMP) Operational Requirement Document (ORD) was approved by the Joint Requirement Oversight Council (JROC) 6 Apr 2005, Milestone B occurred 20 Apr 2005, and the System Development and Demonstration contract was awarded 8 Aug 2005, as a result of a competitive solicitation which included a vendor system capabilities demonstration. Capabilities Production Document was approved 14 Mar 09. To meet the required capability, evolutionary acquisition has been employed to implement the incremental approach outlined in the CPD. The Gray Eagle UAS is being matured during the System Development and Demonstration (SDD) phase, which includes the development and integration of key components such as the Tactical Common Data Link (TCDL), Link-16, and integration of Government Furnished Equipment (GFE), payloads, appropriate Common Aviation Ground Support Equipment and the One System GCS. PM JAMS is developing the P+ model of the HELLFIRE missile and participating in the integration and test activities for the entire Gray Eagle system. PM JAMS is budgeting for the

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>	MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>

procurement of missiles for the fielded systems. PM Night Vision/Reconnaissance, Surveillance, and Target Acquisition (RSTA) under PEO Intelligence and Electronic Warfare Systems (IEW) develops, manages, and competes in the POM and is responsible for meeting all ERMP costs associated for payloads, payload integration, and payload sustainment. Field Tests at the Electronic Proving Grounds in Ft Huachuca, AZ, and integration tests at the Central Technical Support Facility in Ft Hood, TX, are examples of the tests planned to reduce risk in the SDD phase.

FY2013 and beyond funding allows for the development and integration of Pre-Planned Product Improvements, such as interoperability compliance initiatives and a Universal Armament Interface, and Block upgrades. These improvements will be implemented through a CPFF engineering services contract and/or engineering change proposals with the Gray Eagle prime contractor.

The LRIP will:

- a. Establish an effective and efficient production base for the system required to provide a solid foundation on which to build FRP systems.
- b. Permit an orderly increase in production rate to mitigate risk.
- c. Procure production representative equipment to support test & evaluation.
- d. Support Doctrine, Training, Leadership Development, Organization, Materiel, Personnel and Facilities (DTLOMPF) and Tactics, Techniques and Procedures (TTP) development.
- e. Provide an opportunity to incorporate lessons learned from the comprehensive test and evaluation program into the production baseline.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>	PROJECT MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM UAS:Redstone Arsenal, AL	36.112	3.602		3.380		-		3.380	Continuing	Continuing	Continuing
Subtotal			36.112	3.602		3.380		-		3.380			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Engineering	C/CPIF	General Atomics / ASI:San Diego, CA	116.521	35.862		13.674		-		13.674	Continuing	Continuing	Continuing
Prototype Manufacturing	Various	General Atomics / ASI:San Diego, CA	213.776	-		-		-		-	Continuing	Continuing	0.000
Ground Support Equipment	C/CPIF	Various:Various	9.075	-		-		-		-	Continuing	Continuing	0.000
Ground Base Sense & Avoid (GBSAA)	SS/CPFF	General Atomics / ASI:San Diego, CA	-	-		7.693		-		7.693	Continuing	Continuing	0.000
Software / Hardware Development	SS/CPIF	General Atomics:San Diego, CA	-	19.844		7.568		-		7.568	Continuing	Continuing	0.000
Subtotal			339.372	55.706		28.935		-		28.935			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	MIPR	Ft. Huachuca:Ft. Huachuca	83.046	11.954		4.558		-		4.558	Continuing	Continuing	Continuing
Training and Training Equipment	MIPR	Ft. Huachuca:Ft. Huachuca	36.943	20.730		11.525		-		11.525	Continuing	Continuing	Continuing
Government Engineering Support	C/FFP	Various:Various	87.086	5.404		5.070		-		5.070	Continuing	Continuing	0.000
Subtotal			207.075	38.088		21.153		-		21.153			

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>	PROJECT MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
System Deployment																												
First Unit Equipped																												
Initial Operational Test and Evaluation (IOT&E)																												
Engineering Software / Hardware Development																												
Full Rate Production Contract Award																												
Initial Operating Capability																												
Follow-on Operational Test and Evaluation																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305219A: <i>MQ-1 Gray Eagle - Army UAV (MIP)</i>	PROJECT MQ1: <i>MQ-1 GRAY EAGLE - ARMY UAV (MIP)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Deployment	2	2012	2	2012
First Unit Equipped	3	2012	3	2012
Initial Operational Test and Evaluation (IOT&E)	4	2012	4	2012
Engineering Software / Hardware Development	1	2013	1	2014
Full Rate Production Contract Award	3	2013	3	2013
Initial Operating Capability	1	2014	1	2014
Follow-on Operational Test and Evaluation	4	2013	4	2013

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232A: <i>RQ-11 Raven</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	1.547	1.935	4.039	-	4.039	2.917	2.977	3.025	3.077	Continuing	Continuing
RA7: <i>RQ-11 RAVEN (MIP)</i>	1.547	1.935	4.039	-	4.039	2.917	2.977	3.025	3.077	Continuing	Continuing

Note

Change Summary Explanation: Funding - FY 11: Program was transferred from PE 375204 to this stand alone PE.

A. Mission Description and Budget Item Justification

The Small Unmanned Aircraft System (SUAS) provides the battalion and below ground maneuver elements critical situational awareness and enhances force protection. The system provides the small unit commander an organic and responsive tactical Reconnaissance, Surveillance, and Target Acquisition (RSTA) capability through the ability to view real-time Full Motion Video (FMV) and sensor data via the system ground control station. Other compatible receivers, such as the One Station Remote Video Terminal (OSRVT) and appropriately equipped manned platforms may also receive the SUAS products.

A SUAS includes three aircraft that must be launched by hand or by some other means that does not require an improved launch/recovery location. In addition to the aircraft, the system contains ground support equipment, which includes an interoperable hand controller. This equipment is fully transportable in or on rucksack type packs that are organic to the unit.

The SUAS RDT&E budget line includes funding for studies and incremental development/upgrade of current SUAS capabilities that will capitalize on new technology insertions based on identified user requirements. Past improvements include a Digital Data Link capability, introduced in 2010, which provided data link security, increased the number of communications channels allowing more aircraft to operate in close proximity, extended range through data link relay capability, and integrated advanced digital payloads. Future enhancements will follow the natural progression of technology and exploitation of improved payloads to meet warfighter needs. FY 2013 and future improvements will be in the areas of: continued communications link encryption; gimbaled payloads; software blocking integration; common hand controller development and integration; ADS-B integration; and noise reduction.

Justification:

FY 2013 engineering services efforts will continue to focus on communication link encryption, GPS Denied / Comms Denied Navigation, Autonomous Air Vehicle behaviors, Simulator upgrades, ADS-B integration, and noise reduction.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232A: <i>RQ-11 Raven</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	1.599	1.938	1.929	-	1.929
Current President's Budget	1.547	1.935	4.039	-	4.039
Total Adjustments	-0.052	-0.003	2.110	-	2.110
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.052	-0.003	2.110	-	2.110

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232A: <i>RQ-11 Raven</i>	PROJECT RA7: <i>RQ-11 RAVEN (MIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
RA7: <i>RQ-11 RAVEN (MIP)</i>	1.547	1.935	4.039	-	4.039	2.917	2.977	3.025	3.077	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Prior to FY 2011, funding for this project was in PE 0305204A, Proj D10.

