Department of Defense
Fiscal Year (FY) 2017 President's Budget Submission

February 2016

Army

Justification Book of

Research, Development, Test & Evaluation, Army

RDT&E − Volume II, Budget Activity 5

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY

APPROPRIATION LANGUAGE

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, $7,615,921,000.00 to remain available for obligation until September 30, 2018.

The following Justification Books were prepared at a cost of $1,209,553: Aircraft (ACFT), Missile (MSLS), Weapons & Tracked Combat Vehicles (WTCV), Ammunition (AMMO), Other Procurement Army (OPA) 1 - Tactical & Support Vehicles, Other Procurement Army (OPA) 2 – Communications & Electronics, Other Procurement Army (OPA) 3 & 4 - Other Support Equipment & Spares, Research, Development, Test and Evaluation (RDTE) for: Budget Activity 1, Budget Activity 2, Budget Activity 3, Budget Activity 4, Budget Activity 5A, Budget Activity 5B, Budget Activity 6, and Budget Activity 7.

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FY 2017 RDT&E, ARMY
PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

Introduction and Explanation of Contents

1. **General.** The purpose of this document is to provide summary information concerning the Research, Development, Test and Evaluation, Army program. The descriptive summaries are comprised of R-2 (Army RDT&E Budget Item Justification – program element level), R-2A (Army RDT&E Budget Item Justification – project level), R-3 (Army RDT&E Cost Analysis), R-4 (Schedule Profile Detail) and R-5 (Termination Liability Funding for MDAPs) Exhibits, which provide narrative information on all RDT&E program elements and projects through FY 2017.

2. **Relationship of the FY 2017 Budget Submitted to Congress to the FY 2016 Budget Submitted to Congress.** This paragraph provides a list of program elements/projects that are major new starts, restructures, developmental transitions, and terminated programs. Explanations for these changes can be found in the narrative sections of the Program Element R-2A Exhibits.

A. New Start Programs:

PE/Project	PE Title	Project Title
345251/FA8	Cyberspace Operations Forces and Force Support	Cyberspace Operations Forces and Force Support
363326/FA9	Security Initiatives	Security Initiatives
373150/EA5	Army Global Command & Control System	Strategic and Joint Mission Command
643308/EB7	Army Missile Defense Systems Integration	Army Space System Enhancement/Integration
643619/606	Close Combat Systems Adv Dev	Cntrmn/Barrier Adv Dev
643801/B47	Aviation Advanced Development	Future Vertical Lift Medium
654270/ET7	EW Development	Radio Frequency Interference Mitigation
654270/DX6	EW Development	Radio Frequency Interference Mitigation
654622/659	Family of Heavy Tactical Vehicles	Family of Hvy Tac Veh
654622/E40	Light Tactical Wheeled Vehicle	LTV Prototype
654645/EV8	Armored Systems Modernization on End Dev	Mobile Protected Firepower
654818/EW3	Army Tac Comm & Cont Hardware & Software	Unit Task Reorganization (UTR) Development
654822/EV4	General Fund Enterprise Business System (GFEBS)	General Fund Enterprise Business System Inc 2
664759/FA4	Major Test & Evaluation Investment	Warrior Injury Assessment Manikin (WIAMan)
675024/FB1	Anti-Tamper Technology Support	Anti-Tamper Technology Support
654818/EW3	Army Tac Comm &Cont Hardware & Software	Unit Task Reorganization (UTR) Development

B. Program Element/Project Restructures:

Old PE/Project	New Project Title	New PE/Project
0205778/EG2	Long Range Precision Fires (LRPF)	0607134/ES1
0303140/501	Army Key Mgmt System	0303140/DV4
0305204/D10	MQ-1C Gray Eagle	0203744/EB6
0601102/S14	Basic Resch in Clinical & Rehabilitative Med	0601102/ET6
0602787/874	Appl Resch in Clinical and Rehabilitative Med	0602787/ET4
0603002/840	Medical Advance Technology	0603002/ET5
0603827/S53	Personnel Airdrop System Development	0603827/ET8
0604120/ED5	Mounted	0604120/EH8
0604120/ED5	Dismounted	0604120/EJ2
0604280/DZ5	Manpack Radio	0605042/FA1
0604280/DZ5	Rifleman Radio	0605042/FA2
0604622/659	TWV Protection Kits	0604622/VR5
0604759/984	Range Radar Replacement Program (RRRP)	0604759/EY9
0604798/DY4	Network Integration Support	0604798/DY3
0604798/DY6	Brigade and Platform Integration Support	0604798/DY3
0604818/S75	Tactical Network Operations and Management	0604818/EK9
0604827/S75	Ground Soldier Ensemble	0604818/EQ8
0605031/EF5	Waveforms	0605031/EX6
0605457/DU4	FAAD C2 ED	0604741/126

C. Developmental Transitions:

Old PE/Project	New Project Title	New PE/Project
0204502/EF2	Integ/GrdSecSurv RespC	0605029/EQ2
0204502/EF2	Grnd-Based Opnl Surv Sys Expend (GBOSS-E)	0605033/EQ3
0303140/491	Defensive Cyber Operations	0605041/EV5
0603639/EC2	Adv Armor-Piercing (ADVAP)	0604802/EP5
0603639/EL8	Lightweight Cartridge Case for Small Caliber Ammo	0604802/EP6
0603639/656	120mm Cartridge (Advanced Multipurpose AMP)	0604802/ED7
0603782/372	Warfighter Information Network	0605535/EE8
0603827S54	Crew Served Weapons Engineering Development	0604601/EW4
0603850/472	Integrated Broadcast System	0305179/EF4
0605626/AC5	Enhanced Medium Alt Recon Surv Sys	0305206/EH3
0605898/M65	ATEC Joint	0605712/001
0606801/M46	AMCOM Cmd/Ctr Spt	0602705/H94
0606801/M46	AMCOM Cmd/Ctr Spt	0605024/FB1
0607865/DV8	Lower Tier Missile Defense (LTAMD) Capability	0604114/EX2
0604319/DU3	IFPC2	0605052/EY7

D. Program Terminations:

PE Title	PE/Project
Aircrew Integrated Sys Ad	0603827/152
PAC-3/MSE Missile	0605456/PA3

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

Department of Defense
FY 2017 President's Budget
Exhibit R-1 FY 2017 President's Budget
Total Obligational Authority
(Dollars in Thousands)

14 Jan 2016

Appropriation	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Research, Development, Test & Eval, Army	6,744,134	7,562,170	1,500	7,563,670	7,515,399	100,522	7,615,921
Total Research, Development, Test & Evaluation	6,744,134	7,562,170	1,500	7,563,670	7,515,399	100,522	7,615,921

R-1C1: FY 2017 President's Budget (Published Version of PB Position), as of January 14, 2016 at 10:17:52

Department of Defense
FY 2017 President's Budget
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14 Jan 2016

Summary Recap of Budget Activities	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Basic Research	447,868	469,079		469,079	428,943		428,943
Applied Research	964,085	1,092,885		1,092,885	907,574		907,574
Advanced Technology Development	1,089,087	1,127,304		1,127,304	930,065		930,065
Advanced Component Development & Prototypes	298,467	506,123	1,500	507,623	550,635	9,375	560,010
System Development & Demonstration	1,604,756	2,085,147		2,085,147	2,265,094	84,043	2,349,137
RDT&E Management Support	1,166,015	1,070,581		1,070,581	1,136,134		1,136,134
Operational Systems Development	1,173,856	1,211,051		1,211,051	1,296,954	7,104	1,304,058
Total Research, Development, Test & Evaluation	6,744,134	7,562,170	1,500	7,563,670	7,515,399	100,522	7,615,921
Summary Recap of FYDP Programs							
General Purpose Forces	705,451	779,716		779,716	618,038		618,038
Intelligence and Communications	162,187	171,857		171,857	238,711	7,104	245,815
Research and Development	5,788,542	6,545,639	1,500	6,547,139	6,591,738	93,418	6,685,156
Central Supply and Maintenance	73,419	60,422		60,422	62,287		62,287
Administration and Associated Activities	233						
Classified Programs	14,302	4,536		4,536	4,625		4,625
Total Research, Development, Test & Evaluation	6,744,134	7,562,170	1,500	7,563,670	7,515,399	100,522	7,615,921

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Summary Recap of FYDP Programs							
General Purpose Forces	705,451	779,716		779,716	618,038		618,038
Intelligence and Communications	162,187	171,857		171,857	238,711	7,104	245,815
Research and Development	5,788,542	6,545,639	1,500	6,547,139	6,591,738	93,418	6,685,156
Central Supply and Maintenance	73,419	60,422		60,422	62,287		62,287
Administration and Associated Activities	233						
Classified Programs	14,302	4,536		4,536	4,625		4,625
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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
1	0601101A	In-House Laboratory Independent Research	01	13,125	13,018		13,018	12,381		12,381	U
2	0601102A	Defense Research Sciences	01	249,855	279,118		279,118	253,116		253,116	U
3	0601103A	University Research Initiatives	01	79,122	72,603		72,603	69,166		69,166	U
4	0601104A	University and Industry Research Centers	01	105,766	104,340		104,340	94,280		94,280	U
	Basic Research			447,868	469,079		469,079	428,943		428,943	
5	0602105A	Materials Technology	02	45,563	68,314		68,314	31,533		31,533	U
6	0602120A	Sensors and Electronic Survivability	02	45,792	58,374		58,374	36,109		36,109	U
7	0602122A	TRACTOR HIP	02	16,358	6,879		6,879	6,995		6,995	U
8	0602211A	Aviation Technology	02	62,046	56,884		56,884	65,914		65,914	U
9	0602270A	Electronic Warfare Technology	02	19,333	19,243		19,243	25,466		25,466	U
10	0602303A	Missile Technology	02	61,144	53,553		53,553	44,313		44,313	U
11	0602307A	Advanced Weapons Technology	02	37,464	38,028		38,028	28,803		28,803	U
12	0602308A	Advanced Concepts and Simulation	02	26,505	27,862		27,862	27,688		27,688	U
13	0602601A	Combat Vehicle and Automotive Technology	02	71,811	98,439		98,439	67,959		67,959	U
14	0602618A	Ballistics Technology	02	83,610	117,801		117,801	85,436		85,436	U
15	0602622A	Chemical, Smoke and Equipment Defeating Technology	02	3,865	3,866		3,866	3,923		3,923	U
16	0602623A	Joint Service Small Arms Program	02	6,633	5,487		5,487	5,545		5,545	U
17	0602624A	Weapons and Munitions Technology	02	62,131	83,340		83,340	53,581		53,581	U
18	0602705A	Electronics and Electronic Devices	02	72,442	64,301		64,301	56,322		56,322	U

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19	0602709A	Night Vision Technology	02	44,694	38,807		38,807	36,079		36,079	U
20	0602712A	Countermine Systems	02	28,597	36,568		36,568	26,497		26,497	U
21	0602716A	Human Factors Engineering Technology	02	23,434	23,681		23,681	23,671		23,671	U
22	0602720A	Environmental Quality Technology	02	15,288	20,850		20,850	22,151		22,151	U
23	0602782A	Command, Control, Communications Technology	02	33,117	36,160		36,160	37,803		37,803	U
24	0602783A	Computer and Software Technology	02	10,514	12,656		12,656	13,811		13,811	U
25	0602784A	Military Engineering Technology	02	66,582	80,909		80,909	67,416		67,416	U
26	0602785A	Manpower/Personnel/Training Technology	02	21,280	24,735		24,735	26,045		26,045	U
27	0602786A	Warfighter Technology	02	31,597	39,295		39,295	37,403		37,403	U
28	0602787A	Medical Technology	02	74,285	76,853		76,853	77,111		77,111	U
		Applied Research		964,085	1,092,885		1,092,885	907,574		907,574	
29	0603001A	Warfighter Advanced Technology	03	75,833	55,973		55,973	38,831		38,831	U
30	0603002A	Medical Advanced Technology	03	104,997	108,584		108,584	68,365		68,365	U
31	0603003A	Aviation Advanced Technology	03	99,762	103,136		103,136	94,280		94,280	U
32	0603004A	Weapons and Munitions Advanced Technology	03	72,176	82,663		82,663	68,714		68,714	U
33	0603005A	Combat Vehicle and Automotive Advanced Technology	03	143,606	135,571		135,571	122,132		122,132	U
34	0603006A	Space Application Advanced Technology	03	6,664	5,554		5,554	3,904		3,904	U
35	0603007A	Manpower, Personnel and Training Advanced Technology	03	11,677	12,636		12,636	14,417		14,417	U

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36	0603008A	Electronic Warfare Advanced Technology	03	43,416							U
37	0603009A	TRACTOR HIKE	03	7,492	7,502		7,502	8,074		8,074	U
38	0603015A	Next Generation Training & Simulation Systems	03	16,103	17,425		17,425	18,969		18,969	U
39	0603020A	TRACTOR ROSE	03	14,483	11,912		11,912	11,910		11,910	U
40	0603125A	Combating Terrorism - Technology Development	03	23,334	33,520		33,520	27,686		27,686	U
41	0603130A	TRACTOR NAIL	03	3,440	2,381		2,381	2,340		2,340	U
42	0603131A	TRACTOR EGGS	03	2,406	2,431		2,431	2,470		2,470	U
43	0603270A	Electronic Warfare Technology	03	27,238	32,874		32,874	27,893		27,893	U
44	0603313A	Missile and Rocket Advanced Technology	03	78,302	104,449		104,449	52,190		52,190	U
45	0603322A	TRACTOR CAGE	03	11,105	10,999		10,999	11,107		11,107	U
46	0603461A	High Performance Computing Modernization Program	03	214,614	222,159		222,159	177,190		177,190	U
47	0603606A	Landmine Warfare and Barrier Advanced Technology	03	12,795	13,966		13,966	17,451		17,451	U
48	0603607A	Joint Service Small Arms Program	03	7,055	5,105		5,105	5,839		5,839	U
49	0603710A	Night Vision Advanced Technology	03	46,056	40,929		40,929	44,468		44,468	U
50	0603728A	Environmental Quality Technology Demonstrations	03	11,311	14,727		14,727	11,137		11,137	U
51	0603734A	Military Engineering Advanced Technology	03	17,124	26,845		26,845	20,684		20,684	U
52	0603772A	Advanced Tactical Computer Science and Sensor Technology	03	38,098	38,147		38,147	44,239		44,239	U

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53	0603794A	C3 Advanced Technology	03		37,816		37,816	35,775		35,775	U
		Advanced Technology Development		1,089,087	1,127,304		1,127,304	930,065		930,065	
54	0603305A	Army Missle Defense Systems Integration	04	25,672	29,347		29,347	9,433		9,433	U
55	0603308A	Army Space Systems Integration	04	13,804	25,061		25,061	23,056	9,375	32,431	U
56	0603619A	Landmine Warfare and Barrier - Adv Dev	04		45,757		45,757	72,117		72,117	U
57	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	04		13,426		13,426	28,244		28,244	U
58	0603639A	Tank and Medium Caliber Ammunition	04	25,317	46,749		46,749	40,096		40,096	U
59	0603747A	Soldier Support and Survivability	04	8,633	2,801	1,500	4,301	10,506		10,506	U
60	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	9,255	13,472		13,472	15,730		15,730	U
61	0603774A	Night Vision Systems Advanced Development	04	3,521	7,292		7,292	10,321		10,321	U
62	0603779A	Environmental Quality Technology - Dem/Val	04	7,529	8,813		8,813	7,785		7,785	U
63	0603790A	NATO Research and Development	04	2,839	6,075		6,075	2,300		2,300	U
64	0603801A	Aviation - Adv Dev	04					10,014		10,014	U
65	0603804A	Logistics and Engineer Equipment - Adv Dev	04	13,188	21,233		21,233	20,834		20,834	U
66	0603807A	Medical Systems - Adv Dev	04	22,825	31,962		31,962	33,503		33,503	U
67	0603827A	Soldier Systems - Advanced Development	04	9,194	22,994		22,994	31,120		31,120	U
68	0604100A	Analysis Of Alternatives	04	9,685	9,805		9,805	6,608		6,608	U

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69	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04					35,132		35,132	U
70	0604115A	Technology Maturation Initiatives	04	43,083	35,917		35,917	70,047		70,047	U
71	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	11,447	30,058		30,058	83,279		83,279	U
72	0604319A	Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)	04	92,475	155,361		155,361				U
73	0305251A	Cyberspace Operations Forces and Force Support	04					40,510		40,510	U
		Advanced Component Development & Prototypes		298,467	506,123	1,500	507,623	550,635	9,375	560,010	
74	0604201A	Aircraft Avionics	05	39,583	18,639		18,639	83,248		83,248	U
75	0604270A	Electronic Warfare Development	05	5,792	18,843		18,843	34,642		34,642	U
76	0604280A	Joint Tactical Radio	05	9,454	4,546		4,546				U
77	0604290A	Mid-tier Networking Vehicular Radio (MNVR)	05	9,355	8,763		8,763	12,172		12,172	U
78	0604321A	All Source Analysis System	05	5,532	4,309		4,309	3,958		3,958	U
79	0604328A	TRACTOR CAGE	05	19,929	15,138		15,138	12,525		12,525	U
80	0604601A	Infantry Support Weapons	05	36,826	89,661		89,661	66,943		66,943	U
81	0604604A	Medium Tactical Vehicles	05	202							U
82	0604611A	JAVELIN	05	4,006	3,945		3,945	20,011		20,011	U
83	0604622A	Family of Heavy Tactical Vehicles	05	12,768				11,429		11,429	U
84	0604633A	Air Traffic Control	05	17,066	10,076		10,076	3,421		3,421	U
85	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05	2,663	15,374		15,374	39,282		39,282	U