A. Mission Description and Budget Item Justification

The Small Unmanned Aircraft System (SUAS) provides the battalion and below ground maneuver elements critical situational awareness and enhances force protection. The system provides the small unit commander an organic and responsive tactical Reconnaissance, Surveillance, and Target Acquisition (RSTA) capability through the ability to view real-time Full Motion Video (FMV) and sensor data via the system ground control station. Other compatible receivers, such as the One Station Remote Video Terminal (OSRVT) and appropriately equipped manned platforms may also receive the SUAS products.

A SUAS includes three aircraft that must be launched by hand or by some other means that does not require an improved launch/recovery location. In addition to the aircraft, the system contains ground support equipment, which includes an interoperable hand controller. This equipment is fully transportable in or on rucksack type packs that are organic to the unit.

The SUAS RDT&E budget line includes funding for studies and incremental development/upgrade of current SUAS capabilities that will capitalize on new technology insertions based on identified user requirements. Past improvements include a Digital Data Link capability, introduced in 2010, which provided data link security, increased the number of communications channels allowing more aircraft to operate in close proximity, extended range through data link relay capability, and integrated advanced digital payloads. Future enhancements will follow the natural progression of technology and exploitation of improved payloads to meet warfighter needs. FY 2013 and future improvements will be in the areas of: continued communications link encryption; gimbaled payloads; software blocking integration; common hand controller development and integration; ADS-B integration; and noise reduction.

Justification:

FY 2013 engineering services efforts will continue to focus on communication link encryption, GPS Denied / Comms Denied Navigation, Autonomous Air Vehicle behaviors, Simulator upgrades, ADS-B integration, and noise reduction.

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

	FY 2011	FY 2012	FY 2013
Title: Base: Product Improvement Studies and Development	1.517	1.204	3.295
Articles:	0	0	
Description: Base: Product Improvement Studies and Development			

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232A: <i>RQ-11 Raven</i>	PROJECT RA7: <i>RQ-11 RAVEN (MIP)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Base: Product Improvement Studies and Development <i>FY 2012 Plans:</i> Base: Product Improvement Studies and Development <i>FY 2013 Plans:</i> Base: Product Improvement Studies and Development				
<i>Title:</i> Base: Program Management Support <i>Description:</i> Program Management Support <i>FY 2011 Accomplishments:</i> Base: Program Management Support <i>FY 2012 Plans:</i> Base: Program Management Support <i>FY 2013 Plans:</i> Base: Program Management Support		Articles: 0.030 0	0.571 0	0.581
<i>Title:</i> Base: Other Government Agencies <i>Description:</i> Base: Other Government Agencies <i>FY 2012 Plans:</i> Base: Other Government Agencies <i>FY 2013 Plans:</i> Base: Other Government Agencies		Articles: - 0	0.160 0	0.163
Accomplishments/Planned Programs Subtotals		1.547	1.935	4.039

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army			DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305232A: <i>RQ-11 Raven</i>		PROJECT RA7: <i>RQ-11 RAVEN (MIP)</i>	

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

<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• SUAV (MIP Project D10): <i>SUAV (MIP Project D10) - PE 0305204A, (RDT&E,A)</i>	0.331									0.000	0.331
• RQ-11 (RAVEN) - A00010: <i>RQ-11 (RAVEN) - A00010</i>	37.467	86.062	25.798		25.798		25.342	25.356	26.675	0.000	250.134

D. Acquisition Strategy

SUAS acquisition strategy was based upon a full and open and was awarded in Aug 2005. The Full Rate Production Decision Review was approved in Oct 2006 with Full Rate Production beginning in April 2007. A significant system upgrade was completed in early FY2010 incorporated a Digital Data Link (DDL) which improved operational capability by: incorporating an encryption capability enabling secure data links increasing the number of channels allowing for more air vehicles to be flown in a smaller areas; extending the operational range through communication relay capability; and integration of advanced digital payloads. The first DDL systems were fielded in December 2009. Future efforts will focus on common hand controller, interoperability, and integration of additional / improved payloads utilizing a sole source Cost Plus Fixed Fee Engineering Services contract.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305232A: <i>RQ-11 Raven</i>	PROJECT RA7: <i>RQ-11 RAVEN (MIP)</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Personnel	RO	PM UAS:PM UAS	0.030	0.571		0.581		-		0.581	Continuing	Continuing	Continuing
Subtotal			0.030	0.571		0.581		-		0.581			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Improvements Studies and Development	SS/CPFF	Aero Vironment:Aero Vironment	1.517	1.204		3.295		-		3.295	Continuing	Continuing	Continuing
Subtotal			1.517	1.204		3.295		-		3.295			

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies	MIPR	Various:Various	-	0.160		0.163		-		0.163	Continuing	Continuing	Continuing
Subtotal			-	0.160		0.163		-		0.163			

			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.547	1.935		4.039		-		4.039			

Remarks

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	7.555	31.896	31.158	-	31.158	23.634	22.773	22.953	18.991	Continuing	Continuing
RQ7: <i>RQ-7 SHADOW UAV</i>	7.555	31.896	31.158	-	31.158	23.634	22.773	22.953	18.991	Continuing	Continuing

Note

Prior to FY2011 funding for this project was in PE 0305204A, Project 114.

A. Mission Description and Budget Item Justification

Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system air vehicle meets the required operating range of 50 kilometers and remains on station for up to nine hours. The TUAV Shadow system consists of four air vehicles (each configured with an Electro Optical/Infrared (EO/IR) sensor payload), launcher, ground control and support equipment including: power generation, communications equipment, automated recovery equipment, one system remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) and is supported at the division level by a Mobile Maintenance Facility (MMF).

All 102 Shadow UAS systems have been procured and 93 have been fielded. Shadow has amassed over 709,000 total flight hours, most of which were flown in support of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The Shadow UAS began being deployed to OIF in 2003 and to OIF in 2006. Incremental upgrades are required for continued improvement and interoperability. Common Systems Integration is required to ensure interoperability with other manned and unmanned weapon systems, to include One System Remote Video Transceiver (OSRVT). Continued developmental improvements are required to provide greater interoperability, increase operational capability and flexibility to the Brigade Combat Team. Modifications to the airframe, avionics, payloads, ground control equipment, and support equipment are based on documented requirements and lessons learned units operating in OEF and OIF.

Justification:

FY2013 RQ-7 UAV Base funding of \$31.158 million will be used for Capability Improvements, specifically: Engine improvements (engine development), Air Vehicle modifications (small mission computer development, weatherization, improved fuel system (vented), GPS Denied Operations and redundant avionics development), and Ground Equipment (interoperability) improvements. Additionally, funds will be for System Engineering, Program Management, Software Architecture and Reliability Solutions and System Test and Evaluation support. Funds will also be used to conduct the Increment II OSRVT Limited User Test (LUT), and other applicable OSRVT test events.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	7.805	31.940	30.828	-	30.828
Current President's Budget	7.555	31.896	31.158	-	31.158
Total Adjustments	-0.250	-0.044	0.330	-	0.330
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.250	-0.044	0.330	-	0.330

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>	PROJECT RQ7: <i>RQ-7 SHADOW UAV</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
RQ7: <i>RQ-7 SHADOW UAV</i>	7.555	31.896	31.158	-	31.158	23.634	22.773	22.953	18.991	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Prior to FY2011 funding for this project was in PE 0305204A, Project 114.