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86	0604642A	Light Tactical Wheeled Vehicles	05					494		494	U
87	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05					9,678		9,678	U
88	0604710A	Night Vision Systems - Eng Dev	05	58,997	67,582		67,582	84,519		84,519	U
89	0604713A	Combat Feeding, Clothing, and Equipment	05	2,983	1,763		1,763	2,054		2,054	U
90	0604715A	Non-System Training Devices - Eng Dev	05	8,775	27,155		27,155	30,774	33	30,807	U
91	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	15,294	34,569		34,569	53,332		53,332	U
92	0604742A	Constructive Simulation Systems Development	05	4,394	23,364		23,364	17,887		17,887	U
93	0604746A	Automatic Test Equipment Development	05	10,685	8,960		8,960	8,813		8,813	U
94	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	9,699	9,138		9,138	10,487		10,487	U
95	0604780A	Combined Arms Tactical Trainer (CATT) Core	05	33,422	21,622		21,622	15,068		15,068	U
96	0604798A	Brigade Analysis, Integration and Evaluation	05	82,957	99,242		99,242	89,716		89,716	U
97	0604802A	Weapons and Munitions - Eng Dev	05	17,312	21,379		21,379	80,365		80,365	U
98	0604804A	Logistics and Engineer Equipment - Eng Dev	05	23,652	46,039		46,039	75,098		75,098	U
99	0604805A	Command, Control, Communications Systems - Eng Dev	05	5,116	2,683		2,683	4,245		4,245	U
100	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	29,441	45,412		45,412	41,124		41,124	U
101	0604808A	Landmine Warfare/Barrier - Eng Dev	05	53,579	55,215		55,215	39,630		39,630	U

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Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
102	0604818A	Army Tactical Command & Control Hardware & Software	05	29,690	131,639		131,639	205,590		205,590	U
103	0604820A	Radar Development	05	5,022	12,309		12,309	15,983		15,983	U
104	0604822A	General Fund Enterprise Business System (GFEBS)	05	5,500	21,155		21,155	6,805		6,805	U
105	0604823A	Firefinder	05	22,587	2,967		2,967	9,235		9,235	U
106	0604827A	Soldier Systems - Warrior Dem/Val	05	5,942	18,776		18,776	12,393		12,393	U
107	0604854A	Artillery Systems - EMD	05	1,838	1,953		1,953	1,756		1,756	U
108	0605013A	Information Technology Development	05	64,982	60,358		60,358	74,236		74,236	U
109	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	62,831	121,011		121,011	155,584		155,584	U
110	0605028A	Armored Multi-Purpose Vehicle (AMPV)	05	88,797	226,210		226,210	184,221		184,221	U
111	0605029A	Integrated Ground Security Surveillance Response Capability (IGSSR-C)	05					4,980		4,980	U
112	0605030A	Joint Tactical Network Center (JTNC)	05	8,615	13,357		13,357	15,041		15,041	U
113	0605031A	Joint Tactical Network (JTN)	05	17,305	18,055		18,055	16,014		16,014	U
114	0605032A	TRACTOR TIRE	05		5,677		5,677	27,254		27,254	U
115	0605033A	Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)	05					5,032		5,032	U
116	0605034A	Tactical Security System (TSS)	05					2,904		2,904	U
117	0605035A	Common Infrared Countermeasures (CIRCM)	05	169,196	101,570		101,570	96,977	10,900	107,877	U
118	0605036A	Combating Weapons of Mass Destruction (CWMD)	05					2,089		2,089	U

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119	0605041A	Defensive CYBER Tool Development	05					33,836		33,836	U
120	0605042A	Tactical Network Radio Systems (Low-Tier)	05					18,824		18,824	U
121	0605047A	Contract Writing System	05					20,663		20,663	U
122	0605051A	Aircraft Survivability Development	05		78,112		78,112	41,133	73,110	114,243	U
123	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05					83,995		83,995	U
124	0605350A	WIN-T Increment 3 - Full Networking	05	108,851	33,515		33,515				U
125	0605380A	AMF Joint Tactical Radio System (JTRS)	05	6,616	11,455		11,455	5,028		5,028	U
126	0605450A	Joint Air-to-Ground Missile (JAGM)	05	80,585	83,054		83,054	42,972		42,972	U
127	0605456A	PAC-3/MSE Missile	05	33,709	2,272		2,272				U
128	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	147,250	222,075		222,075	252,811		252,811	U
129	0605625A	Manned Ground Vehicle	05	47,265	39,247		39,247				U
130	0605626A	Aerial Common Sensor	05	20,328	2		2				U
131	0605766A	National Capabilities Integration (MIP)	05	18,254	10,599		10,599	4,955		4,955	U
132	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	43,302	32,486		32,486	11,530		11,530	U
133	0605830A	Aviation Ground Support Equipment	05	9,655	13,880		13,880	2,142		2,142	U
134	0210609A	Paladin Integrated Management (PIM)	05	77,210	152,288		152,288	41,498		41,498	U
135	0303032A	TROJAN - RH12	05	983	5,022		5,022	4,273		4,273	U

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136	0304270A	Electronic Warfare Development	05	8,961	12,686		12,686	14,425		14,425	U
		System Development & Demonstration		1,604,756	2,085,147		2,085,147	2,265,094	84,043	2,349,137	
137	0604256A	Threat Simulator Development	06	21,691	27,535		27,535	25,675		25,675	U
138	0604258A	Target Systems Development	06	9,778	16,684		16,684	19,122		19,122	U
139	0604759A	Major T&E Investment	06	54,281	66,580		66,580	84,777		84,777	U
140	0605103A	Rand Arroyo Center	06	19,817	19,382		19,382	20,658		20,658	U
141	0605301A	Army Kwajalein Atoll	06	169,699	203,905		203,905	236,648		236,648	U
142	0605326A	Concepts Experimentation Program	06	18,757	19,430		19,430	25,596		25,596	U
143	0605502A	Small Business Innovative Research	06	172,658							U
144	0605601A	Army Test Ranges and Facilities	06	271,377	279,896		279,896	293,748		293,748	U
145	0605602A	Army Technical Test Instrumentation and Targets	06	43,961	51,550		51,550	52,404		52,404	U
146	0605604A	Survivability/Lethality Analysis	06	33,210	33,246		33,246	38,571		38,571	U
147	0605606A	Aircraft Certification	06	4,667	4,760		4,760	4,665		4,665	U
148	0605702A	Meteorological Support to RDT&E Activities	06	6,289	8,303		8,303	6,925		6,925	U
149	0605706A	Materiel Systems Analysis	06	20,578	20,403		20,403	21,677		21,677	U
150	0605709A	Exploitation of Foreign Items	06	8,418	10,396		10,396	12,415		12,415	U
151	0605712A	Support of Operational Testing	06	48,953	49,337		49,337	49,684		49,684	U
152	0605716A	Army Evaluation Center	06	54,468	52,694		52,694	55,905		55,905	U
153	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	1,081	938		938	7,959		7,959	U
154	0605801A	Programwide Activities	06	63,687	60,319		60,319	51,822		51,822	U

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155	0605803A	Technical Information Activities	06	28,781	28,478		28,478	33,323		33,323	U
156	0605805A	Munitions Standardization, Effectiveness and Safety	06	62,168	64,604		64,604	40,545		40,545	U
157	0605857A	Environmental Quality Technology Mgmt Support	06	2,512	3,186		3,186	2,130		2,130	U
158	0605898A	Management HQ - R&D	06	48,951	48,955		48,955	49,885		49,885	U
159	0303260A	Defense Military Deception Initiative	06					2,000		2,000	U
160	0909999A	Financing for Cancelled Account Adjustments	06	233							U
	RDT&E	Management Support		1,166,015	1,070,581		1,070,581	1,136,134		1,136,134	
161	0603778A	MLRS Product Improvement Program	07	17,852	18,397		18,397	9,663		9,663	U
162	0603813A	TRACTOR PULL	07		9,461		9,461	3,960		3,960	U
163	0605024A	Anti-Tamper Technology Support	07					3,638		3,638	U
164	0607131A	Weapons and Munitions Product Improvement Programs	07		4,945		4,945	14,517		14,517	U
165	0607133A	TRACTOR SMOKE	07		7,569		7,569	4,479		4,479	U
166	0607134A	Long Range Precision Fires (LRPF)	07					39,275		39,275	U
167	0607135A	Apache Product Improvement Program	07	86,099	65,562		65,562	66,441		66,441	U
168	0607136A	Blackhawk Product Improvement Program	07	48,406	66,653		66,653	46,765		46,765	U
169	0607137A	Chinook Product Improvement Program	07	35,424	32,407		32,407	91,848		91,848	U
170	0607138A	Fixed Wing Product Improvement Program	07	819	1,151		1,151	796		796	U
171	0607139A	Improved Turbine Engine Program	07	49,328	51,164		51,164	126,105		126,105	U

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172	0607140A	Emerging Technologies from NIE	07	4,916	2,481		2,481	2,369		2,369	U
173	0607141A	Logistics Automation	07	3,513	1,673		1,673	4,563		4,563	U
174	0607665A	Family of Biometrics	07	1,332	13,237		13,237	12,098		12,098	U
175	0607865A	Patriot Product Improvement	07	57,962	89,816		89,816	49,482		49,482	U
176	0202429A	Aerostat Joint Project - COCOM Exercise	07	43,248	10,565		10,565	45,482		45,482	U
177	0203726A	Adv Field Artillery Tactical Data System	07	1,224							U
178	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	33,996	35,719		35,719	30,455		30,455	U
179	0203735A	Combat Vehicle Improvement Programs	07	297,423	354,667		354,667	316,857		316,857	U
180	0203740A	Maneuver Control System	07	43,453	15,408		15,408	4,031		4,031	U
181	0203744A	Aircraft Modifications/Product Improvement Programs	07	40				35,793		35,793	U
182	0203752A	Aircraft Engine Component Improvement Program	07	372	364		364	259		259	U
183	0203758A	Digitization	07	5,765	4,361		4,361	6,483		6,483	U
184	0203801A	Missile/Air Defense Product Improvement Program	07	4,917	3,154		3,154	5,122		5,122	U
185	0203802A	Other Missile Product Improvement Programs	07	40,468	35,951		35,951	7,491		7,491	U
186	0203808A	TRACTOR CARD	07	19,347	34,686		34,686	20,333		20,333	U
187	0205402A	Integrated Base Defense - Operational System Dev	07	4,196	10,750		10,750				U
188	0205410A	Materials Handling Equipment	07	802	402		402	124		124	U

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Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
189	0205412A	Environmental Quality Technology - Operational System Dev	07	270							U
190	0205456A	Lower Tier Air and Missile Defense (AMD) System	07	78,720	64,159		64,159	69,417		69,417	U
191	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	43,791	36,727		36,727	22,044		22,044	U
192	0208053A	Joint Tactical Ground System	07	10,209	20,515		20,515	12,649		12,649	U
194	0303028A	Security and Intelligence Activities	07	12,518	6,998		6,998	11,619		11,619	U
195	0303140A	Information Systems Security Program	07	13,627	31,154		31,154	38,280		38,280	U
196	0303141A	Global Combat Support System	07	5,225	21,574		21,574	27,223		27,223	U
197	0303142A	SATCOM Ground Environment (SPACE)	07	9,978	9,355		9,355	18,815		18,815	U
198	0303150A	WWMCCS/Global Command and Control System	07	2,493	7,034		7,034	4,718		4,718	U
201	0305179A	Integrated Broadcast Service (IBS)	07		750		750				U
202	0305204A	Tactical Unmanned Aerial Vehicles	07	20,290	13,225		13,225	8,218		8,218	U
203	0305206A	Airborne Reconnaissance Systems	07		22,870		22,870	11,799		11,799	U
204	0305208A	Distributed Common Ground/Surface Systems	07	20,155	25,592		25,592	32,284		32,284	U
205	0305219A	MQ-1C Gray Eagle UAS	07	46,472				13,470		13,470	U
206	0305232A	RQ-11 UAV	07					1,613		1,613	U
207	0305233A	RQ-7 UAV	07	16,389	11,797		11,797	4,597		4,597	U
208	0307665A	Biometrics Enabled Intelligence	07	1,973					7,104	7,104	U
209	0310349A	Win-T Increment 2 - Initial Networking	07	3,123	3,800		3,800	4,867		4,867	U

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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
210	0708045A	End Item Industrial Preparedness Activities	07	73,419	60,422		60,422	62,287		62,287	U
9999	9999999999	Classified Programs		14,302	4,536		4,536	4,625		4,625	U
		Operational Systems Development		1,173,856	1,211,051		1,211,051	1,296,954	7,104	1,304,058	
Total Research, Development, Test & Eval, Army				6,744,134	7,562,170	1,500	7,563,670	7,515,399	100,522	7,615,921	

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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	23.652	46.039	75.098	-	75.098	81.745	41.166	39.945	34.611	Continuing	Continuing
194: *Engine Driven Gen Ed*	-	4.309	8.822	13.676	-	13.676	15.295	5.458	7.110	0.497	Continuing	Continuing
EC9: *Contingency Basing Infrastructure*	-	2.447	2.541	3.609	-	3.609	3.793	3.805	3.827	3.877	0.000	23.899
EJ9: *Manuever Support Vessel - Light (MSV-L)*	-	0.000	10.066	18.338	-	18.338	14.522	0.000	0.000	0.000	0.000	42.926
H01: *Combat Engineer Eq Ed*	-	0.998	0.823	2.280	-	2.280	3.736	3.420	2.828	4.825	Continuing	Continuing
H02: *Tactical Bridging - Engineering Development*	-	6.722	9.796	14.245	-	14.245	24.283	7.158	5.775	2.327	Continuing	Continuing
H14: *Materials Handling Equipment - Ed*	-	0.273	0.628	0.960	-	0.960	0.560	0.450	0.469	0.471	Continuing	Continuing
L39: *Field Sustainment Support Ed*	-	1.623	1.849	3.712	-	3.712	3.028	2.128	2.907	2.985	Continuing	Continuing
L41: *Water And Petroleum Distribution - Ed*	-	3.071	3.361	8.363	-	8.363	5.065	9.336	9.436	9.507	Continuing	Continuing
L43: *ENGINEER SUPPORT EQUIPMENT - ED*	-	0.553	0.870	2.445	-	2.445	3.642	1.586	0.894	3.242	Continuing	Continuing
L46: *Maintenance Support Equipment*	-	0.964	1.064	1.886	-	1.886	1.881	1.722	1.767	1.815	Continuing	Continuing
L47: *Improved Environmental Control Units Ed*	-	0.000	0.756	1.259	-	1.259	1.778	3.685	2.027	2.081	Continuing	Continuing
VR7: *Combat Service Support Systems*	-	2.692	5.463	4.325	-	4.325	4.162	2.418	2.905	2.984	Continuing	Continuing

Note

The FY 2017 funding request was increased $33.400 million to account for the increases in the following programs: 194 Engine Driven Gen Ed, EJ9 Maneuver Support Vessel, H02 Tactical Bridging - Eng Dev., L41 Water and Petroleum Distribution and VR7 Combat Service Support Systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604804A *I Logistics and Engineer Equipment - Eng Dev*

A. Mission Description and Budget Item Justification

This Program Element (PE) provides system development and demonstration for various projects. This PE includes the development of military tactical bridging, material handling equipment, construction equipment, engineer support equipment, soldier support equipment (to include shelter systems, environmental control, field service equipment, camouflage systems and aerial delivery equipment), water purification equipment, petroleum distribution equipment, mobile electric power and water craft.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	24.566	48.339	59.983	-	59.983
Current President's Budget	23.652	46.039	75.098	-	75.098
Total Adjustments	-0.914	-2.300	15.115	-	15.115
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.300			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.914	-			
• Adjustments to Budget Years	-	-	15.115	-	15.115

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) 194 / *Engine Driven Gen Ed*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
194: *Engine Driven Gen Ed*	-	4.309	8.822	13.676	-	13.676	15.295	5.458	7.110	0.497	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Management and Distribution Control (MDC), previously named Improved Power Distribution Illumination Systems Electrical (IPDISE), funds in this project line are a realignment of funds from 0603804A Project G-11, due to the program transitioning into the EMD Phase.

A. Mission Description and Budget Item Justification

This project supports the Tactical Electric Power (TEP) program which is established to develop a Modernized, Standard Family of Mobile Electric Power Generating Sources (MEPGS) for all Services throughout the Department of Defense. Building on the device/component evaluations conducted in PE 0603804A project G11, this project supports the system development and demonstration of a series of innovative mobile electric power sources that are essential to the development and eventual fielding of modernized MEPGS from 0.5 kilowatt (kW) to 840kW. These sources will ensure compliance with federally mandated environmental statutes and significantly lower noise and thermal signatures (thereby improving battlefield survivability), improve fuel and electrical efficiency, reduce weight, enhance portability, improve reliability, availability and maintainability, and reduce operational and support costs. FY16 funds will prepare the Management and Distribution Control (MDC)/ Microgrids performance specification and continue the Large Advanced Mobile Power Sources (LAMPS) EMD phase. FY16 funding will also support the Small Tactical Electric Power (STEP) EMD phase. Funding in FY17 will close out the LAMPS EMD phase, continue MDC Power Distribution Unit (PDU) EMD phase and begin the STEP EMD phase.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Large Advanced Mobile Power Sources (LAMPS) and Management and Distribution Control (MDC)/ Microgrids Engineering & Manufacturing Development (EMD) Phase. ***Description:*** Prepare LAMPS and MDC/Microgrids performance specification and begin EMD Phase ***FY 2015 Accomplishments:*** Continued EMD Phase of LAMPS and MDC/Microgrids. ***FY 2016 Plans:*** Continue EMD Phase of LAMPS. Continue EMD Phase of MDC PDU (microgrid). ***FY 2017 Base Plans:*** Close out EMD Phase of LAMPS. Continue EMD Phase of MDC PDU (microgrid)	4.309	8.822	4.896	-	4.896
Title: Small Tactical Electric Power (STEP) Engineering & Manufacturing Development (EMD) Phase	-	-	8.780	-	8.780

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Begin EMD Phase for the STEP program. ***FY 2017 Base Plans:*** Begin EMD for the STEP program. STEP EMD will be separated into 2 phases: Phase I is System Development with prototype testing with multiple vendors, Phase II will down select to a single vendor for System Demonstration and logistical development.					
Accomplishments/Planned Programs Subtotals	4.309	8.822	13.676	-	13.676

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 643804.G11: *Logistics and Engineer Equipment - Adv Dev G11*	3.874	8.857	6.166	-	6.166	3.895	8.081	8.246	7.726	Continuing	Continuing
• MA9800: *Generators and Associated Equipment*	117.850	166.356	113.266	31.761	145.027	134.532	143.249	131.191	132.384	Continuing	Continuing

Remarks

D. Acquisition Strategy

LAMPS (Large Advanced Mobile Power Sources) Engineering & Manufacturing Development (EMD) Phase: A single competitive contract was awarded for the LAMPS EMD Phase. The EMD phase will be a Fixed Price Incentive-Firm Target (FPI-FT) contract. The EMD contract will require the vendor to integrate components and fabricate prototypes, verify prototype performance through contractor testing, deliver production representative generator sets and conduct Instructor and Key Personnel Training (I&KPT) for Government testing. Major data deliverables will include the Technical Data Package (TDP), provisioning data, logistics management information, technical manuals, test reports and cost data reporting. The Government will purchase the TDP from the vendor with the intent of using it in future competitive re-procurements for LAMPS. A Failure Mode, Effects and Criticality Analysis (FMECA), Level of Repair Analysis (LORA), Functional Configuration Audit (FCA) and a Physical Configuration Audit (PCA) will be completed to verify that the TDP accurately describes the qualified production sets.