A. Mission Description and Budget Item Justification

Tactical Unmanned Aerial Vehicle (TUAV) Shadow 200 provides the Army Brigade Commander with dedicated Reconnaissance, Surveillance and Target Acquisition (RSTA), Intelligence, Battle Damage Assessment (BDA) and Force Protection. The Shadow provides the Brigade Commander with critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level. The TUAV Shadow system air vehicle meets the required operating range of 50 kilometers and remains on station for up to nine hours. The TUAV Shadow system consists of four air vehicles (each configured with an Electro Optical/Infrared (EO/IR) sensor payload), launcher, ground control and support equipment including: power generation, communications equipment, automated recovery equipment, one system remote video terminals, vehicle mounted shelters, and High Mobility Multipurpose Wheeled Vehicles with trailer(s). Each system is equipped with one Maintenance Section Multifunctional (MSM) and is supported at the division level by a Mobile Maintenance Facility (MMF).

All 102 Shadow UAS systems have been procured and 93 have been fielded. Shadow has amassed over 709,000 total flight hours, most of which were flown in support of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The Shadow UAS began being deployed to OIF in 2003 and to OIF in 2006. Incremental upgrades are required for continued improvement and interoperability. Common Systems Integration is required to ensure interoperability with other manned and unmanned weapon systems, to include One System Remote Video Transceiver (OSRVT). Continued developmental improvements are required to provide greater interoperability, increase operational capability and flexibility to the Brigade Combat Team. Modifications to the airframe, avionics, payloads, ground control equipment, and support equipment are based on documented requirements and lessons learned units operating in OEF and OIF.

Justification:

FY2013 RQ-7 UAV Base funding of \$31.158 million will be used for Capability Improvements, specifically: Engine improvements (engine development), Air Vehicle modifications (small mission computer development, weatherization, improved fuel system (vented), GPS Denied Operations and redundant avionics development), and Ground Equipment (interoperability) improvements. Additionally, funds will be for System Engineering, Program Management, Software Architecture and Reliability Solutions and System Test and Evaluation support. Funds will also be used to conduct the Increment II OSRVT Limited User Test (LUT), and other applicable OSRVT test events.

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

	FY 2011	FY 2012	FY 2013
Title: OIF Improvements/Block Upgrades/Capability Improvements	3.105	-	-
Articles:	0		

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>		PROJECT RQ7: <i>RQ-7 SHADOW UAV</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2011
Description: Funding is provided for the following effort				FY 2012
FY 2011 Accomplishments: Funds OIF Improvements/Block Upgrades/Capability Improvements				FY 2013
Title: System Engineering/Reliability Solutions				
Articles:				2.025 0
Description: Funding is provided for the following effort				-
FY 2011 Accomplishments: Continued System Engineering/Reliability Solutions				-
Title: Air Vehicle Improvements				
Articles:				- 0
Description: Funding is provided for the following effort				14.027 0
FY 2012 Plans: Continued funding for Air Vehicle Improvements				10.520
FY 2013 Plans: Continued development of enhanced fuselage and center wing (including improved weatherization). Begins development of triple redundant avionics suite, and continues reliability improvements. Continues development of larger, more reliable engine.				
Title: Payload Improvements				
Articles:				- 0
Description: Funding is provided for the following effort				7.420 0
FY 2012 Plans: Continues to fund Payload Improvements				6.000
FY 2013 Plans: Continues to fund Payload Improvements				
Title: Ground Equipment Improvements				
Articles:				- 0
Description: Funding is provided for the following effort				2.500 0
				2.768

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>	PROJECT RQ7: <i>RQ-7 SHADOW UAV</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
FY 2012 Plans: Continues to fund Ground Equipment Improvements. Continues development of interoperability capabilities through use of Universal Ground Data Terminals and Universal Ground Control Stations.				
FY 2013 Plans: Continues to fund Ground Equipment Improvements. Continues development of interoperability capabilities through use of Universal Ground Data Terminals and Universal Ground Control Stations.				
Title: One System Remote Video Terminal (OSRVT)		-	3.914	5.883
Articles:			0	
Description: Funding is provided for the following effort				
FY 2012 Plans: Continues to fund One System Remote Video Terminal (OSRVT). Integrate Incremental II bi-directional functionality into the OSRVT.				
FY 2013 Plans: Continues to fund One System Remote Video Terminal (OSRVT). Integrate Incremental II bi-directional functionality into the OSRVT. Software Blocking and Interoperability improvements				
Title: Test and Evaluation		1.500	1.607	1.996
Articles:		0	0	
Description: Funding is provided for the following effort				
FY 2011 Accomplishments: Funded Test and Evaluation				
FY 2012 Plans: Continues to fund Test and Evaluation				
FY 2013 Plans: Continues to fund Test and Evaluation				
Title: System Engineering/Program Management		-	2.428	3.991
Articles:			0	
Description: Funding is provided for the following effort				

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>	PROJECT RQ7: <i>RQ-7 SHADOW UAV</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<i>FY 2012 Plans:</i> Continues the funding for System Engineering/Program Management			
<i>FY 2013 Plans:</i> Continues the funding for System Engineering/Program Management			
<i>Title:</i> Program Management Support			
<i>Description:</i> Funding is provided for the following effort			
<i>FY 2011 Accomplishments:</i> Funds Program Management Support			
<i>Title:</i> Other Government Agencies			
<i>Description:</i> Funding is provided for the following effort			
<i>FY 2011 Accomplishments:</i> Funds Other Government Agencies			
Accomplishments/Planned Programs Subtotals	0.475 0	-	-
	0.450 0	-	-
	7.555	31.896	31.158

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• RQ-7 UAV MODS (A00018): <i>RQ-7 UAV MODS (A00018)</i>	548.998	165.139	104.339		104.339		143.584	135.313	137.220	0.000	1,379.383
• TUAV - Initial Spares: <i>TUAV - Initial Spares</i>	2.613									0.000	2.613
• TUAS (MIP Project 114): <i>TUAS (MIP Project 114)</i>	1.619									0.000	1.619

D. Acquisition Strategy

A System Capability Demonstration (SCD) was conducted with four contractors. The results from the SCD in conjunction with proposal evaluations resulted in the competitive down select of a Best Value TUAS. A successful Milestone II ASARC was conducted 21 Dec 99 and a Milestone III Decision 25 Sep 02. The full rate production contract was awarded 27 Dec 02 and all 102 systems were procured by FY2009. Continued development of the selected TUAV system will be

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	PE 0305233A: <i>RQ-7 Shadow UAV</i>	RQ7: <i>RQ-7 SHADOW UAV</i>

accomplished through a series of modifications and retrofits such as Tactical Common Data Link (TCDL), Communications Relay, Laser Designator, High reliability engine, Larger fuselage, and reliability upgrades. Development/integration of these improved capabilities will be through individual efforts on a (mostly) sole source cost-plus fixed fee engineering services contract with the Shadow prime contractor. Development of the larger engine will be accomplished through a competitive process.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>	PROJECT RQ7: <i>RQ-7 SHADOW UAV</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Base: Program Management	RO	PM UAS:Redstone Arsenal, AL	0.475	1.485		1.678		-		1.678	Continuing	Continuing	0.000
Subtotal			0.475	1.485		1.678		-		1.678			0.000