The Management and Distribution Control (MDC) program effort will use a multi-phase acquisition strategy, continue to consolidate requirements to achieve MDD by 4QFY16, and enter the acquisition process at Milestone B. The MDC product line will include a Power Distribution Unit (PDU) designed to interface with the Advanced Medium Mobile Power Sources (AMMPS) automatic power plant/microgrid, the PDU being developed in conjunction with the LAMPS prgram, and other products to provide the full range of power distribution equipment to support present and future Joint power system requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

The Small Tactical Electric Power (STEP) program will use a multi-phase acquisition strategy. STEP requirements analysis and EMD will be separated into two phases; Phase I is System Development with multiple awards and Phase II is a down select to a single vendor for System Demonstration. The STEP program will enter the acquisition process at Milestone B, EMD.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) 194 / *Engine Driven Gen Ed*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Small Tactical Electric Power (STEP)	Various	PM E2S2 : Stafford, VA	0.000	-		-		0.561	Feb 2017	-		0.561	Continuing	Continuing	Continuing
Management and Distribution Control (MDC)/ Microgrids	Various	PM E2S2 : Ft. Belvoir	0.000	-		3.467		1.275	Feb 2017	-		1.275	Continuing	Continuing	Continuing
		Subtotal	0.000	-		3.467		1.836		-		1.836	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management and Distribution Control (MDC)/ Microgrids	C/CPFF	TBD : TBD	0.000	-		-		1.750	May 2017	-		1.750	Continuing	Continuing	Continuing
Large Advanced Mobile Power Sources (LAMPS) (100-200kW)	C/FPIF	L-3 Communications, Westwood Corporation, Tulsa, OK : Various	28.118	4.309		3.895		-		-		-	Continuing	Continuing	Continuing
Small Tactical Electric Power (STEP)	C/CPFF	TBD : TBD	0.000	-		-		8.780	Jun 2017	-		8.780	Continuing	Continuing	Continuing
		Subtotal	28.118	4.309		3.895		10.530		-		10.530	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Large Advanced Mobile Power Sources (LAMPS) (100-200kW)	MIPR	CECOM LCMC : Aberdeen Proving Ground (APG), MD	3.485	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	3.485	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) 194 / *Engine Driven Gen Ed*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Large Advanced Mobile Power Sources (LAMPS) (100-200kW)	MIPR	Army Test & Evaluation Ctr (ATEC) : APG, MD	4.858	-		1.460		-		-		-	Continuing	Continuing	Continuing
Management and Distribution Control (MDC)/ Microgrids	MIPR	Army Test & Evaluation Ctr (ATEC) : APG, MD	0.000	-		-		1.310	Jun 2017	-		1.310	0	1.310	0
		Subtotal	4.858	-		1.460		1.310		-		1.310	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.461	4.309		8.822		13.676		-		13.676	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

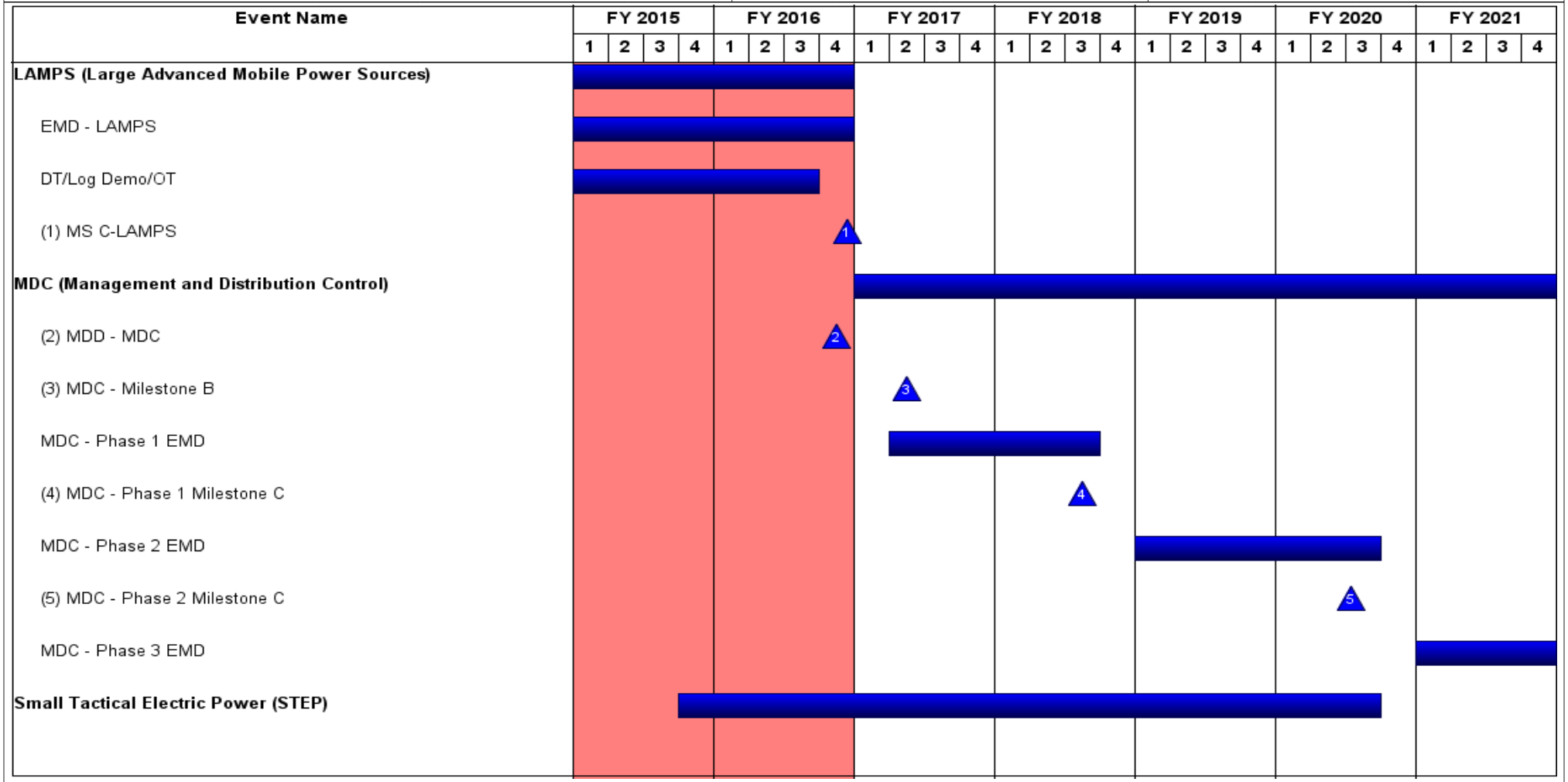

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

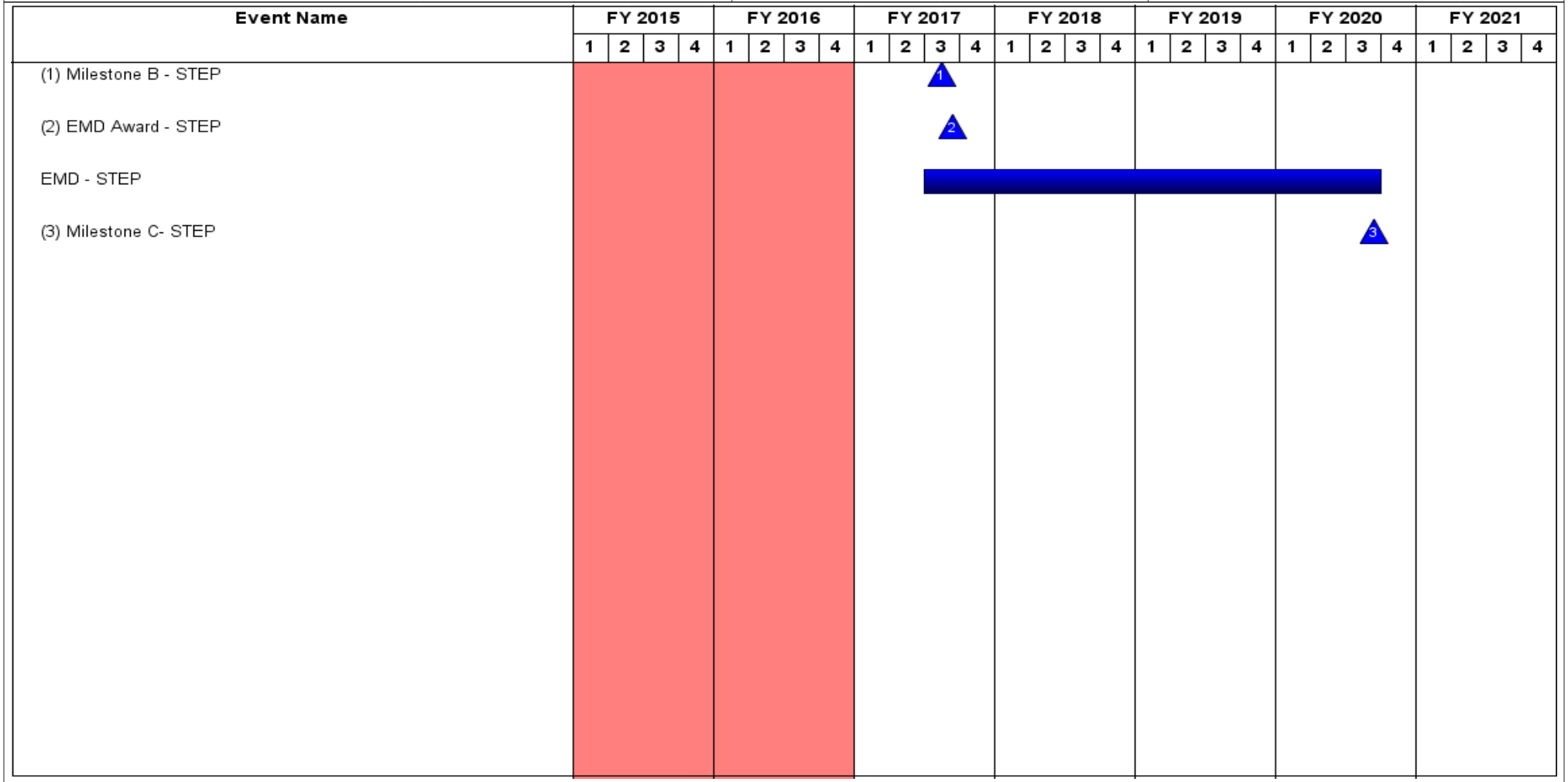

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
LAMPS (Large Advanced Mobile Power Sources)	3	2010	4	2016
EMD - LAMPS	2	2011	4	2016
DT/Log Demo/OT	1	2015	3	2016
MS C-LAMPS	4	2016	4	2016
MDC (Management and Distribution Control)	1	2017	4	2021
MDD - MDC	4	2016	4	2016
MDC - Milestone B	2	2017	2	2017
MDC - Phase 1 EMD	2	2017	3	2018
MDC - Phase 1 Milestone C	3	2018	3	2018
MDC - Phase 2 EMD	1	2019	3	2020
MDC - Phase 2 Milestone C	3	2020	3	2020
MDC - Phase 3 EMD	1	2021	3	2022
Small Tactical Electric Power (STEP)	4	2015	3	2020
Milestone B - STEP	3	2017	3	2017
EMD Award - STEP	3	2017	3	2017
EMD - STEP	3	2017	3	2020
Milestone C- STEP	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) EC9 / *Contingency Basing Infrastructure*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EC9: *Contingency Basing Infrastructure*	-	2.447	2.541	3.609	-	3.609	3.793	3.805	3.827	3.877	0.000	23.899
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY15 is the first year of funding for this project.

A. Mission Description and Budget Item Justification

This project develops the tools and processes that will optimize recommendations for the materiel used to establish, operate, and maintain contingency bases. The project will increase the available knowledge at the base level and provide an analytical foundation for sound investment decision making. The continuous improvement modeling and simulation analysis tools will match the evolution of threats and technologies. Using a system of systems engineering approach, the Contingency Base Infrastructure Product Directorate's focus ensures optimum integration of materiel across the base camp to facilitate the maximizing of Warfighter effectiveness. CBI's analytical results will allow leadership to make fact based informed decisions on the acquisition and employment/deployment of equipment. This enables contingency bases to be established, operated and managed as a system (system of systems) and the equipment acquired for the base to be compatible and efficient while providing the maximum overall support to the Warfighter. This approach supports Program(s) of Record (PORs) to maximize improvements in Operational Energy and ensures efficiencies across all Areas of Responsibility (AOR).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Contingency Base Infrastructure ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Continue integration of Model-Based Systems Engineering principles to enable analysis of contingency bases as a system (system of systems). Continuation of development of the Base Camp Master Planning Tool - Contingency Base Interface to the Warfighter (CBIWar). Support Army investment decisions across the Contingency Base Infrastructure portfolio and development of Capability Sets and their associated delivery strategy.	2.447	-	-	-	-
Title: Toolset Development ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:***	-	0.481	0.780	-	0.780

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EC9 / *Contingency Basing Infrastructure*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Funding is planned to support Integrated Toolset Demonstration (Demo 2) that will support portfolio maturation, integration and analytical evaluation. Additionally, providing analysis to the FY20 contingency basing infrastructure equipment set to support Army investment decisions for POM 19-23. ***FY 2017 Base Plans:*** Funding is planned to support Developmental Toolset Demonstration (Demo 3) and Operational Toolset Demonstration (Demo 4) that will support portfolio maturation, integration and analytical evaluation. Additionally, providing analysis to the FY21 contingency basing infrastructure equipment set to support Army investment decisions for POM 20-24.					
Title: Integrated Analysis and Design ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:*** Funding is planned to support Integrated Toolset Demonstration 2 that will support portfolio maturation, integration and analytical evaluation. Additionally, support Army investment decisions across the Contingency Base Infrastructure portfolio. ***FY 2017 Base Plans:*** Funding is planned to support Developmental Toolset Demonstration and Operational Toolset Demonstration that will support portfolio maturation, integration and analytical evaluation. Additionally, support Army investment decisions across the Contingency Base Infrastructure portfolio.	-	0.972	1.391	-	1.391
Title: Capabilities Implementation and Materiel Requirements ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:*** Funding is planned to support the development of the design of different sized contingency base camps, capability sets, expansion and enhancements sets, and establishment of a configuration management plan to manage the base camp capability sets. ***FY 2017 Base Plans:***	-	0.421	0.613	-	0.613

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EC9 / *Contingency Basing Infrastructure*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Funding is planned to continue supporting the development of the design of different sized contingency base camps, capability sets, expansion and enhancements sets, and establishment of a configuration management plan to manage the base camp capability sets.					
Title: Program Management ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:*** Oversight and management of integrated analysis and design, capabilities implementation and materiel requirements, and toolset development. Funding to support managing cost, schedule, performance, risk, personnel, and operational activities. Also oversight, analysis and management of operational energy related impacts and technology gaps. ***FY 2017 Base Plans:*** Oversight and management of integrated analysis and design, capabilities implementation and materiel requirements, and toolset development. Funding to support managing cost, schedule, performance, risk, personnel, and operational activities. Also oversight, analysis and management of operational energy related impacts and technology gaps.	-	0.667	0.825	-	0.825
Accomplishments/Planned Programs Subtotals	2.447	2.541	3.609	-	3.609

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable for this item.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EC9 / *Contingency Basing Infrastructure*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PM E2S2 / PEO CS&CSS : Fort Belvoir, VA / Warren, MI	0.000	0.401	Feb 2015	0.667		0.825	Feb 2017	-		0.825	0	1.893	0
		Subtotal	0.000	0.401		0.667		0.825		-		0.825	0.000	1.893	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Toolset Development	Various	Various : Various	0.000	0.761	Feb 2015	0.481		0.780	Feb 2017	-		0.780	0	2.022	Continuing
Integrated Analysis and Design	Various	Various : Various	0.000	0.873	Feb 2015	0.972		1.391	Feb 2017	-		1.391	0	3.236	Continuing
Capabilities Implementation and Materiel Requirements	Various	Various : Various	0.000	0.412	Feb 2015	0.421		0.613	Feb 2017	-		0.613	0	1.446	Continuing
		Subtotal	0.000	2.046		1.874		2.784		-		2.784	0.000	6.704	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	2.447		2.541		3.609		-		3.609	0.000	8.597	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EC9 / *Contingency Basing Infrastructure*

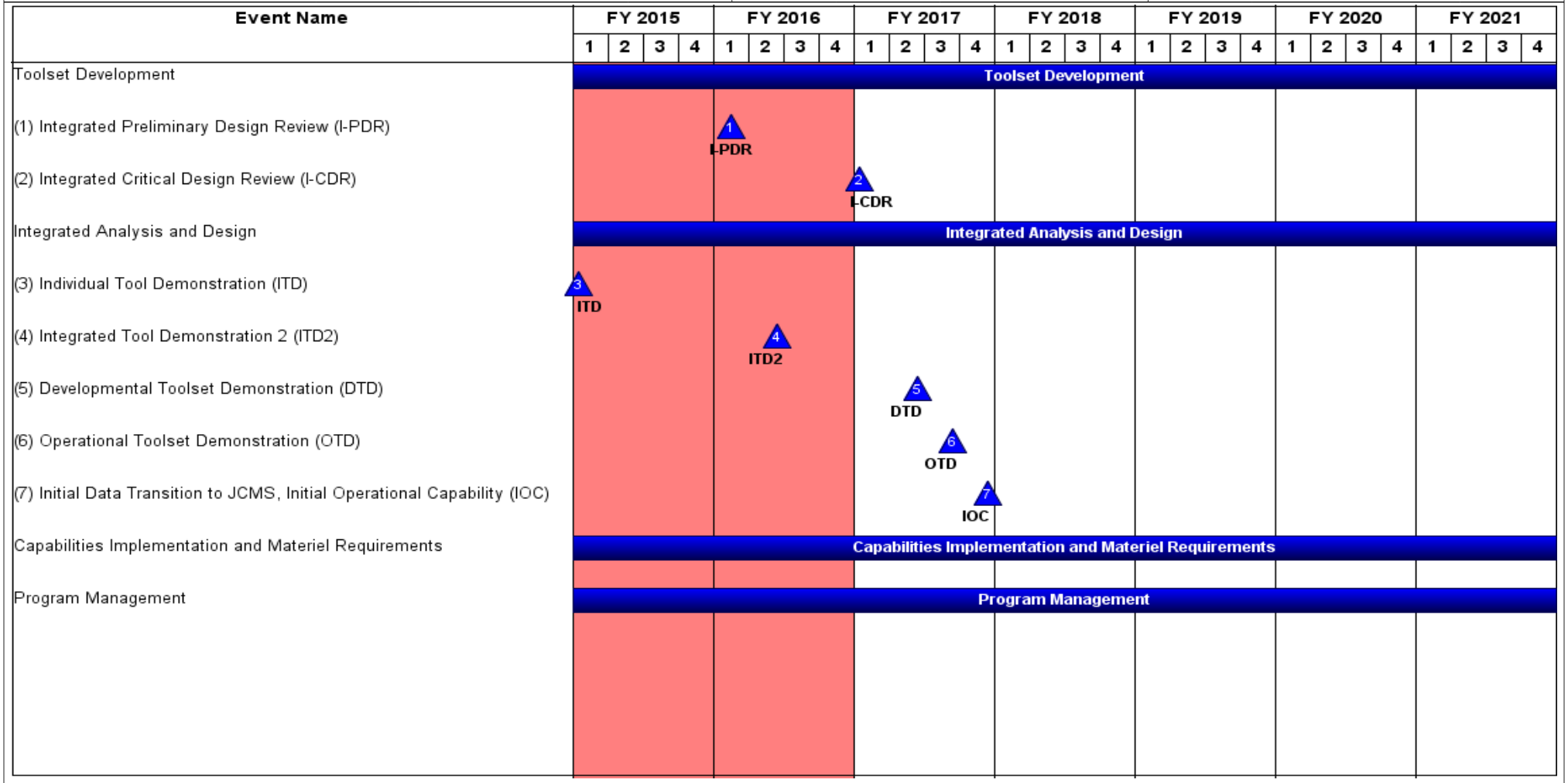

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EC9 / *Contingency Basing Infrastructure*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Toolset Development	1	2015	4	2021
Integrated Preliminary Design Review (I-PDR)	1	2016	1	2016
Integrated Critical Design Review (I-CDR)	1	2017	1	2017
Integrated Analysis and Design	1	2015	4	2021
Individual Tool Demonstration (ITD)	1	2015	1	2015
Integrated Tool Demonstration 2 (ITD2)	2	2016	2	2016
Developmental Toolset Demonstration (DTD)	2	2017	2	2017
Operational Toolset Demonstration (OTD)	3	2017	3	2017
Initial Data Transition to JCMS, Initial Operational Capability (IOC)	4	2017	4	2017
Capabilities Implementation and Materiel Requirements	1	2015	4	2021
Program Management	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) EJ9 / *Manuever Support Vessel -Light (MSV-L)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ9: *Manuever Support Vessel - Light (MSV-L)*	-	0.000	10.066	18.338	-	18.338	14.522	0.000	0.000	0.000	0.000	42.926
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Maneuver Support Vessel - Light (MSV(L) is a New Start in FY16.

A. Mission Description and Budget Item Justification

FY17 dollars in the amount of $18.586M to support MSV(L) in the Engineering and Manufacturing Development (EMD) for testing of the Maneuver Support Vessel (Light)(MSV(L)). The MSV(L) is a modified non-developmental item (NDI), multifunctional waterborne mobility platform, which will displace the current Landing Craft Mechanized-8 (LCM-8) with much greater payload and speed while being capable of operating in shallower water (improved draft), and also provide roll-through capability via stern and bow ramps. The MSV(L) will provide a waterborne corridor for movement and maneuver; expeditionary delivery of combat configured equipment, troops, and logistics, in austere anti-access/area denial environments; and operational capability from ship to shore and along coastal waters, narrow inland water ways and rivers. It will be capable of transporting multiple combat configured ready-to-fight payloads with crew (i.e. an Abrams tank; or two Strykers with bar armor; or four Joint Light Tactical Vehicles (JLTVs); or a Heavy Expandable Mobility Tactical Truck (HEMTT); or a Load Handling System (LHS) and trailer. It will be able to operate fully loaded at a speed of 15 knots in Sea State 3 (SS3) conditions, while being survivable (seaworthy) in SS7 conditions on the Beaufort Scale. It will be furnished with a subsurface surveillance device for obstacle detection and avoidance, protection from small arms fire, and two Common Remotely Operated Weapon Stations (CROWS II) for vessel defense and force protection, and mitigate detection through reduction of thermal and acoustic signature. It will move combat configured forces and supplies more efficiently than the LCM-8.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Systems Engineering / Program Management ***Description:*** Salaries for Core and Matrix personnel,includes Source Selection Evaluation Board (SSEB). ***FY 2016 Plans:*** Salaries for Core and Matrix personnel, includes Source Selection Evaluation Board (SSEB). ***FY 2017 Base Plans:*** PM/Matrix Support includes PM and System Engineering oversight required to manage the program and provide contractor oversight. Salaries, Benefits, Travel, Personnel Training and other government costs are included for retaining a professional acquisition workforce.	-	2.811	3.824	-	3.824
Title: Naval Architecture Support	-	-	0.631	-	0.631

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Manuever Support Vessel -Light (MSV-L)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: 2.5 man years for Naval architecture support and travel expenses. ***FY 2017 Base Plans:*** 2.5 man years to provide Naval architecture support for the MSV(L) program to include travel expenses.					
Title: Program Management Support ***Description:*** Program Management Support (contract) Scheduler and Project Office support on MSV(L). ***FY 2017 Base Plans:*** Salary and travel expenses for 2 man years for Scheduler and Project Office support on MSV(L).	-	-	0.507	-	0.507
Title: Government Furnished Equipment (GFE) ***Description:*** GFE for prototype vessel consist of Command, Control, Communications, Computers, Intelligence, Surveilance and Reconnaissance (C4ISR); and Remote Weapon Stations (RWS) ***FY 2016 Plans:*** GFE for prototype vessel consisting of C4ISR and RWS	-	1.122	-	-	-
Title: Engineering and Manufacturing Development (EMD) ***Description:*** EMD contract ***FY 2016 Plans:*** EMD contract ***FY 2017 Base Plans:*** EMD contract	-	5.008	13.058	-	13.058
Title: Test and Evaluation ***Description:*** Modeling & Simulation; and Scale modeling testing ***FY 2016 Plans:*** Modeling and simulation testing to include model basin testing. ***FY 2017 Base Plans:***	-	1.125	0.318	-	0.318

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Manuever Support Vessel -Light (MSV-L)*

B. Accomplishments/Planned Programs ($ in Millions)

	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Government test support					
Accomplishments/Planned Programs Subtotals	-	10.066	18.338	-	18.338

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 643804526 Logistics and Engineer Eq: *643804 526 Logistics and Engineer Adv Dev*	2.803	2.546	3.976	-	3.976	4.197	3.298	3.330	3.336	Continuing	Continuing
• SSN R03050: *MSV Support Vessel (Light) MSV-L SSN R03050*	-	-	-	-	-	-	79.991	81.512	83.063	Continuing	Continuing

Remarks

The Maneuver Support Vessel (Light) (MSV(L)) is a new start program in FY16. APE 0603804, Project 526 provided resourcing for FY15 research and development support to this program.

Significant Achievements:
Analysis of Alternatives final report approved 19 February 2015.
Capabilities Development Document (CDD) approved 7 August 2015.
Issued Requests for Information (RFIs) and follow-on questions throughout the year including an RFI in June 2015 which contained the Army Technical Product Description (ATPD), Scope of Work (SOW) and affordability caps.
Configuration Steering Board (CSB) conducted 18 November 2015.
Industry Day conducted 1 December 2015.

D. Acquisition Strategy

Enter at Milestone B in FY17 with a four year Engineering and Manufacturing Development (EMD) Phase, followed by Low Rate Initial Production (LRIP) and Full Rate Production (FRP). The Acquisition Strategy is to have a Full and Open competition, evaluate paper design proposals for the selection of one contractor at MS B to build and test one prototype and then inform the Capability Production Document (CPD), LRIP, and FRP. RFP to be released in June 2016 with anticipated contract award March 2017. Purchase Model to perform basin testing as a mitigation prior to full size prototype testing. Acquisition Strategy is to award one, 10-12 year contract; broken down into EMD, LRIP and FRP.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) EJ9 / *Manuever Support Vessel -Light (MSV-L)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Manufacturing Development (EMD)	C/FP	TBD : TBD	0.000	-		5.008	Jun 2016	13.058	Mar 2017	-		13.058	0	18.066	0
Government Furnished Equipment (GFE)	MIPR	TBD : TBD	0.000	-		1.122	Mar 2016	-		-		-	0	1.122	0
		Subtotal	0.000	-		6.130		13.058		-		13.058	0.000	19.188	0.000

Remarks

Due to Re-Phase of EMD from 3 to 4 years, contract award will occur in FY17.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Salaries for Core and Matrix Personnel Army Watercraft, TARDEC, ILSC PSID.	MIPR	Detroit Arsenal : Warren, MI	0.000	-		2.811	Oct 2015	3.824	Oct 2016	-		3.824	Continuing	Continuing	0
Salaries/Travel for Naval Architecture Support	C/CPFF	TBD : TBD	0.000	-		-		0.631		-		0.631	0	0.631	0
Salaries / Travel for Program Management Support	C/CPFF	TBD : TBD	0.000	-		-		0.507		-		0.507	0	0.507	0
		Subtotal	0.000	-		2.811		4.962		-		4.962	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	ATEC: APG : APG, MD	0.000	-		-		0.318	Mar 2017	-		0.318	0	0.318	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) EJ9 / *Manuever Support Vessel -Light (MSV-L)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing Modeling & Simulation and Scale Modeling	TBD	TBD : TBD	0.000	-		1.125	Jun 2016	-		-		-	0	1.125	0
		Subtotal	0.000	-		1.125		0.318		-		0.318	0.000	1.443	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		10.066		18.338		-		18.338	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Manuever Support Vessel -Light (MSV-L)*

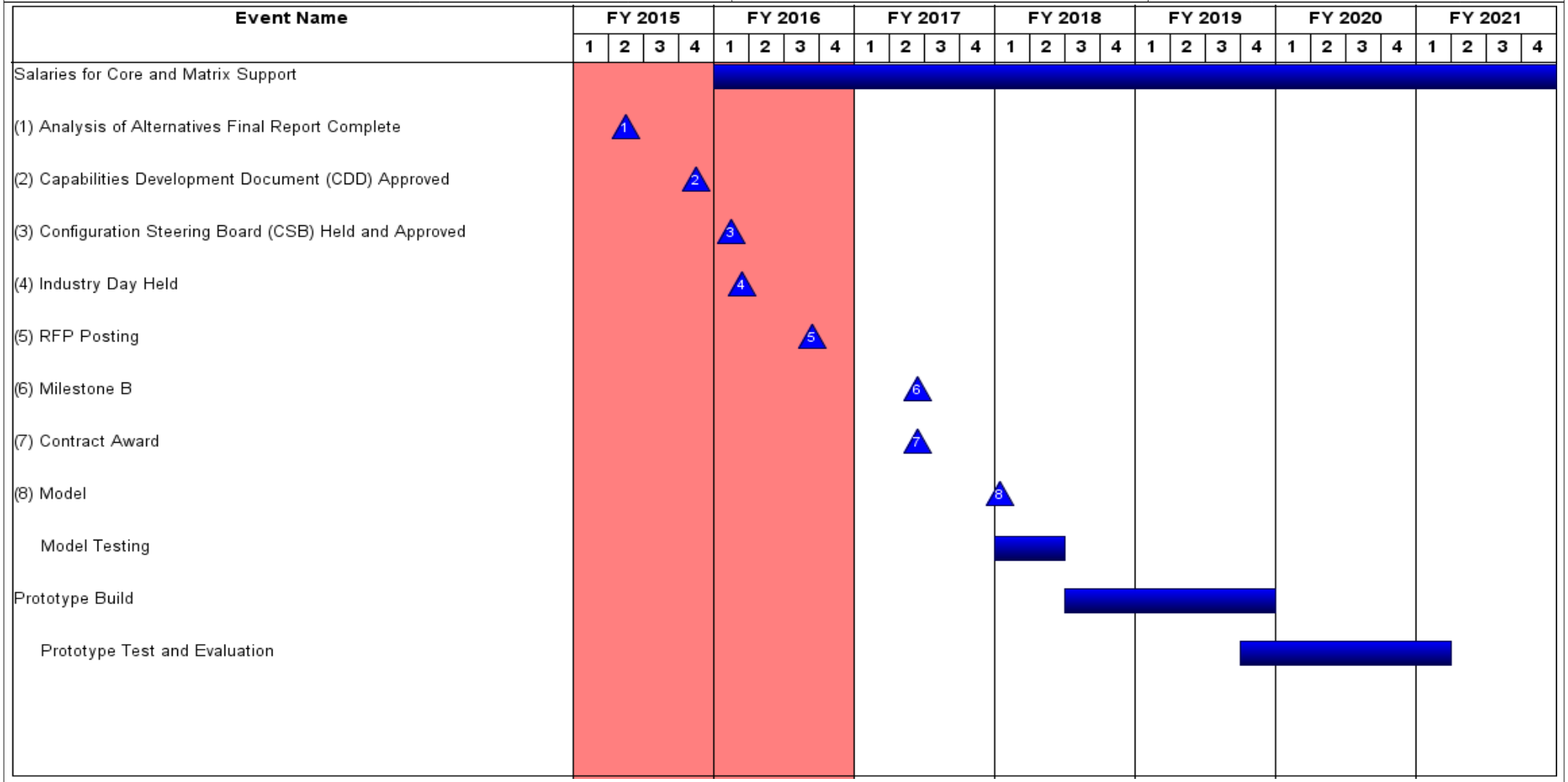

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Manuever Support Vessel -Light (MSV-L)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Salaries for Core and Matrix Support	1	2016	1	2022
Analysis of Alternatives Final Report Complete	2	2015	2	2015
Capabilities Development Document (CDD) Approved	4	2015	4	2015
Configuration Steering Board (CSB) Held and Approved	1	2016	1	2016
Industry Day Held	1	2016	1	2016
RFP Posting	3	2016	4	2016
Milestone B	2	2017	2	2017
Contract Award	2	2017	2	2017
Model	1	2018	1	2018
Model Testing	1	2018	2	2018
Prototype Build	3	2018	4	2019
Prototype Test and Evaluation	4	2019	1	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H01 / *Combat Engineer Eq Ed*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
H01: *Combat Engineer Eq Ed*	-	0.998	0.823	2.280	-	2.280	3.736	3.420	2.828	4.825	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the Engineering Manufacturing Development (EMD) of military Construction Equipment used in support of horizontal and vertical engineer construction tasks and to develop a variety of enabling systems that will support and improve mobility for Engineers in the Brigade Combat Teams (BCT) and Combat Support Brigades (CSB) forces. This project also supports the EMD of enabling systems to meet critical capabilities of joint interdependence through Air and Ground Line of Communication and Rapid Tactical Earthmoving repair and construction which increase the operational reach of modular forces. The BCT and CSB systems include: High Mobility Engineer Excavators, Scrapers, Scoop Loaders, Skid Steer Loaders, Dozers, Cranes and Graders. This project will also support the Research into the Deuce Replacement and the Energy Productivity Study.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Drive Assist ***Description:*** Integrate and demonstrate COTS technologies enhancing CE operations. ***FY 2016 Plans:*** Focus on the inclusion of referenced technologies for integration on a 120M Grader. Technology will primarily be COTS equipment ***FY 2017 Base Plans:*** Investigate the possibility of transitioning the identified technology onto additional CE platforms such as the T-5 and T-9 Dozer	-	0.150	1.353	-	1.353
Title: Operational Efficiency ***Description:*** Improve Operational Efficiency/Reduce Maintenance Time ***FY 2015 Accomplishments:*** Using Government supplied vehicles (GFE), evaluate new technologies to be developed by private industry to improve the efficiency or reduce maintenance burden.	0.283	-	-	-	-
Title: System Engineering/Program Management ***Description:*** Program Management	0.472	0.346	0.450	-	0.450