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OIF Improvements / Block Upgrades / Capability Improvements	SS/CPFF	AAI Corporation:Hunt Valley, MD	3.105	-		-		-		-	0.000	3.105	0.000
System Engineering / Reliability Solutions	SS/CPFF	AAI Corporation:Hunt Valley, MD	2.025	-		-		-		-	0.000	2.025	0.000
Base: Air Vehicle Improvements	SS/CPFF	AAI Corporation, MD:AAI Corporation, MD	-	14.027		10.520		-		10.520	Continuing	Continuing	0.000
Base: Ground Equipment Improvements	SS/CPFF	AAI Corporation, MD:AAI Corporation, MD	-	3.000		2.768		-		2.768	Continuing	Continuing	0.000
Base: Payload Improvements	SS/CPFF	Various:Various	-	5.177		6.000		-		6.000	Continuing	Continuing	0.000
Base: One System Remote Video Terminal (OSRVT)	Various	Various:Various	-	3.914		5.883		-		5.883	Continuing	Continuing	0.000
Subtotal			5.130	26.118		25.171		-		25.171			0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various:Various	0.300	1.374		1.550		-		1.550	Continuing	Continuing	Continuing

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>	PROJECT RQ7: <i>RQ-7 SHADOW UAV</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Air Vehicle Improvements																												
Payload Improvements																												
Ground Equipment Improvements																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305233A: <i>RQ-7 Shadow UAV</i>	PROJECT RQ7: <i>RQ-7 SHADOW UAV</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air Vehicle Improvements	1	2012	4	2017
Payload Improvements	1	2012	4	2017
Ground Equipment Improvements	1	2012	4	2017

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

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0305235A: <i>UAS Modifications/Product Improvement Program</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	7.500	2.387	-	2.387	51.019	122.502	61.087	60.696	Continuing	Continuing
P20: MQ-18	-	7.500	2.387	-	2.387	51.019	122.502	61.087	60.696	Continuing	Continuing

Note

Funds transferred from 0603820/D20

A. Mission Description and Budget Item Justification

The Army has a requirement to provide Intelligence, Surveillance, and Reconnaissance (ISR) platforms capable of operating in and near unfriendly territories/areas of conflict. The system shall be a rotary wing unmanned vertical takeoff and landing(VTOL) aircraft system not conducive to standard airfields but forward deployable to support extended operations in austere environment. The aircraft system will be made up of multiple aircraft (minimum of 4) that incorporates high value technologies in the airframe, propulsion, datalink systems, communications systems, and avionics systems. The system will be common with the Army selection of the Line of Sight and Beyond Line of Sight Tactical Common Data Link and the Universal Ground Control Station. The aircraft will simultaneously carry multi-functional payloads such as SIGINT, EO/IR/LD, and Wide Area Surveillance without degrading time on station. This system will provide dramatic improvements in operational flexibility and mission performance.

FY 2013 RDT&E funds will be used for Request for Proposal (RFP) and Source Selection.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	7.500	2.387	-	2.387
Total Adjustments	-	7.500	2.387	-	2.387
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	7.500	2.387	-	2.387

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305235A: <i>UAS Modifications/Product Improvement Program</i>	PROJECT P20: <i>MQ-18</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
P20: <i>MQ-18</i>	-	7.500	2.387	-	2.387	51.019	122.502	61.087	60.696	Continuing	Continuing
Quantity of RDT&E Articles											

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Army has a requirement to provide Intelligence, Surveillance, and Reconnaissance (ISR) platforms capable of operating in and near unfriendly territories/areas of conflict. The system shall be a rotary wing unmanned vertical takeoff and landing(VTOL) aircraft system not conducive to standard airfields but forward deployable to support extended operations in austere environment. The aircraft system will be made up of multiple aircraft (minimum of 4) that incorporates high value technologies in the airframe, propulsion, datalink systems, communications systems, and avionics systems. The system will be common with the Army selection of the Line of Sight and Beyond Line of Sight Tactical Common Data Link and the Universal Ground Control Station. The aircraft will simultaneously carry multi-functional payloads such as SIGINT, EO/IR/LD, and Wide Area Surveillance without degrading time on station. This system will provide dramatic improvements in operational flexibility and mission performance.

FY 2013 RDT&E funds will be used for Request for Proposal (RFP) and Source Selection.

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

	FY 2011	FY 2012	FY 2013
<p>Title: Program Management Support</p> <p align="right">Articles:</p> <p>Description: Funds Program Management to support Capabilities Development Document support, Milestone A Documentation Preparation, Industry Day, Request for Proposals, Statement of Work, Acquisition Documentation and Cost Analysis</p> <p>FY 2012 Plans: Provide funding for program management support</p> <p>FY 2013 Plans: Provide funding for program management support</p>	-	4.000 0	2.387
<p>Title: Analysis of Alternatives</p> <p align="right">Articles:</p> <p>Description: Analysis of Alternatives</p> <p>FY 2012 Plans:</p>	-	3.500 0	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305235A: <i>UAS Modifications/Product Improvement Program</i>	PROJECT P20: <i>MQ-18</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Analysis of Alternatives			
Accomplishments/Planned Programs Subtotals	-	7.500	2.387

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

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• VTOL UAS / APA (A00035): VTOL UAS / APA (A00035)								107.151	107.133	0.000	214.284

D. Acquisition Strategy

The Medium Range Multi-Purpose Vertical Take-Off and Landing (VTOL) program is planned to enter the acquisition cycle at Milestone A in FY2013, and as such the contents of this acquisition strategy are still pre-decisional. Overall, the Army plans to conduct this program as full and open competition, incorporating the tenets of the Defense Acquisition Executive's Better Buying Power initiatives.

The Army intends to use the Universal Ground Control Station (UGCS) and the Universal Ground Data Terminal (UGDT) already being integrated into the Gray Eagle program as the ground control element of this system. This is being done to ensure commonality, interoperability, and reduced life cycle cost. Assuming more than one competitive vendor, the Army plans to award two competitive, cost-type Technology Development (TD) contracts in FY 2014. The purpose of these contracts will be to reduce technical risk, to determine and mature the appropriate set of technologies to be integrated into the full system, and to demonstrate critical technologies on prototype.

Following a successful Milestone B decision planned in FY2015, the Army intends to down select to one of the two TD vendors for the Engineering and Manufacturing Development (EMD) phase. The EMD contract is planned to be awarded as a cost-type contract.

E. Performance Metrics

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305235A: <i>UAS Modifications/Product Improvement Program</i>	PROJECT P20: <i>MQ-18</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Technology Development																												
Technology System Readiness Review																												
Technology Preliminary Design Review																												
Milestone A																												
Milestone B																												
Technology Development PDR																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0305235A: <i>UAS Modifications/Product Improvement Program</i>	PROJECT P20: <i>MQ-18</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Technology Development	1	2014	1	2016
Technology System Readiness Review	2	2014	2	2014
Technology Preliminary Design Review	2	2014	2	2014
Milestone A	1	2013	1	2013
Milestone B	4	2015	4	2015
Technology Development PDR	3	2014	3	2014

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	2.069	15.018	15.248	-	15.248	15.240	15.690	2.184	2.235	Continuing	Continuing
BI7: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>	2.069	15.018	15.248	-	15.248	15.240	15.690	2.184	2.235	Continuing	Continuing

Note
In FY2010, this program was reflected under Program Element 0303140A Project 50B and 5PM.

A. Mission Description and Budget Item Justification

Joint Personnel Identification Version 2 (JPIv2) will provide an Army tactical biometric collection capability to capture an adversary or neutral person's biometric data and enroll them into the Department of Defense (DoD) enterprise authoritative biometric database to positively identify and verify the identity of actual or potential adversaries. JPIv2 development will be informed by prototype collection capabilities. U.S. forces are currently operating unilaterally or in combination with joint, multinational, and interagency partners, to identify unknown individuals and verify the identity of person(s) across the full spectrum of military operations. Capabilities proposed for JPIv2 will be configurable for multiple operational mission environments. JPIv2 planned development employs integrated software and sensors to capture multimodal information in an interoperable system facilitating the use of biometrics. JPIv2 captures an individual's identity utilizing the person's unique physiological, and/or behavioral features and linking this identity to the individual's past activities, earlier encounters, and previously used identities. The operating environment includes anywhere military forces may operate. The JPIv2 will interoperate with a variety of other biometric collection, database, and information systems and adhere to applicable technical standards.

FY2013 Core funding supports the planning, development and preparation for a Milestone B decision in FY2013. Funds will also support development activities under an Engineering and Manufacturing Development (EMD) contract for JPIv2 program of record. EMD efforts include: defining system of systems functionality and interface requirements; complete preliminary design to include both hardware and software; define and develop system maturity, reliability and technical performance measures; develop operational deployment sustainability, suitability and survivability plans; and conduct technical reviews consistent with required system capability. Additionally, funding will support government civilian labor and operations to include travel, training, supplies, infrastructure, and facility costs. Funds will also support Test and Evaluation (T&E) activities under an EMD contract for JPIv2 program of record. EMD T&E efforts include: development of test plans against system requirements; conducting preliminary testing of system of systems functionality; production of test reports to inform developmental activities; and providing T&E support to scheduled technical reviews.

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013 Base</u>	<u>FY 2013 OCO</u>	<u>FY 2013 Total</u>
Previous President's Budget	14.114	15.018	15.357	-	15.357
Current President's Budget	2.069	15.018	15.248	-	15.248
Total Adjustments	-12.045	-	-0.109	-	-0.109
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.109	-	-0.109
• Other Adjustments 1	-12.045	-	-	-	-

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>	PROJECT BI7: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
BI7: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>	2.069	15.018	15.248	-	15.248	15.240	15.690	2.184	2.235	Continuing	Continuing
Quantity of RDT&E Articles											

Note
Prior to FY 2011, program was funded in Program Element 0303140A Project 50B and Project 5PM.

A. Mission Description and Budget Item Justification

Joint Personnel Identification Version 2 (JPIv2) will provide an Army tactical biometric collection capability to capture an adversary or neutral person's biometric data and enroll them into the Department of Defense (DoD) enterprise authoritative biometric database to positively identify and verify the identity of actual or potential adversaries. JPIv2 development will be informed by prototype collection capabilities. U.S. forces are currently operating unilaterally or in combination with joint, multinational, and interagency partners, to identify unknown individuals and verify the identity of person(s) across the full spectrum of military operations. Capabilities proposed for JPIv2 will be configurable for multiple operational mission environments. JPIv2 planned development employs integrated software and sensors to capture multimodal information in an interoperable system facilitating the use of biometrics. JPIv2 captures an individual's identity utilizing the person's unique physiological, and/or behavioral features and linking this identity to the individual's past activities, earlier encounters, and previously used identities. The operating environment includes anywhere military forces may operate. The JPIv2 will interoperate with a variety of other biometric collection, database, and information systems and adhere to applicable technical standards.

FY2013 Core funding supports the planning, development and preparation for a Milestone B decision in FY2013. Funds will also support development activities under an Engineering and Manufacturing Development (EMD) contract for JPIv2 program of record. EMD efforts include: defining system of systems functionality and interface requirements; complete preliminary design to include both hardware and software; define and develop system maturity, reliability and technical performance measures; develop operational deployment sustainability, suitability and survivability plans; and conduct technical reviews consistent with required system capability. Additionally, funding will support government civilian labor and operations to include travel, training, supplies, infrastructure, and facility costs. Funds will also support Test and Evaluation (T&E) activities under an EMD contract for JPIv2 program of record. EMD T&E efforts include: development of test plans against system requirements; conducting preliminary testing of system of systems functionality; production of test reports to inform developmental activities; and providing T&E support to scheduled technical reviews.

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

	FY 2011	FY 2012	FY 2013
Title: Joint Personnel Identification version 2 (JPIv2)	2.069	15.018	15.248
Articles:	0	0	
Description: JPIv2 Program development and management			
FY 2011 Accomplishments:			

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>	PROJECT B17: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
<p>\$2.069M funded government civilian labor and operational support costs to include travel, training, supplies, infrastructure, and facility costs. Efforts included requirements analysis; acquisition strategy development; detailed statement of work and schedule of events for engineering resources and specific task objectives; Acquisition strategy development involving analyzing legacy systems and understanding the capability gaps in meeting the envisioned enduring solution.</p> <p><i>FY 2012 Plans:</i> Provides system engineering activities supporting operation and evaluation of current technology prototypes for integration into what will be the newly developed tactical biometric collection devices (JPIv2) to satisfy the Capabilities Development Document (CDD) requirements. Activities shall also support a Preliminary Design Review (PDR) in preparation for an Acquisition Category (ACAT) (Special Interest) Milestone B decision. Funds will be used for government civilian labor and operation support to include travel, training, supplies, infrastructure, and facility costs. Provides T&E activities supporting operation and evaluation of prototype devices as part of the Preliminary Design Review (PDR) in preparation for an Acquisition Category (ACAT) I - (Special Interest) Milestone B decision. Funds will provide Product Manager contractor support to plan, develop and prepare Army and Office of the Secretary of Defense (OSD) level documentation consistent with DoD Instruction 5000.02, The Defense Acquisition System, and compliant with existing statutory and regulatory policy for a Milestone B decision in FY13.</p> <p><i>FY 2013 Plans:</i> Funds will provide Product Manager contractor support to plan, develop and prepare Army and Office of the Secretary of Defense (OSD) level documentation consistent with DoD Instruction 5000.02, The Defense Acquisition System, and compliant with existing statutory and regulatory policy for a Milestone B decision in FY13. Funds support development activities under an Engineering & Manufacturing Development (EMD) contract for JPIv2 program of record. EMD efforts include: defining system of systems functionality and interface requirements; complete preliminary design to include both hardware and software; define and develop system maturity, reliability and technical performance measures; develop operational deployment sustainability, suitability and survivability plans; and conduct technical reviews consistent with required system capability. Funds will be used for government civilian labor and operational support to include travel, training, supplies, infrastructure, and facility costs. Funds support T&E activities under an EMD contract for JPIv2 program of record. EMD T&E efforts include the development of test plans against system requirements; conducting preliminary testing of system of system functionality; production of test reports to inform developmental activities; and providing T&E support to scheduled technical reviews.</p>			
Accomplishments/Planned Programs Subtotals	2.069	15.018	15.248

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u> <u>Base</u>	<u>FY 2013</u> <u>OCO</u>	<u>FY 2013</u> <u>Total</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA: OPA	8.482	2.322								0.000	10.804

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>	PROJECT B17: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>

D. Acquisition Strategy

The USD (AT&L) on 10 June 2009 held a biometrics Materiel Development Decision at which he directed the Army to conduct an Analysis of Alternatives (AoA) for the Joint Personnel Identification version 2 (JPIv2) program. The Army completed the AoA on 30 April 2010 and recommended an enhanced status quo acquisition approach. This approach will entail selecting and integrating commercial off the shelf (COTS) products to meet the warfighter's needs based on a Capabilities Development Document (CDD). In line with this recommended approach, the Acquisition Strategy for DoD Biometrics JPIv2 program is scheduled to begin development with a Milestone B decision in FY 2013. The current Biometric Automated Toolset-Army Quick Reaction Capability (QRC) will be supported and maintained to include continued sustainment and enhancement while the JPIv2 capabilities are developed. In FY2013, BAT-A will be sustained with Overseas Contingency Operations funding.