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H01 / *Combat Engineer Eq Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
FY 2015 Accomplishments: Program Management Support of R&D Program for CE ***FY 2016 Plans:*** Program Management Support of R&D Program for CE ***FY 2017 Base Plans:*** Program Management Support of R&D Program for CE					
Title: Work Tool Enhancement ***Description:*** Develop prototype systems to provide additional machine capability. This may include sweepers, buckets, lift devices, fork enhancements, etc. ***FY 2015 Accomplishments:*** Investigate the availability and commercial capability of the Family of Skid Steer Loaders (CASE M400 series). These attachments include Rock drill, Angle Boom, Roto Tiller, Vibratory Roller, Snow Blower, Dozer Blade, Sand Bagger, Backhoe and Bridge Handling Equipment. Specific focus will be on attachments which improve the capability to improve the Rapid Airfield Repair (Vibratory Roller, Roto-tiller, Back-hoe). The Effort may include purchase/lease of hardware and demonstration of capacities which will enhance Rapid Airfield Repair. ***FY 2016 Plans:*** Investigate the availability and commercial capability of the Family of Skid Steer Loaders (CASE M400 series). These attachments include Rock drill, Angle Boom, Roto Tiller, Vibratory Roller, Snow Blower, Dozer Blade, Sand Bagger, Backhoe and Bridge Handling Equipment. Specific focus will be on attachments which improve the capability to improve the Rapid Airfield Repair (Vibratory Roller, Roto-tiller, Back-hoe). The Effort may include purchase/lease of hardware and demonstration of capacities which will enhance Rapid Airfield Repair. ***FY 2017 Base Plans:*** Investigate the availability and commercial capability of the Family of Skid Steer Loaders (CASE M400 series). These attachments include Rock drill, Angle Boom, Roto Tiller, Vibratory Roller, Snow Blower, Dozer Blade, Sand Bagger, Backhoe and Bridge Handling Equipment. Specific focus will be on attachments which improve the capability to improve the Rapid Airfield Repair (Vibratory Roller, Roto-tiller, Back-hoe). The Effort may include purchase/lease of hardware and demonstration of capacities which will enhance Rapid Airfield Repair.	0.123	0.047	0.477	-	0.477
Title: Machine Product Improvement	0.120	0.080	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H01 / *Combat Engineer Eq Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Investigate technologies to enhance performance/safety of current systems. Examples of this may include track slip detection on the DEUCE, whole vehicle protection, SLEP technology insertion. ***FY 2015 Accomplishments:*** Ivestigate technologies to enhance performance/safety of current systems. Examples of this may include track slip detection on the DEUCE, whole vehicle protection, SLEP technology insertion. ***FY 2016 Plans:*** Ivestigate technologies to enhance performance/safety of current systems. Examples of this may include track slip detection on the DEUCE, whole vehicle protection, SLEP technology insertion.					
Title: Forced Entry (Airborne/Air Assault) Study/Development ***Description:*** Explore options of using Program of Record systems to meet Forced Entry requirements. ***FY 2016 Plans:*** Investigate the possibility of adapting the BHL for the Air Assault role. Also, research possible material solutions for the ERACC IV capability.	-	0.200	-	-	-
Accomplishments/Planned Programs Subtotals	0.998	0.823	2.280	-	2.280

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• High Mobility Engineer Excavator I: *High Mobility Engineer Excavator I R05900*	-	2.656	1.743	2.900	4.643	1.978	-	-	-	0.000	9.277
• Grader, Mtzd, Hvy: *Grader, Mtzd, Hvy R03801*	5.827	5.903	1.742	3.047	4.789	0.989	-	-	-	0.000	17.508
• Hydraulic Excavator: *Hydraulic Excavator X01500*	4.938	-	1.123	-	1.123	4.944	-	-	-	0.000	11.005
• Plant, Asphalt Mixing: *Plant, Asphalt Mixing M08100*	0.667	0.984	-	-	-	-	-	-	-	0	1.651

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H01 / *Combat Engineer Eq Ed*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Tractor Full Tracked, Med T-9: *Tractor Full Tracked, Med T-9 M06100*	34.071	27.156	0.000	4.426	4.426	-	-	-	-	0	65.653
• All Terrain Cranes: *All Terrain Cranes R06701*	4.938	16.750	65.285	-	65.285	8.935	17.632	31.477	38.163	Continuing	Continuing
• Scraper, Earthmoving: *Scraper, Earthmoving R02800*	14.926	26.125	26.233	-	26.233	18.740	-	-	-	0	86.024
• ERACC 4: *ERACC IV R03001*	2.741	2.531	-	-	-	-	-	-	-	0	5.272
• ERACC 1: *ERACC I SSA R07002*	2.378	-	-	-	-	-	-	-	-	0	2.378
• ERACC 2: *ERACC 2 EE R07003*	8.365	-	2.779	-	2.779	3.663	0.992	0.991	0.991	Continuing	Continuing
• ERACC 3: *ERACC III METL R07004*	1.440	-	-	-	-	-	-	-	3.284	0	4.724
• Const Equip ESP: *Const Equip ESP M05500*	15.933	19.640	26.172	-	26.172	35.582	39.190	36.482	22.054	Continuing	Continuing

Remarks

D. Acquisition Strategy

Conduct research, development, and investigations on future Construction Equipment (CE) and identify the path forward for programs to be transitioned for PEO program management. Identify technical advancements that can improve safety, reliability, survivability, transportability, availability, maintainability and reduce the logistical footprints for future CE equipment.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H01 / *Combat Engineer Eq Ed*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR+STIR	TBD	TACOM : Warren, Michigan	0.167	-		-		-		-		-	0	0.167	0
		Subtotal	0.167	-		-		-		-		-	0.000	0.167	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Pre-Award requirements, KPP, selection criteria development, Testing of systems	Various	TACOM & TARDEC : Warren, MI	1.675	-		-		-		-		-	0	1.675	0
Development of Drive Assist for Combat Engineer	TBD	TBD : TBD	2.183	-		0.150		1.353	Feb 2017	-		1.353	0	3.686	Continuing
Design armor kits for Combat Engineer	Various	TARDEC : Warren, MI	5.995	-		-		-		-		-	0	5.995	Continuing
Development of Simulator	Various	PEO Stricom : PEO, Stricom, Olrando, FL	8.983	-		-		-		-		-	0	8.983	Continuing
Hazard Clearance at Speed	TBD	TARDEC : Warren, Michigan	0.001	-		-		-		-		-	0	0.001	0
Forced Entry: (Airborne/ Air Assault) Study/ Development	TBD	TARDEC : Warren, MI	9.256	-		0.200		-		-		-	0	9.456	Continuing
Market Research	TBD	TARDEC : Warren, Michigan	0.189	-		-		-		-		-	0	0.189	0
Work Tool Enhancement	MIPR	Various : Various	0.000	0.123	Jan 2015	0.047	Mar 2016	0.477	Mar 2017	-		0.477	0	0.647	0
Machine Product Improvement	TBD	Caterpillar : Illinois	0.000	0.120	Aug 2015	0.080	Jun 2016	-		-		-	0	0.200	0
		Subtotal	28.282	0.243		0.477		1.830		-		1.830	0.000	30.832	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H01 / *Combat Engineer Eq Ed*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering/ Program Management	MIPR	TARDEC/TACOM : Warren, Michigan	0.916	0.472	Dec 2014	0.346	Feb 2016	0.450	Dec 2016	-		0.450	0	2.184	0
		Subtotal	0.916	0.472		0.346		0.450		-		0.450	0.000	2.184	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Efficiency	MIPR	TARDEC, Warren, Michigan : TARDEC, Warren, Michigan	0.022	0.283	Feb 2016	-		-		-		-	0	0.305	0
Operational Energy/Duty Cycle Monitoring	MIPR	TARDEC & ATC : Warren, Michigan	0.987	-		-		-		-		-	0	0.987	0
Non Nuclear Soil Density Set Testing	TBD	TARDEC : Warren, MI	0.050	-		-		-		-		-	0	0.050	0
		Subtotal	1.059	0.283		-		-		-		-	0.000	1.342	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	30.424	0.998		0.823		2.280		-		2.280	0.000	34.525	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H01 / *Combat Engineer Eq Ed*

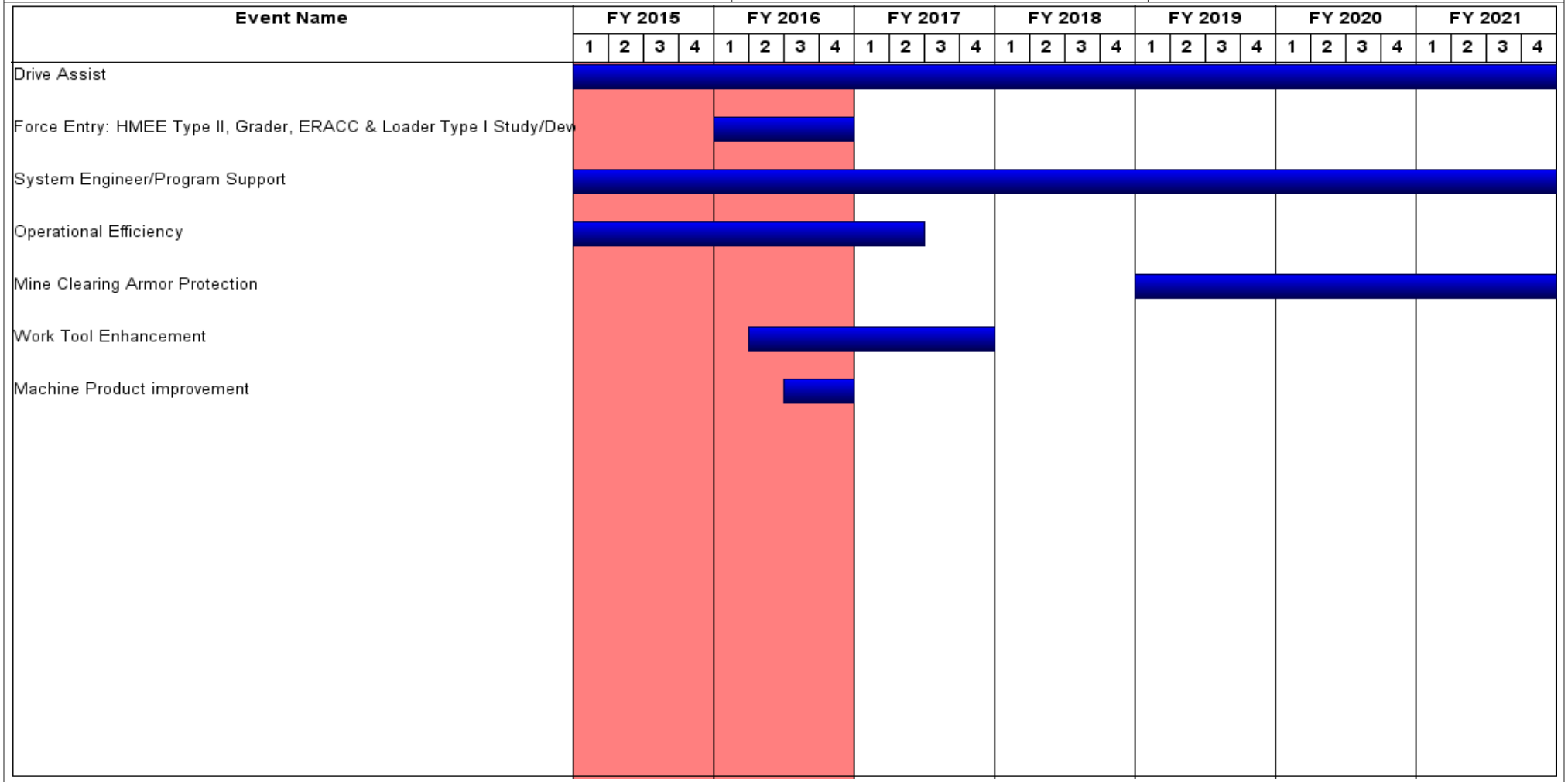

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H01 / *Combat Engineer Eq Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Drive Assist	1	2012	4	2021
Force Entry: HMEE Type II, Grader, ERACC & Loader Type I Study/Development	1	2016	4	2016
System Engineer/Program Support	1	2013	4	2021
Operational Efficiency	1	2013	2	2017
Mine Clearing Armor Protection	1	2019	4	2021
Work Tool Enhancement	2	2016	4	2017
Machine Product improvement	3	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
H02: *Tactical Bridging - Engineering Development*	-	6.722	9.796	14.245	-	14.245	24.283	7.158	5.775	2.327	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the engineering and manufacturing development and transition to procurement of Future Force Bridge Systems and support equipment. Funding supports testing associated with the Low Rate Initial Production (LRIP) phase of the Joint Assault Bridge (JAB) and development of the Line of Communication Bridge (LOCB). This project also funds efforts to upgrade and modernize the Bridging Product Management portfolio through the development of new systems and enhancement of existing systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Joint Assault Bridge (JAB) Development and Testing	0.900	5.000	8.600	-	8.600
Description: JAB Development and Testing ***FY 2015 Accomplishments:*** JAB Testing ***FY 2016 Plans:*** JAB Testing ***FY 2017 Base Plans:*** Operational Testing and Live Fire Testing of the JAB					
Title: Line of Communication Bridge (LOCB) Development and Testing	5.626	4.671	-	-	-
Description: Prototype development and developmental and operational testing of the LOCB ***FY 2015 Accomplishments:*** Continuation of testing of the LOCB System ***FY 2016 Plans:*** Continuation of testing of the LOCB System					
Title: Structural Health Monitoring System	0.150	0.125	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Develop and integrate a passive method to collect mobile military bridge system usage and health data and provide that information back to the user for informed decision making. System is targeted for use on the JAB, REBS, Dry Support Bridge (DSB), and LOCB and will reduce the requirement for in-field inspections. ***FY 2015 Accomplishments:*** Continued development of the Structural Health Monitoring system ***FY 2016 Plans:*** Continued development and testing of the Structural Health Monitoring system					
Title: Bridge Supplemental Set (BSS) ***Description:*** Develop a multi-functional, consolidated engineering set consisting of an anchorage system, access/egress traction improvement matting, power generation, tools, and a float bridge protection device. The BSS is targeted for use with multiple tactical bridging systems to include the LOCB, IRB, and the DSB. It will also increase the capability of the MRBC. ***FY 2015 Accomplishments:*** Continuation of BSS Development ***FY 2017 Base Plans:*** FY17 RDTE will fund development of contract documents from User requirements, preparing Request(s) for Proposals, source selection evaluation, and award of development contracts for BSS subsystems. .	0.046	-	5.645	-	5.645
Accomplishments/Planned Programs Subtotals	6.722	9.796	14.245	-	14.245

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPA-3, G06520: *OPA-3, G06520 Bridge Supplemental Set*	-	4.959	0.983	-	0.983	5.890	5.912	4.956	5.948	Continuing	Continuing
• WTCV, GZ3001: *WTCV, GZ3001 Joint Assault Bridge*	39.362	33.455	13.533	-	13.533	128.967	166.930	183.719	170.743	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPA-3, MX0100 Tactical Bridging: *OPA-3, G82404 Line of Communication Bridge*	-	9.822	13.553	26.000	39.553	16.429	18.710	23.634	19.447	Continuing	Continuing

Remarks

D. Acquisition Strategy

RDT&E efforts to support testing and follow-on production.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	MIPR	Various : Various	2.987	1.523		1.771	Jan 2016	1.645	Dec 2016	-		1.645	Continuing	Continuing	0
		Subtotal	2.987	1.523		1.771		1.645		-		1.645	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JAB Development	C/FFP	DRS/GDLS : Saint Louis, MO/Sterling Hts, MI	50.652	-		-		-		-		-	Continuing	Continuing	Continuing
LOCB Development	MIPR	Rock Island Arsenal (RIA) : Rock Island, IL	17.495	-		-		-		-		-	Continuing	Continuing	Continuing
Bridge Supplemental Set-Anchorage	C/FFP	TBD : TBD	0.050	0.046	May 2015	-		1.500	Apr 2017	-		1.500	0	1.596	0
Bridge Supplemental Set-Bridge Protection Device	C/FFP	TBD : TBS	0.000	-		-		0.750	May 2017	-		0.750	0	0.750	0
Bridge Supplemental Set-Site Stability	C/FFP	TBD : TBS	0.000	-		-		1.250	Jun 2017	-		1.250	0	1.250	0
Bridge Supplemental Set-Power Generation/Tools	MIPR	TBD : TBS	0.000	-		-		0.500	Jun 2017	-		0.500	0	0.500	0
Structural Health Monitoring	MIPR	TARDEC : Warren, MI	0.750	0.100	May 2015	0.125	Feb 2016	-		-		-	0	0.975	0
REBS Auto Launch-Retrieve	SS/FFP	TBD : TBS	1.500	-		-		-		-		-	0	1.500	0
		Subtotal	70.447	0.146		0.125		4.000		-		4.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government In-House	MIPR	TACOM : Warren, MI	8.100	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.100	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JAB Testing	MIPR	Aberdeen Proving Grounds (APG) : APG, Maryland	12.321	0.900	Sep 2015	5.000	Apr 2016	8.600	Jan 2017	-		8.600	Continuing	Continuing	Continuing
LOCB Testing	MIPR	ATEC : Aberdeen, MD	6.800	4.153	May 2015	2.900	Mar 2016	-		-		-	0	13.853	0
		Subtotal	19.121	5.053		7.900		8.600		-		8.600	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	100.655	6.722		9.796		14.245		-		14.245	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

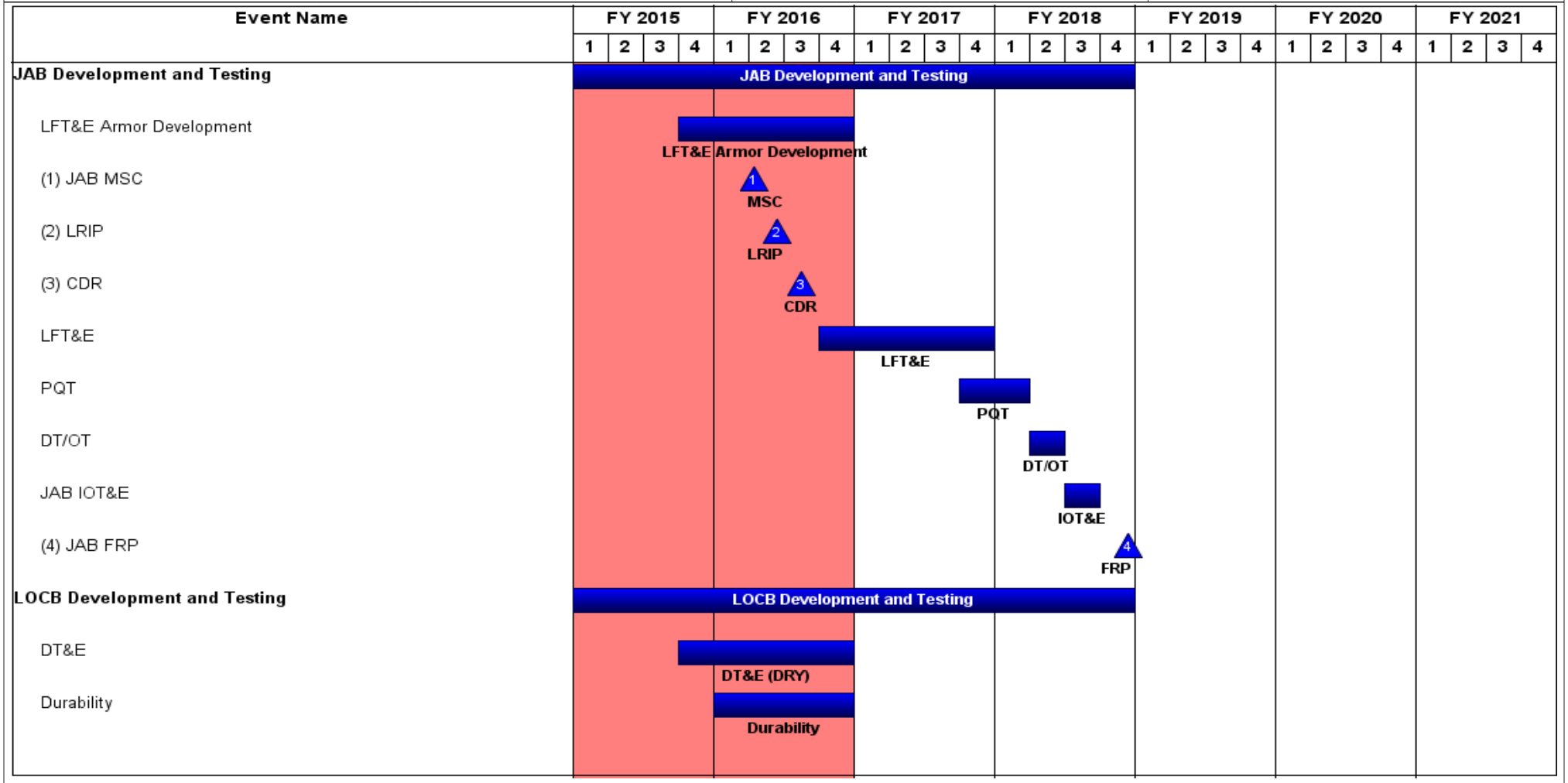

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

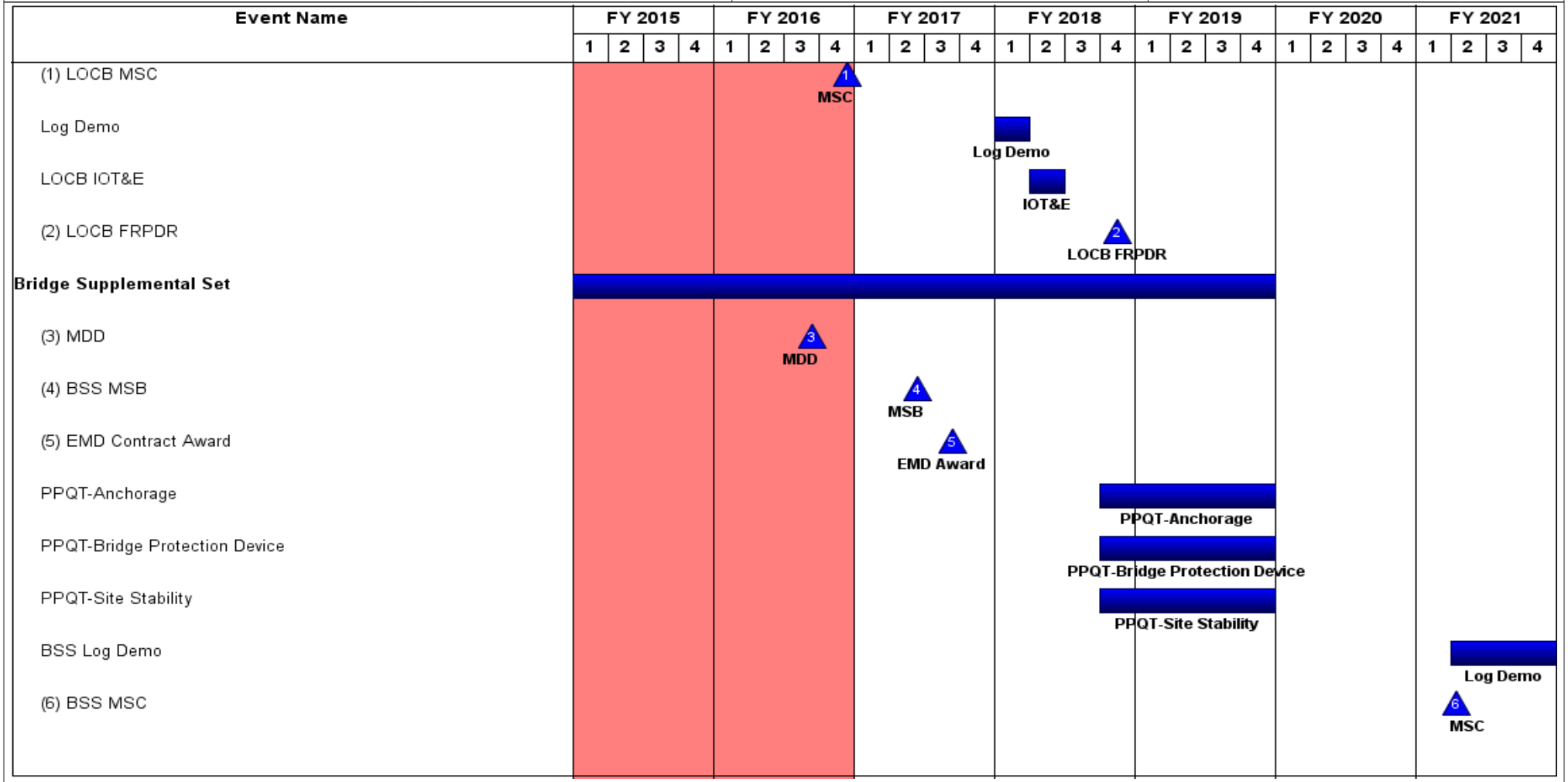

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

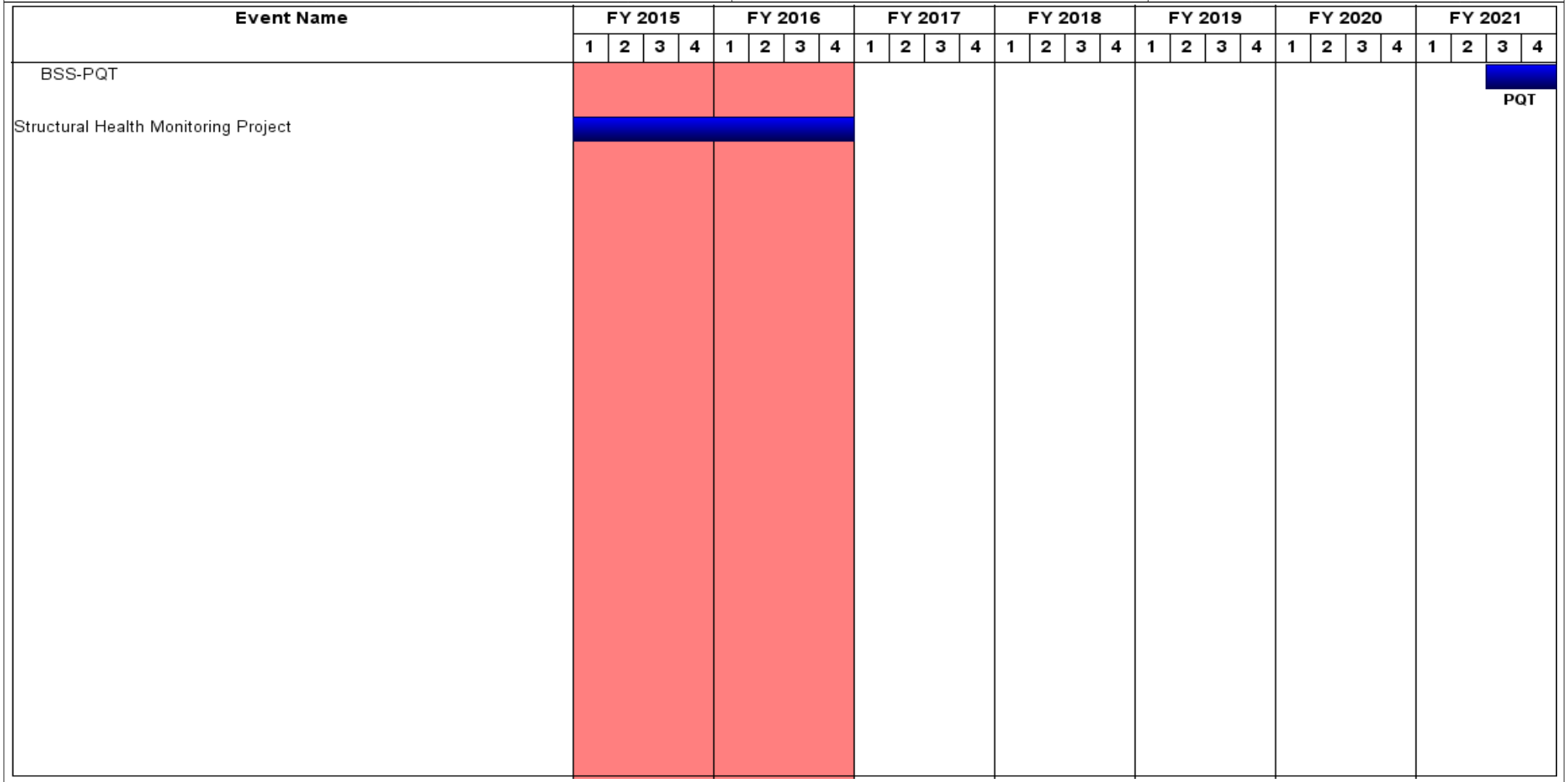

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JAB Development and Testing	1	2015	4	2018
LFT&E Armor Development	4	2015	4	2016
JAB MSC	2	2016	2	2016
LRIP	2	2016	2	2016
CDR	3	2016	3	2016
LFT&E	4	2016	4	2017
PQT	4	2017	1	2018
DT/OT	2	2018	2	2018
JAB IOT&E	3	2018	3	2018
JAB FRP	4	2018	4	2018
LOCB Development and Testing	2	2012	4	2018
DT&E	4	2015	4	2016
Durability	1	2016	4	2016
LOCB MSC	4	2016	4	2016
Log Demo	1	2018	1	2018
LOCB IOT&E	2	2018	2	2018
LOCB FRPDR	4	2018	4	2018
Bridge Supplemental Set	2	2014	4	2019
MDD	3	2016	3	2016
BSS MSB	2	2017	2	2017
EMD Contract Award	3	2017	3	2017
PPQT-Anchorage	4	2018	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PPQT-Bridge Protection Device	4	2018	4	2019
PPQT-Site Stability	4	2018	4	2019
BSS Log Demo	2	2021	4	2021
BSS MSC	2	2021	2	2021
BSS-PQT	3	2021	4	2021
Structural Health Monitoring Project	2	2014	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H14 / *Materials Handling Equipment - Ed*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
H14: *Materials Handling Equipment - Ed*	-	0.273	0.628	0.960	-	0.960	0.560	0.450	0.469	0.471	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports engineering, manufacturing, and development of Material Handling Equipment (MHE) including Rough Terrain Forklifts, Container Handling Equipment, and other cargo handling related items to enable Combat Service Support units to rapidly and efficiently move and deliver critical supplies worldwide to the Soldier. Efforts performed under this project include conducting market research, supporting operational requirements identification and validation, conducting trade studies, generating life cycle cost estimates, performing system engineering, developing performance specifications, conducting pre-production test and evaluation, and preparing program management and acquisition documents.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Material Handling Equipment (MHE) System Improvement ***Description:*** System Improvements for Material Handling Equipment ***FY 2015 Accomplishments:*** Investigate component modernization of RTCH and testing of ATLAS II Wider Forklift	0.226	-	-	-	-
Title: Investigate high-speed towing for LCRTF ***Description:*** Investigate high-speed towing for LCRTF ***FY 2015 Accomplishments:*** LCRTF high-speed towing development	0.047	-	-	-	-
Title: Platform Safety ***Description:*** Research and Demonstrate technologies which would enhance and improve the safe operation of Material Handling Equipment to include sensors and cameras. ***FY 2016 Plans:*** Investigate the possibility of transitioning the identified technology onto additional MHE platforms such as the ALTAS and LCRTF. ***FY 2017 Base Plans:***	-	0.330	0.466	-	0.466

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H14 / *Materials Handling Equipment - Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Investigate the possibility of transitioning the identified technology onto additional MHE platforms such as the ALTAS and LCRTF.					
Title: Work Tool Enhancement ***Description:*** Develop prototype systems to provide additional machine capability. This may include sweepers, buckets, lift devices, fork enhancements, etc. ***FY 2016 Plans:*** Work with CASCOM to further define additional capability needs for the LCRTF and ATLAS system. ***FY 2017 Base Plans:*** Work with CASCOM to further define additional capability needs for the LCRTF and ATLAS system.	-	0.298	0.294	-	0.294
Title: System Engineering/Program Management ***Description:*** System Engineering and Program Management support for Material Handling Equipment ***FY 2017 Base Plans:*** System Engineering and Program Management support for Material Handling Equipment	-	-	0.200	-	0.200
Accomplishments/Planned Programs Subtotals	0.273	0.628	0.960	-	0.960

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Light Capacity Rough Terrain (LCRT): *Light Capacity Rough Terrain (LCRT) G41002*	14.392	27.982	2.307	0.846	3.153	17.999	18.391	17.759	20.240	Continuing	Continuing
• All Terrain Cranes: *All Terrain Cranes R06701*	-	-	65.285	-	65.285	8.935	17.632	31.477	38.163	Continuing	Continuing

Remarks

D. Acquisition Strategy

Develop specifications for LCRTF improvements, award contracts to produce test items for production verification testing. Testing LCRTF improvements to be performed using Army test facilities. Design lightweight armor solution for ATLAS using U.S. Army TARDEC's Center for Ground Vehicle Development and Integration. Test armored ATLAS at Aberdeen Proving Ground, MD. Procure RTCH Sling Load Attachment, obtain safety confirmation and conduct user demonstrations to valid

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H14 / *Materials Handling Equipment - Ed*

requirements. Develop additional capabilities for existing systems such as the LCRFT, RTCH and ATLAS. Award contracts with vehicle or attachment/technology OEMs to integrate existing commercial attachments/technologies onto the platforms to improve operator function and system usefulness. Testing will be conducted at Aberdeen Proving Grounds, MD.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H14 / *Materials Handling Equipment - Ed*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR + STTR	TBD	TBD : TBD	0.032	-		-		-		-		-	0	0.032	0
		Subtotal	0.032	-		-		-		-		-	0.000	0.032	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MHE Training Aids	SS/FFP	Kalmar Rt : Cibolo, TX	2.555	-		-		-		-		-	Continuing	Continuing	Continuing
RTCH Component Modernization	Various	TARDEC : Warren, MI	0.200	0.203	Jul 2015	-		-		-		-	0	0.403	0
Lightweight Armor for ATLAS II	MIPR	TARDEC : Warren, MI	0.350	-		-		-		-		-	0	0.350	0
Sling Load Attachment for RTCH	C/FFP	Kalmar RT Center : Cibolo, TX	0.100	-		-		-		-		-	0	0.100	0
Platform Safety	SS/FFP	JLG : Texas	0.000	-		0.330		0.466	Feb 2017	-		0.466	0	0.796	0
Work Tool Enhancement	Various	Various : Various	0.000	-		0.298		0.294	Mar 2017	-		0.294	0	0.592	0
		Subtotal	3.205	0.203		0.628		0.760		-		0.760	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Improvements for LCRTF for Tactical Operations	MIPR	TARDEC : Warren, MI	0.055	-		-		-		-		-	0	0.055	0
Lightweight Armor for ATLAS II	MIPR	TARDEC : Warren, MI	0.110	-		-		-		-		-	0	0.110	0
System Engineering/ Program Management	MIPR	TARDEC : Warren, MI	0.000	-		-		0.200	Dec 2016	-		0.200	0	0.200	0
		Subtotal	0.165	-		-		0.200		-		0.200	0.000	0.365	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H14 / *Materials Handling Equipment - Ed*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Lightweight Armor for ATLAS II	TBD	TBD : TBD	0.133	-		-		-		-		-	0	0.133	0
System Improvements for LCRTF for Tactical Operations	TBD	TBD : TBD	0.405	-		-		-		-		-	0	0.405	0
Investigate high speed towing for LCRTF	TBD	TBD : TBD	0.000	0.047		-		-		-		-	0	0.047	0
Testing of ATLAS II Wider Forklift	MIPR	Various : Various	0.000	0.023	Mar 2015	-		-		-		-	0	0.023	0
		Subtotal	0.538	0.070		-		-		-		-	0.000	0.608	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.940	0.273		0.628		0.960		-		0.960	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H14 / *Materials Handling Equipment - Ed*