E. Performance Metrics

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

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>	PROJECT B17: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Management Services	Various	Various:Various	-	4.795		4.592		-		4.592	Continuing	Continuing	Continuing
FY2011 Congressional Decrement	TBD	Various:Various	4.000	-		-		-		-	0.000	4.000	0.000
Subtotal			4.000	4.795		4.592		-		4.592			

Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FY2011 Congressional Decrement	TBD	N/A:N/A	6.545	-		-		-		-	0.000	6.545	0.000
Base Products Development	C/IDIQ	Various:TBD	-	6.927		6.866		-		6.866	0.000	13.793	0.000
Subtotal			6.545	6.927		6.866		-		6.866	0.000	20.338	0.000

Support (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Civilian Personnel and Other Support Costs	TBD	Various:Various	2.069	2.996		2.790		-		2.790	0.000	7.855	0.000
Subtotal			2.069	2.996		2.790		-		2.790	0.000	7.855	0.000

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IA, T&E, Threat Assessment, Interoperability Certifications	Various	Various:TBD	-	0.300		1.000		-		1.000	Continuing	Continuing	Continuing
FY2011 Congressional Decrement	TBD	Various:TBD	1.500	-		-		-		-	0.000	1.500	0.000

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>	PROJECT B17: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>

	FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestone B Activities					████████████████																							
Milestone Decision												██																
System Development													████████████████															

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Army		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0307665A: <i>Biometrics Enabled Intelligence</i>	PROJECT B17: <i>BIOMETRICS ENABLED INTELLIGENCE - MIP</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B Activities	1	2012	4	2013
Milestone Decision	3	2013	3	2013
System Development	3	2013	2	2015

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

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>				PE 0708045A: <i>End Item Industrial Preparedness Activities</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	56.816	59.297	59.908	-	59.908	59.952	65.150	64.550	66.183	Continuing	Continuing
E25: <i>MFG SCIENCE & TECH</i>	56.816	59.297	59.908	-	59.908	59.952	65.150	64.550	66.183	Continuing	Continuing

Note

Program reduced due to reduction in Army TOA.

A. Mission Description and Budget Item Justification

This program element (PE) develops and demonstrates manufacturing processes that enable improvements in producibility and affordability of emerging and enabling components and subsystems of Army air, ground, Soldier, and command/control/communications systems. Initiatives within the PE result in cost savings and reduced risk of transitioning military-unique manufacturing processes into production. Project E25 fosters the transfer of new/improved manufacturing technologies to the industrial base, including manufacturing efforts that have potential for high payoff across the spectrum of Army systems.

Work in this PE is related to, and fully coordinated with, PE 0603710A (Night Vision Advanced Technology), PE 0602303A (Missile Technology), PE 0602105A (Materials Technology), PE 0602618A (Ballistics Technology), PE 0602601A (Combat Vehicle and Automotive Technology), and PE 0603005A (Combat Vehicle and Automotive Advanced Technology) and PE 0602705A (Electronics and Electronic Devices).

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

Work in this PE is performed by the Army Research, Development, and Engineering Command (RDECOM) and efforts are executed by the Army Research Laboratory (ARL) and appropriate Army Research, Development, and Engineering Centers (RDECs).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Army	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708045A: <i>End Item Industrial Preparedness Activities</i>
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B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	61.098	59.297	70.390	-	70.390
Current President's Budget	56.816	59.297	59.908	-	59.908
Total Adjustments	-4.282	-	-10.482	-	-10.482
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.282	-			
• Adjustments to Budget Years	-	-	-10.482	-	-10.482

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

APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0708045A: <i>End Item Industrial Preparedness Activities</i>	PROJECT E25: <i>MFG SCIENCE & TECH</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
E25: <i>MFG SCIENCE & TECH</i>	56.816	59.297	59.908	-	59.908	59.952	65.150	64.550	66.183	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project develops and demonstrates manufacturing processes that enable improvements in producibility and affordability of emerging and enabling components and subsystems of Army air, ground, Soldier and command/control/communications systems. Focus is on components and subsystems such as advanced armor, power and energy devices, rotors, sensors, displays, propellants and gun tubes. In addition, work is conducted to advance the state of the art in processing and fabrication techniques for coatings, multifunctional materials and structural elements for Army specific applications.

Work supports all Army S&T portfolios. Work in this PE is related to and fully coordinated with PE 0602105A (Materials Technology), PE 0602211A (Aviation Technology), PE 0602303A (Missile Technology), PE 0602601A (Combat Vehicle and Automotive Technology), PE 0602618A (Ballistics Technology), PE 0602705A (Electronics and Electronic Devices), PE 0603003 (Aviation Advanced Technology), PE 0603005A (Combat Vehicle and Automotive Advanced Technology) and PE 0603710A (Night Vision Advanced Technology).

The cited work is consistent with the Assistant Secretary of Defense, Research and Engineering S&T focus areas and the Army Modernization Strategy.

Work in this project is performed by the Army Research, Development, and Engineering Command (RDECOM) and efforts are executed by the Army Research Laboratory (ARL) and appropriate Army Research, Development, and Engineering Centers (RDECs).

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

	FY 2011	FY 2012	FY 2013
Title: Air Systems	10.110	11.963	13.112
Articles:	0	0	
Description: This effort funds manufacturing technology advances needed for more affordable manned and unmanned aircraft components and subsystems. Work focuses on addressing challenges in areas such as engine performance and life, rotor and blade durability, reliable component integration/attachment, structural durability at low weight, and reduced corrosion.			
FY 2011 Accomplishments: Automation of Blade Erosion Coating: Increased manufacturing yield and efficiency of anti-corrosion spray coating processes that increased blade life and quality over current manual coating processes. Advanced Ceramic Manufacturing and Machining: Evaluated high yield manufacturing processes enabling application of new Ceramic Matrix Composite technologies that significantly improved thrust, fuel consumption, and reliability compared to current T-700 helicopter engine. Validated low cost manufacturing solutions for structural components and transitioned to program of record. Manufacturing Technology			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>for Affordable & Reliable UAV Propulsion: identified innovative manufacturing processes to address common engine issues. KIOWA Portable Alignment System (KPAS): demonstrated higher accuracy alignment devices to assist field maintenance and manufacturing processes associated with replacement components on helicopters to include the Kiowa. CH 47 Out of Auto Clave Tunnel Cover: demonstrated new composites manufacturing methods on CH-47 tunnel covers that are lower cost, lighter weight and have improved impact and durability performance than current aluminum honeycomb components.</p> <p>FY 2012 Plans: Apply erosion coating materials onto UH-60 and AH-64 rotor-blades which will decrease the number of blades repaired from 48 to 24 a year and reduce coating costs from \$18K - \$14K per rotor-blade. Develop novel tooling approaches and manufacturing processes to increase UAV heavy fuel engine performance, fuel efficiency and reliability, which reduces overall UAV life cycle costs. Integrate improved heavy fuel engine manufacturing processes into UAV platforms to demonstrate effectiveness. Develop cost effective processes for manufacturing nano-composite coatings which increases performance, durability and reliability of UH-60 and AH-64 components. Automate nano-composite application processes and equipment to reduce coating costs. Manufacture high performance flexible airborne antennas substrates using both chemical and riveting techniques. Improve auto clave, bonding lines and joints to increase yield rates which reduce antenna manufacturing costs. Demonstrate improved cost effective Environmental Barrier Coating (EBC) deposition methods and combine materials, process improvements to reduce fabrication labor and weight for T-700 helicopter engine shrouds.</p> <p>FY 2013 Plans: Will demonstrate an advanced ceramic manufacturing process for the fabrication of Ceramic Matrix Composite (CMC) and Stage High Pressure Turbine (HPT) Shrouds for helicopter engines to reduce overall system weight and improve fuel consumption and reliability; develop manufacturing processes for the use of direct metal laser sintering to reduce cost and increase performance of complex components such as UAV turbine engine recuperators; demonstrate machining of rotary engine side seal grooves which will increase the reliability and performance of rotary engines for UAV applications; demonstrate a chemical etching technique for high performance flexible airborne antenna substrates by using lay-up processes to reduce touch labor and riveting issues resulting in significantly increased yield and reduced cost per missile; and develop and demonstrate automated Plasma Assisted Chemical Vapor Deposition equipment and manufacturing procedures for the application of nanocrystalline diamond and amorphous carbon coatings for improved optical transmission for infrared devices, improved corrosion resistance, increased surface hardness, reduced friction, and increased wear performance on critical AH-64 and UH-60 helicopter components.</p>				
<p>Title: Base Structural Armor</p> <p>Description: Base Structural Armor consists of advanced armor systems for vehicles, to include ceramics, monolithic metal solutions and hybrid armor solutions. Future efforts in this area are moved to the Ground Systems Domain.</p>		<p>9.887 0</p> <p>Articles:</p>	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
		FY 2011	FY 2012	FY 2013
<i>FY 2011 Accomplishments:</i> Demonstrated and qualified ballistic and blast armors, add on protective modules and limited production of build-to-print armor with automated specification controls. Demonstrated low yield automated assembly of ceramic composites suitable for the fabrication of Ballistic, Hull & Turret, and high yield production of affordable Silicon Carbide (SiC) and Titanium (Ti). Showed production yield for ballistic and blast armors suitable for combat vehicles and add on protective modules with scalable protection requirements. Showed suitable base and add-on armor production facilities and began transition of production protocols to Ground Combat Vehicle and other platform programs of record with these ballistic requirements.				
<i>Title:</i> Ground Systems		4.321	6.563	9.945
		0	0	
<i>Articles:</i>				
<i>Description:</i> This effort funds manufacturing technology advances needed for more affordable components and subsystems for tactical and combat vehicles and weapons systems. Work focuses on addressing challenges in areas such as advanced armor, gun barrel life, insensitive propellants, precision munitions and vehicle power devices.				
<i>FY 2011 Accomplishments:</i> Low Cost Sintered Spinel Transparent Armor Mfg Scale-Up & Protection: demonstrated manufacture processes of spinel armor plates in sizes up to 600 square inch which reduced cost and weight for tactical vehicles. Showed high yield fabrication capability for ceramic composites with reduced weight and improved ballistic protection.				
<i>FY 2012 Plans:</i> Develop aluminum oxide manufacturing processes for sintered Spinel powder applications. Improve transparent armor production using a sintered technique which lowers the cost from \$3k to \$1.2k a square foot. Develop improved manufacturing processes and process controls to lower the cost, weight and material flaws for low rate production of combat vehicle modular armor.				
<i>FY 2013 Plans:</i> Will begin to scale-up manufacturing of high optical clarity Spinel armor plates up to 14? x 14? in size by using a sintered process to address both size and cost; develop low cost production and assembly processes of complex passive kinetic energy armors for combat vehicle systems; exploit forming/forging/joining technologies to enable fabrication of a single under-body design of high performance/strength alloys for a blast resistant lower hull and underbody kits for combat vehicle systems; develop explosive loading processes, requiring no post-machining, inside warhead molding of insensitive munitions and fragment generating sleeves for the EAPS and next generation cluster munitions; develop a manufacturing process to reduce the cost and time associated with applying Ta-10W liners for medium and large caliber Chromium free cannon barrels; and develop initial manufacturing processes for automated production of low cost, high power battery and fuel cell systems for manned and unmanned ground systems.				
<i>Title:</i> Command, Control and Communications Systems		11.080	18.994	20.465