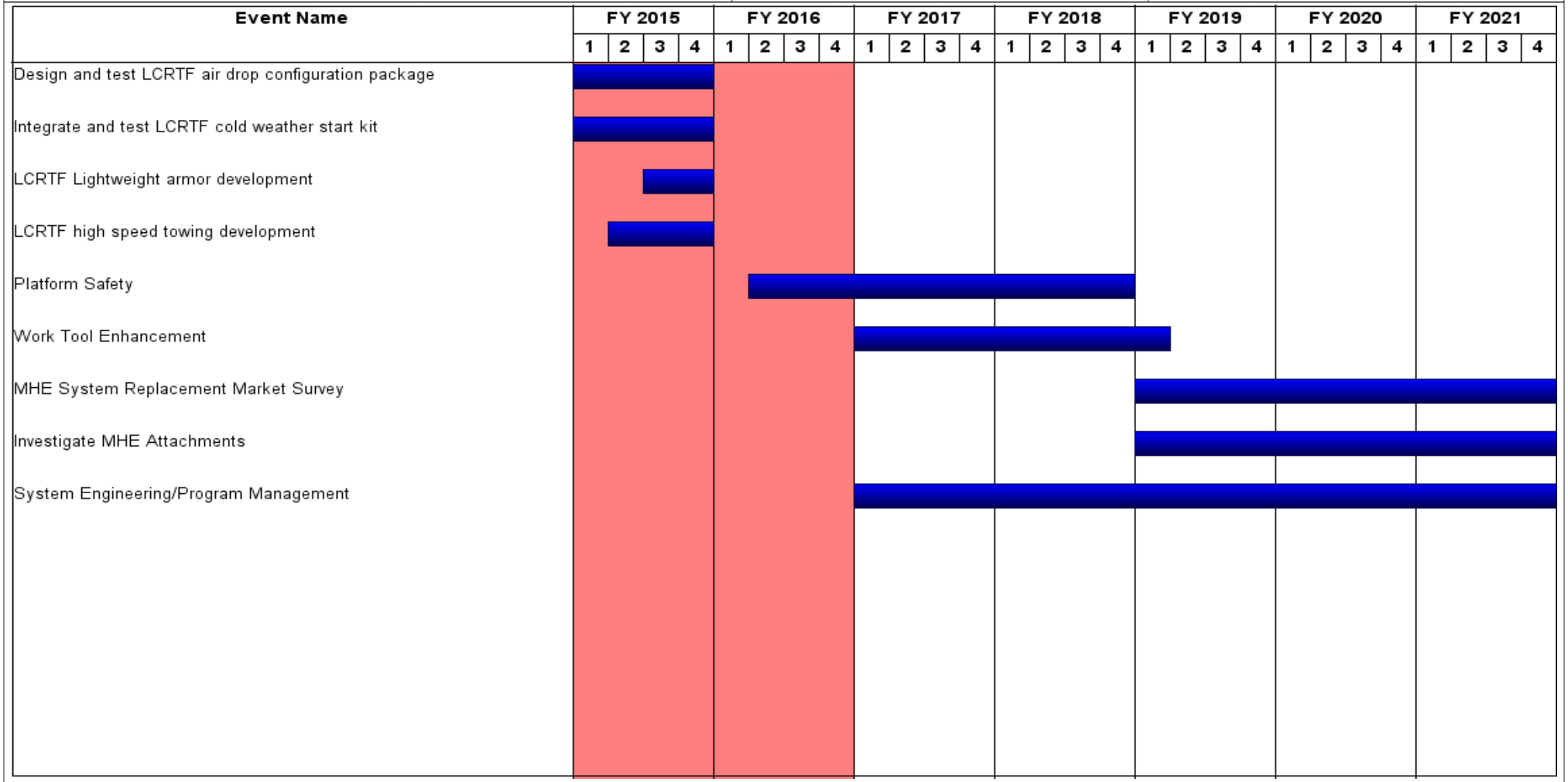

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H14 / *Materials Handling Equipment - Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Design and test LCRTF air drop configuration package	3	2013	4	2015
Integrate and test LCRTF cold weather start kit	1	2014	4	2015
LCRTF Lightweight armor development	3	2015	4	2015
LCRTF high speed towing development	2	2015	4	2015
Platform Safety	2	2016	4	2018
Work Tool Enhancement	1	2017	1	2019
MHE System Replacement Market Survey	1	2019	4	2021
Investigate MHE Attachments	1	2019	4	2021
System Engineering/Program Management	1	2017	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
L39: *Field Sustainment Support Ed*	-	1.623	1.849	3.712	-	3.712	3.028	2.128	2.907	2.985	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the Engineering and Manufacturing Development (EMD) of critical capabilities for cargo aerial delivery for identified theater distribution and services capability gaps, improve unit sustainability, and increase combat effectiveness. Project supports the demonstration of engineering development models and Type Classification of cargo parachutes, airdrop containers and other aerial delivery equipment to improve safety, effectiveness, and efficiency of airborne operations. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and the Army's Modular Force Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment by providing aerial delivery initiatives. These reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS), lift demands, the combat zone footprint, and costs for logistical support.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Advanced Low Velocity Airdrop System (ALVADS) - Light and Heavy	1.623	1.849	2.444	-	2.444
Description: ALVADS - Light and Heavy are capable of airdrop operations at an altitude down to 750-ft Above Ground Level (AGL) for ALVADS-L and 975-ft AGL for ALVADS-H, while retaining the objective altitude of 500-ft AGL for both with increased aircraft survivability, and improved accuracy. Light-Gross rigged weight of 2,520-22,000 lbs and Heavy-Gross rigged weight of 22,001-42,000 lbs. ***FY 2015 Accomplishments:*** Completed Design Validation (DV). Down selected to technically mature ALVADS assets for Developmental Testing (DT) and initiated DT. ***FY 2016 Plans:*** Conduct and complete DT and initiate Operational Testing (OT). ***FY 2017 Base Plans:*** Complete OT, prepare Milestone C documentation, and complete logistics deliverables. Obtain Milestone C decision and transition ALVADS into production.					
Title: Extracted High and Low High Speed Container Delivery System (EHLSCDS)	-	-	1.268	-	1.268

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Provides a high speed (230 knot) low altitude (375 A AGL) capability for up to eight Container Delivery Systems (CDS) to enhance aircraft and aircrew safety while improving accuracy and reducing dispersion for receiving ground units. ***FY 2017 Base Plans:*** Conduct Operational Testing (OT). Prepare Milestone C documentation and complete logistics deliverables.					
Accomplishments/Planned Programs Subtotals	1.623	1.849	3.712	-	3.712

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• MA7806: *Precision Airdrop, OPA 3, MA7806*	4.919	2.890	4.298	-	4.298	2.617	2.178	2.219	2.282	Continuing	Continuing
• 643804 K39: *Field Sustainment Support AD, 643804 K39*	0.514	1.875	2.629	-	2.629	2.261	2.351	1.714	1.761	Continuing	Continuing

Remarks

D. Acquisition Strategy

Accelerate product development and testing to transition into production.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	Various	PM FSS, Natick : Natick, MA	3.567	0.318	Oct 2014	0.400	Oct 2015	0.712	Oct 2016	-		0.712	0	4.997	Continuing
SBIR+STTR	TBD	Various : Various	0.129	-		-		-		-		-	0	0.129	0
		Subtotal	3.696	0.318		0.400		0.712		-		0.712	0.000	5.126	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ALVADS-L&H	Various	Various : Various	14.605	0.505	Jun 2015	0.600	Apr 2016	0.450	Nov 2016	-		0.450	0	16.160	Continuing
EHLSCDS	Various	Various : Various	0.000	-		0.100	Apr 2016	0.350	Nov 2016	-		0.350	0	0.450	0
		Subtotal	14.605	0.505		0.700		0.800		-		0.800	0.000	16.610	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EHLSCDS	Various	Various : Various	0.000	-		-		0.050	Jun 2017	-		0.050	0	0.050	0
ALVADS	Various	Various : Various	0.000	-		-		0.050	Jun 2017	-		0.050	0	0.050	0
		Subtotal	0.000	-		-		0.100		-		0.100	0.000	0.100	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EHLSCDS	Various	Yuma Proving Ground (YPG), AZ, AEC : AZ	10.080	-		-		0.600	Mar 2017	-		0.600	0	10.680	Continuing
ALVADS-L&H	Various	YPG, AZ/ OTC, NC : YPG, AZ/ OTC, NC	4.536	0.800	Jun 2015	0.749	Mar 2016	1.500	Mar 2017	-		1.500	0	7.585	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	14.616	0.800		0.749		2.100		-		2.100	0.000	18.265	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	32.917	1.623		1.849		3.712		-		3.712	0.000	40.101	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

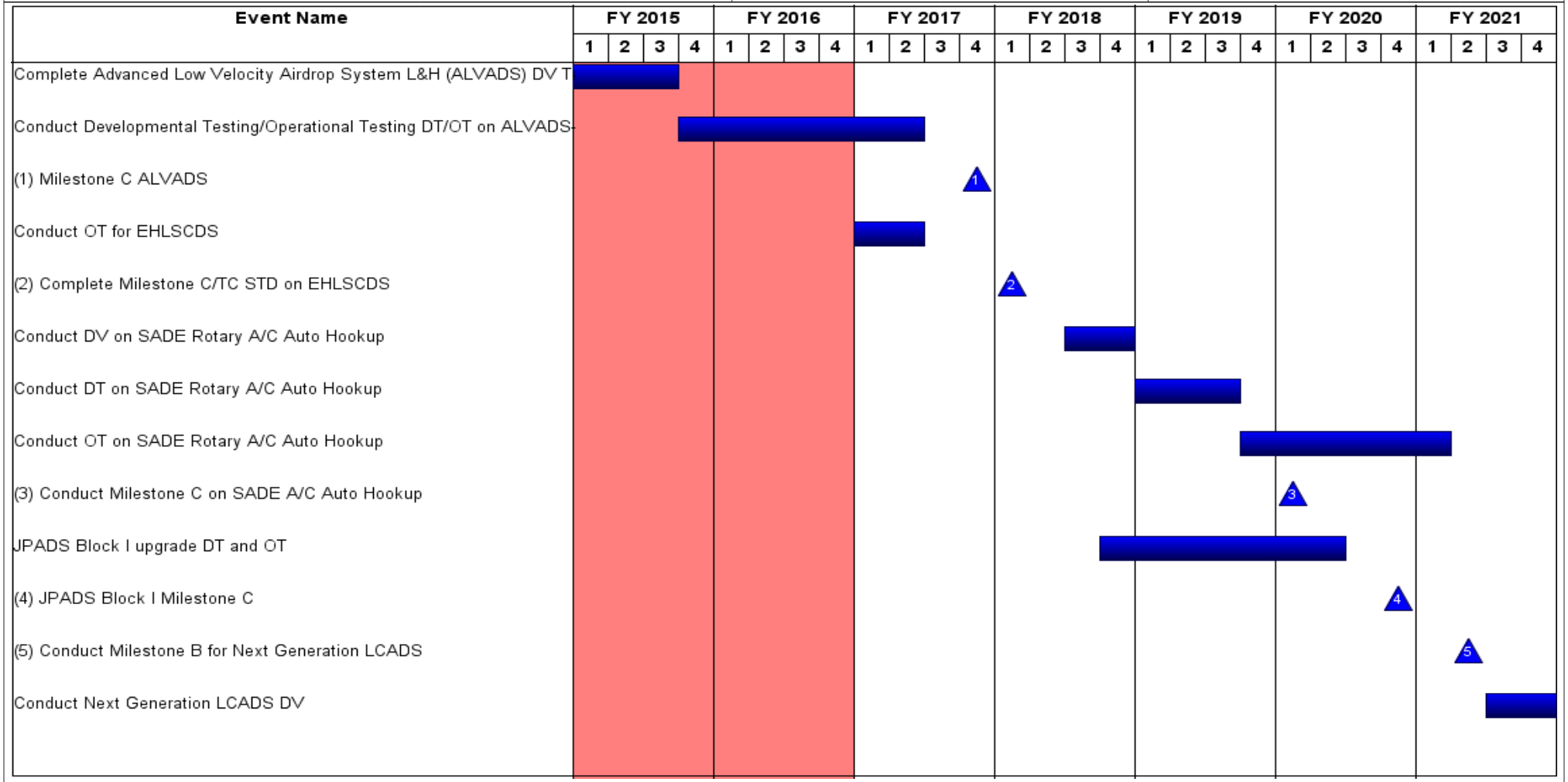

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Complete Advanced Low Velocity Airdrop System L&H (ALVADS) DV Testing	4	2014	3	2015
Conduct Developmental Testing/Operational Testing DT/OT on ALVADS-L&H	4	2015	2	2017
Milestone C ALVADS	4	2017	4	2017
Conduct OT for EHLSCDS	1	2017	2	2017
Complete Milestone C/TC STD on EHLSCDS	1	2018	1	2018
Conduct DV on SADE Rotary A/C Auto Hookup	3	2018	4	2018
Conduct DT on SADE Rotary A/C Auto Hookup	1	2019	3	2019
Conduct OT on SADE Rotary A/C Auto Hookup	4	2019	1	2021
Conduct Milestone C on SADE A/C Auto Hookup	1	2020	1	2020
JPADS Block I upgrade DT and OT	4	2018	2	2020
JPADS Block I Milestone C	4	2020	4	2020
Conduct Milestone B for Next Generation LCADS	2	2021	2	2021
Conduct Next Generation LCADS DV	3	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L41 / *Water And Petroleum Distribution - Ed*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
L41: *Water And Petroleum Distribution - Ed*	-	3.071	3.361	8.363	-	8.363	5.065	9.336	9.436	9.507	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides all services with ample supply of clean fuel and water. The Army has the mission to supply fuel for all land-based forces, including the Marines and the Air Force, and must supply bulk drinking water to the Soldiers. These Engineering and Manufacturing Development programs enable the Army to improve maneuver sustainment operations to meet the demands of the Stryker Brigade Combat Teams and the Future Force. The mission includes receiving and transferring petroleum from trucks, ships, pipelines and permanent and temporary storage facilities; moving petroleum from storage to and within corps and division areas; fuel quality surveillance testing; and dispensing in support of tactical operations, including rapid refueling of aircraft. The mission covers purification, storage, distribution, and quality control of water. The Army cannot fight without clean fuel and water. These Research and Development (R&D) missions support the development and enhancement of rapidly deployed Petroleum and Water equipment which enables the Army to achieve its vision by providing a highly mobile and self-sustaining system in hostile joint operations areas.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: 3K Tactical Water Purification System (TWPS). ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:*** Start fabrication of prototype 3K TWPS. Start development of Level II Technical Data Package (TDP). ***FY 2017 Base Plans:*** Develop in-house technical manual for Production Qualification Testing (PQT). Detailed design work for prototype. System design and development leading to Critical Design Review (CDR) in 2QFY18.	-	0.348	3.100	-	3.100
Title: Fuel System Supply Point (FSSP) Common Pump ***Description:*** Funding is provided for the following effort ***FY 2017 Base Plans:*** Finalize the Technical Data Package (TDP) for the common pump that operates at either 350 or 600 Gallons per Minute so that it is ready to use for procurement.	-	-	0.100	-	0.100
Title: Expeditionary Water Packaging System (EWPS).	0.311	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:*** Finalize and staff Milestone C program documents; Release Request for Proposal (RFP) and hold a Source Selection Evaluation Board (SSEB) to award EWPS production contract.					
Title: Small Unit Water Purifier ***Description:*** Funding is provided for the following effort. ***FY 2017 Base Plans:*** Requirements refinement and technology development.	-	-	0.169	-	0.169
Title: Modular Tactical Retail Refueling System (MTRRS) ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Initiate test, technical manuals and technical data package (drawing package). The technical data package will allow the Army to competitively procure the MTRRS and initiate prototype testing. ***FY 2016 Plans:*** Continue prototype testing from FY15. Refine technical manuals and technical data package (TDP) drawing package. Begin transistioning technical data to program manager for competitive procurement. Prepare Milestone C documentation and develop Request for Proposal (RFP). ***FY 2017 Base Plans:*** Complete Milestone C documentation and review. Complete supportability analyses. Complete Source Selection Evaluation Board and award production contract.	1.000	0.800	0.500	-	0.500
Title: Water Bison ***Description:*** Funding is provided for the following effort. ***FY 2017 Base Plans:*** Develop and release Request for Proposal (RFP). Develop and prepare Milestone B documentations. Achieve Milestone B. Develop contract language in preparation for FY18 award.	-	-	0.800	-	0.800
Title: Early Entry Fluid Distribution System (E2FDS).	1.760	2.213	2.001	-	2.001

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:*** Achieve Milestone B approval. Release RFP for Engineering and Manufacturing Development (EMD) contract. Source Selection Evaluation Board (SSEB) for EMD contract. Award EMD contract. ***FY 2016 Plans:*** Complete initial design of E2FDS. Initiate the Critical Design Review of the E2FDS prototype. Initiate fabrication of prototypes for testing under EMD phase. ***FY 2017 Base Plans:*** Complete Product Verification Testing (PVT) for both systems. Collect and begin analyzing test data to inform an FY18 Fair Opportunity Decision. Conduct early supportability analyses, and evaluate draft Operator manuals delivered by both contractors.					
Title: Petroleum Expeditionary Analysis Kit (PEAK) ***Description:*** Funding is provided for the following effort. ***FY 2017 Base Plans:*** Establish new integrated product team for the development initial draft documentation and preparation for entry into Milestone B. Initiate new market investigations for potential commercial solutions that can address the identified requirements gap. Prepare the preliminary draft of the performance specification for EMD phase.	-	-	0.500	-	0.500
Title: Army Fuel Automated Management System (AFAMS) Tank Gauging ***Description:*** Funding is provided for the following effort. ***FY 2017 Base Plans:*** Continue development and integration of sensors into fuel storage systems to report fuel levels to the AFAMS system.	-	-	0.426	-	0.426
Title: Modular Fuel System (MFS) ***Description:*** Funding is provided for the following effort. ***FY 2017 Base Plans:***	-	-	0.100	-	0.100