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
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<p style="text-align: right;">Articles:</p> <p>Description: This effort funds manufacturing technology advances needed for more affordable components and subsystems for intelligence, surveillance, reconnaissance and targeting systems, mission command systems, electronic warfare, and Improved Explosive Device detect/defeat systems. Work focuses on addressing challenges in areas such as large format multi-color focal plane arrays, flexible displays, night vision sensors, target detectors, advanced antennas and sensors.</p> <p>FY 2011 Accomplishments: Chip-scale atomic clock: demonstrated vacuum environment manufacturing processes for components package including small rubidium atomic power sources, transducers, electronic circuits, and ballistic housings that support chip scale atomic clock deployment concept. High definition multi-band focal plane array: demonstrated low volume production of array and wafer size of 80 square centimeters, and increased focal plane array substrate diameter and growth yield, improved growth yield. Low light level sensor: completed assembly and initial optimization of automated process station that will increase photo-response and manufacturing capability. Large affordable substrates: increased material growth and pixel fabrication processes to enable affordable large format, multi-color focal plane arrays for high definition infrared sensors that improve situational awareness and target detection. High operating temperature and multi-band focal plane arrays: initiated baseline lots, conducted tradeoffs and selected initial manufacturing process improvements for pilot line transition.</p> <p>FY 2012 Plans: Develop a production capacity for low cost, very large, affordable infrared (IR) focal plane arrays (FPA) using III-V epitaxial materials. Improve HgCdTe pilot lines by increasing the diameters of substrates and reduce material waste, decreasing costs for FPA production. Develop single-layer crystal yield and demonstrate improved polishing processes for more uniformed FPA substrates. Reduce propagate density and decrease surface roughness of FPA substrate and transition to PEO. Manufacture the final components package, demonstrate limited production of chip scale atomic clock power sources and begin transition to Air Force GPS Wing and PEO C3T. Develop full color organic light emitting diodes (OLEDs) from a fully integrated flexible display pilot production line for demonstrations to system integrators. Manufacture processing station for night vision sensor optimization to reduce costs and increase reliability from 1200 to 10000 hours per sensor.</p> <p>FY 2013 Plans: Will optimize the production of the Automated Exhaust Station (AES) to increase yield and demonstrate increased median photocathode response for improved low-light-level sensor performance; demonstrate lot-sized production of 200 and 325 sqcm focal plane array (FPA) wafers, improving yield and small pixel processing/hybridization; manufacture and evaluate sample batches of 640x480, 1920x1280 and 1280x720 pixel FPAs to validate improved yield for affordable high definition, multi-band, multi-color FPAs grown on low-cost substrates for target acquisition and vision systems; demonstrate lot-sized production of 49 sqcm wafers for high-operating temperature FPAs, reducing surface defects and improving contrast ratio for wide area coverage</p>	0	0	
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
of persistent surveillance systems; integrate OLEDs into the Gen II production line for 6.4-12 inch diagonal flexible displays to achieve a resolution of 600x800 super video graphics array (SVGA).				
<p>Title: Low Cost Zinc Sulfide Missile Dome</p> <p>Description: Funding is provided for the following efforts.</p> <p>FY 2011 Accomplishments: Optimized post-deposition treatments and scale-up reactor production process for long range missile domes and transitioned to PM JAGM.</p>		<p>Articles:</p> <p>3.104 0</p>	-	-
<p>Title: Precision Munitions and Armament Systems</p> <p>Description: The Precision Munitions and Armament Systems focus area consists of Advanced Weapon Systems, Fire Control, Logistics, Emerging Technologies and Advanced Energetics and Warheads. Future efforts in this area are moved to the Ground Systems portfolio.</p> <p>FY 2011 Accomplishments: Developed automated processes for the assembly of the Grenade Initiation Module (GIM) that eliminated the manual processes and validates reliability of the automatic process. Demonstrated molybdenum fast jet manufacturing improvements and refined charge processes. Showed reduced cost production processes for solvent less propellant. Improved processing technology using modeling and simulation to enable the production of new generation insensitive munitions formulation. Installed equipment and demonstrated lower production cost (from \$5.00/lb to \$4.25/lb) and improved yield of key ingredients used in explosive formulations for 155mm artillery, 60 mm mortar and Spider munitions. Baselined the current honing process for gun barrels to decrease processing time for new materials to include tantalum-tungsten. Completed baseline analysis and initial test plan that establishes a new production capability for IMX-104 insensitive munition. Demonstrated new application of GaN processes to reduce cost in non-lethal weapons.</p> <p>FY 2012 Plans: Develop a manufacturing process for molding the frag-sleeve into a warhead body for decreased manufacturing time and cost. Develop field assisted spark technology and embedded tungsten fragment molding processes which will reduce production man-hours and lower cost. Develop processes for residence time, temperature, agitation rate and order of feeds to optimize IMX 104 manufacturing process and transition to PM-CAS. Manufacture a crown breach design using a hexavalent chromium free cladding process for large and medium caliber gun barrels. Develop a tantalum tungsten alloy protective bore coating to enable</p>		<p>Articles:</p> <p>8.781 0</p>	9.975 0	6.568

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
higher performance ammunition. Demonstrate M-Charge liner improvements, billet fabrication and warhead case fabrication which reduces costs from \$6K to \$5K per warhead and increases yield to from 75% to 98%. FY 2013 Plans: Develop the manufacturing process to reduce the cost and time associated with applying Ta-10W liners for medium and large caliber Chromium free cannon barrels. Develop explosive loading processes, requiring no post-machining, inside warhead molding of insensitive munitions and fragment generating sleeves for the EAPS and Next Generation Cluster Munitions.				
Title: Laser Ignition	Articles:	1.125 0	-	-
Description: Funding is provided for the following efforts. FY 2011 Accomplishments: Completed transition of production specifications, methodology and brazing process controls. Demonstrated manufacturing protocols for compact crystal assembly and electronics to facilitate full scale production of modular assembly accessed at MRL 8.				
Title: Flexible Display Technology	Articles:	5.093 0	5.153 0	-
Description: Future efforts in this area are moved to the Command, Control, and Communications Systems portfolio. FY 2011 Accomplishments: Demonstrated sensor manufacturing processes and demonstrated flexible electronics integrated with flexible displays for reduced sensor power and improved computational performance. FY 2012 Plans: Develop full color OLEDs from fully integrated GEN II pilot line for demonstrators to system integrators.				
Title: Soldier Systems	Articles:	2.689 0	3.482 0	3.966
Description: This effort funds manufacturing technology advances needed for more affordable components and subsystems for combat feeding, aerial delivery of supplies, expeditionary basing, Soldier-borne sensors, clothing and protective equipment. Work focuses on addressing challenges in areas such as multifunctional fabrics for shelters, uniforms and portage equipment; affordable, non-contaminating packaging for rations; and lightweight materials for body armor. FY 2011 Accomplishments:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2011	FY 2012	FY 2013
<p>Developed pilot processes and control systems to characterize manufacturing performance for conformal body armor utilizing new composite materials. Evaluated processes for non-woven materials and fabricated prototype systems to demonstrate lowered manufacturing cost and reduced energy consumption over existing tent materials. Scaled up and demonstrated improved manufacturing processes of ration header technology that produces no hydrogen emissions, and enhances safety and ease of use by the Soldier. Identified improvements and began process trials on coating and laminate process for shelter fabrics. Investigated manufacturing improvements that would reduce cost and improve quality of CK used in chemical/biological defense systems.</p> <p>FY 2012 Plans: Develop manufacturing processes for nano-pigment and additives and will improve dispersion of the resins to increase performance and reliability of chemical/biological (CB) resistant shelters. Fabricate and demonstrate multiple 600 ft tent structures that meet joint expeditionary collective protection requirements. Develop new generation of scalable and affordable manufacturing processes for lightweight body armor. Demonstrate stacked tooling which reduces costs for bulk manufacturing of organic composite materials and co-curing processes for the X-SAPI body armor system.</p> <p>FY 2013 Plans: Will complete the manufacturing of T6 laminate at 14oz/yd² for Low Rate Initial Production of shelter fabric; complete and demonstrate the low rate initial production (LRIP) process for lightweight x-SAPI plates for a flexible hybridized body armor solution; and demonstrate low-cost rapid prototyping and injection molding techniques for protective mask systems.</p>				
<p>Title: Advanced Manufacturing Initiatives</p> <p>Description: This effort funds manufacturing technology advances needed for affordable model based manufacturing, network centric manufacturing data environments, collaborative manufacturing modeling and simulation, and advanced manufacturing technologies. Work focuses on addressing challenges in areas such as 3D technical data packages for armor systems; providing digital manufacturing capabilities to depots and laboratories, processes and models for data transfer and prototype production; and advanced laser manufacturing techniques for repairing components.</p> <p>FY 2011 Accomplishments: Identified key areas for a DOD-wide military standard for annotating technical data with manufacturing information in order to replace 2D drawings with 3D data packages during design, test, manufacturing and sustainment phases of a weapon system.</p> <p>FY 2012 Plans:</p>		0.626 0	3.167 0	5.852
		Articles:		

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Develop fully annotated 3D digital technical data packages (TDP) for vehicle passive and protective armor systems that can be used in design and manufacturing production lines. Support the digital capabilities to depots and labs to facilitate integration, refit and rebuild operations. Develop advanced manufacturing environment. <i>FY 2013 Plans:</i> Will integrate depot planning and rebuild operations within a 3Dimensional TDP; establish interactive S1000D publications (International specification for technical publications utilizing a Common Source Database), manuals and work instructions; and identify Type 1 NSNs to link with the 3D TDPs; and develop processes and models for demonstrating data transfer and prototype production within a collaborative environment.			
Accomplishments/Planned Programs Subtotals	56.816	59.297	59.908

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

N/A

D. Acquisition Strategy

Not applicable for this item.

E. Performance Metrics

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