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Complete Initial Operational Test and Evaluation (IOT&E) to include the Pump Rack Module (PRM) and 2 different models of the Tank Rack Module (TRM).					
Title: Bulk Petroleum Trailers ***Description:*** Funding is provided for the following effort. ***FY 2017 Base Plans:*** Conduct market research and provide engineering support for the Cost-Benefit Analysis (CBA) and Capabilities Development Document (CDD) generation.	-	-	0.167	-	0.167
Title: Pipeline Trace Tool ***Description:*** Funding is provided for the following effort. ***FY 2017 Base Plans:*** Mature a pipeline trace tool software developed under a Small Business Innovative Research (SBIR) contract so that it meets end user requirements and can be used on army networks. Conduct user juries and incorporate feedback. Validate and verify the software, and obtain a certificate of network worthiness.	-	-	0.500	-	0.500
Accomplishments/Planned Programs Subtotals	3.071	3.361	8.363	-	8.363

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0603804/K41: *RDTE, Logistics and Engineer Equipment - Advanced Development*	3.409	3.764	3.662	-	3.662	4.773	-	-	-	Continuing	Continuing
• MA6000: *OPA 3, Distribution Systems, Petroleum & Water*	40.692	35.381	42.656	78.240	120.896	48.687	52.915	46.589	46.057	Continuing	Continuing

Remarks

D. Acquisition Strategy

Develop engineering prototypes for the 3K Tactical Water Purification System (3K TWPS), Modular Tactical Retail Refueling System (MTRRS), Early Entry Fluid Distribution System (E2FDS) and select Non-Development Item(NDI) based on market surveys and proposals from industry. Based on market research, will award either competitive or sole source contracts. A Make/Buy analysis will be conducted for MTRRS to determine if it can be manufactured economically at an Army Arsenal.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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The Pipeline Trace Tool developed under a Small Business Innovative Research (SBIR) contract will be matured by Army software developers so it can be released on Army networks.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L41 / *Water And Petroleum Distribution - Ed*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	TBD	TBD : TBD	0.062	-		-		-		-		-	0	0.062	0
		Subtotal	0.062	-		-		-		-		-	0.000	0.062	0.000

Remarks

not applicable

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Petroleum Expeditionary Analysis Kit (PEAK)	Various	TARDEC : Warren, MI	0.000	-		-		0.500	Jan 2017	-		0.500	0	0.500	Continuing
Small Unit Water Purifier	Various	TARDEC : Warren, MI	0.000	-		-		0.169	Jan 2017	-		0.169	0	0.169	Continuing
Expeditionary Water Packaging System (EWPS)	Various	TARDEC : Warren, MI	0.960	0.311		-		-		-		-	0	1.271	Continuing
3K Tactical Water Purification System (3K TWPS)	MIPR	TARDEC : Warren, MI	0.638	-		0.029	Feb 2016	1.800	Jun 2017	-		1.800	0	2.467	Continuing
3K Tactical Water Purification System (3K TWPS)	Various	NFESC : Pt. Hueneme, CA	0.220	-		0.150	Mar 2016	-		-		-	0	0.370	Continuing
Early Entry Fluid Distribution System (E2FDS)	C/FFP	TBD : TBD	0.000	0.962		1.800	Jul 2016	-		-		-	0	2.762	Continuing
Modular Tactical Retail Refueling System (MTRRS)	MIPR	TARDEC : Warren, MI	1.397	0.900		0.350	Mar 2016	-		-		-	0	2.647	Continuing
Tank Gauging in Collapsible and Hard Wall Tanks (AFAMS)	C/FFP	TACOM : Warren, MI	0.000	-		-		0.654	Dec 2016	-		0.654	0	0.654	0
		Subtotal	3.215	2.173		2.329		3.123		-		3.123	0.000	10.840	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
3K Tactical Water Purification System (3K TWPS)	MIPR	TARDEC : Warren, MI	0.000	-		-		0.694	Jan 2017	-		0.694	0	0.694	0
3K Tactical Water Purification System (3K TWPS)	MIPR	NFESC : Port Hueneme,CA	0.000	-		-		0.300	Jan 2017	-		0.300	0	0.300	0
Water Bison	MIPR	TARDEC : Warren, MI	0.000	-		-		0.800	Jan 2017	-		0.800	0	0.800	0
Early Entry Fluid Distribution System (E2FDS)	MIPR	TARDEC : Warren, MI	0.000	0.898		0.382	Mar 2016	1.000	Dec 2016	-		1.000	0	2.280	Continuing
Mobile Tactical Retail Refueling System (MTRRS)	MIPR	TARDEC : Warren, MI	0.000	-		-		0.500	Dec 2016	-		0.500	0	0.500	0
Tank Guaging in Collapsible and Hard Wall Tanks (AFAMS)	MIPR	TARDEC : Warren, MI	0.000	-		-		0.078	Dec 2016	-		0.078	0	0.078	0
Common Pump	MIPR	TARDEC : Warren, MI	0.000	-		-		0.100	Dec 2016	-		0.100	0	0.100	0
Bulk Petroleum Trailers	MIPR	TARDEC : Warren, MI	0.000	-		-		0.167	Dec 2016	-		0.167	0	0.167	0
Pipeline Trace Tool	MIPR	TARDEC : Warren, MI	0.000	-		-		0.500	Dec 2016	-		0.500	0	0.500	0
		Subtotal	0.000	0.898		0.382		4.139		-		4.139	0.000	5.419	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
3K Tactical Water Purification System (3K TWPS)	MIPR	TARDEC : Warren, MI	0.300	-		0.200	Apr 2016	-		-		-	0	0.500	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Modular Tactical Retail Refueling System (MTRRS)	Various	Yuma : Yuma Proving Ground, AZ	0.000	-		0.450	Mar 2016	-		-		-	0	0.450	Continuing
Early Entry Fluid Distribution System (E2FDS)	MIPR	Aberdeen Proving Ground : APG, MD	0.000	-		-		1.001	Dec 2016	-		1.001	0	1.001	0
Modular Fuel System (MFS)	MIPR	Aberdeen Proving Ground : APG, MD	0.000	-		-		0.100	Dec 2016	-		0.100	0	0.100	0
		Subtotal	0.300	-		0.650		1.101		-		1.101	0.000	2.051	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.577	3.071		3.361		8.363		-		8.363	0.000	18.372	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

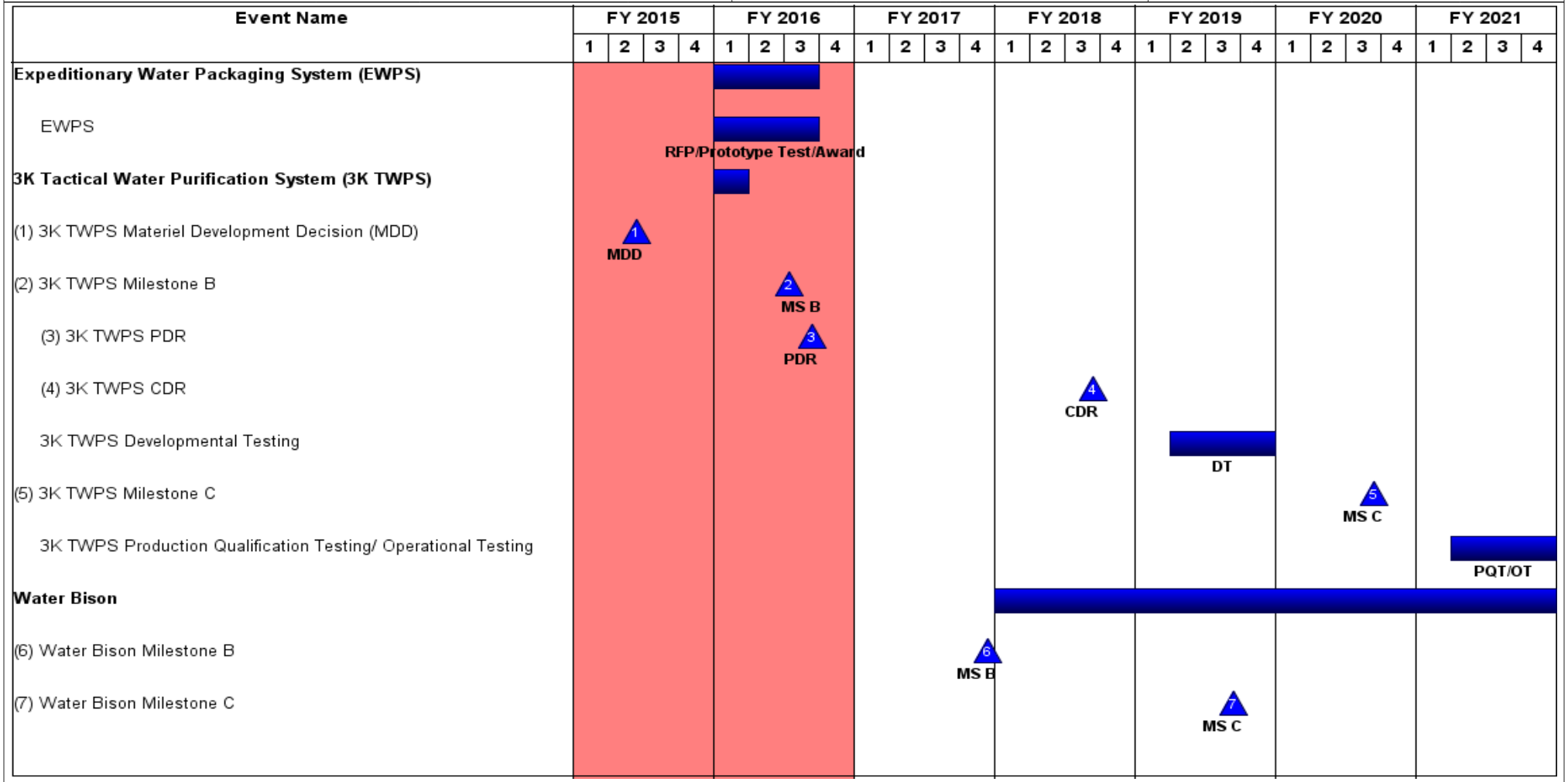

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

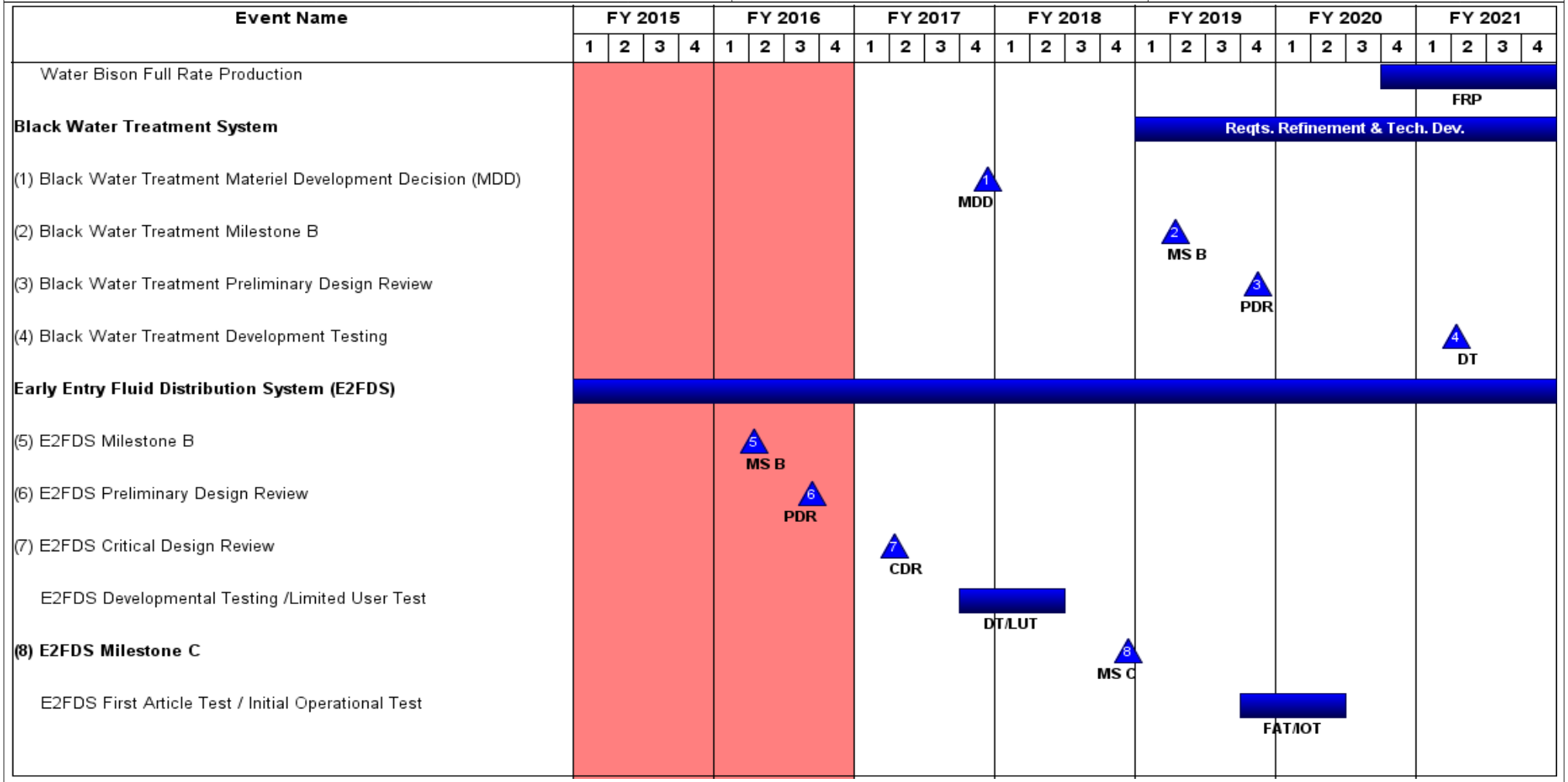

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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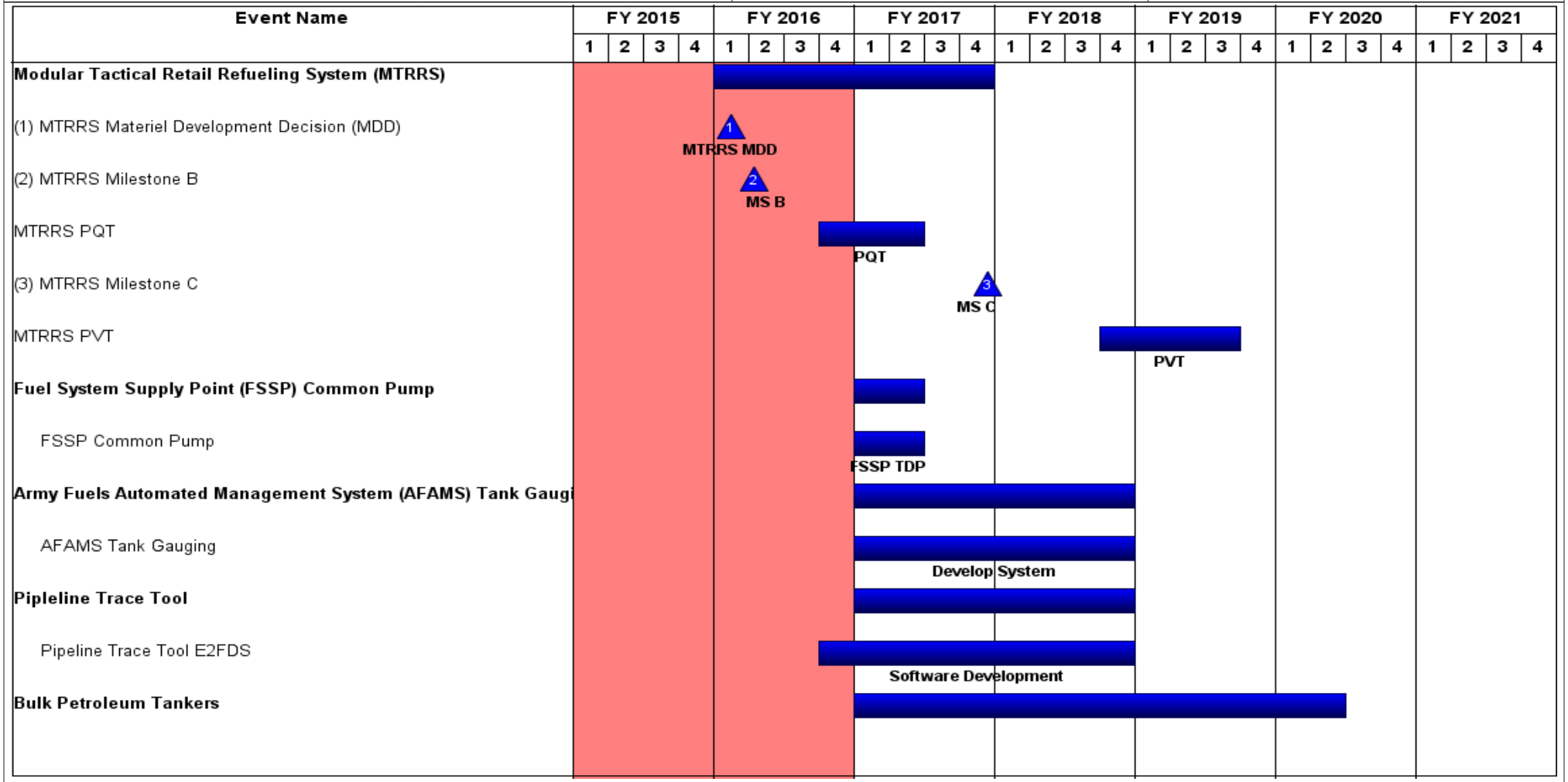

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

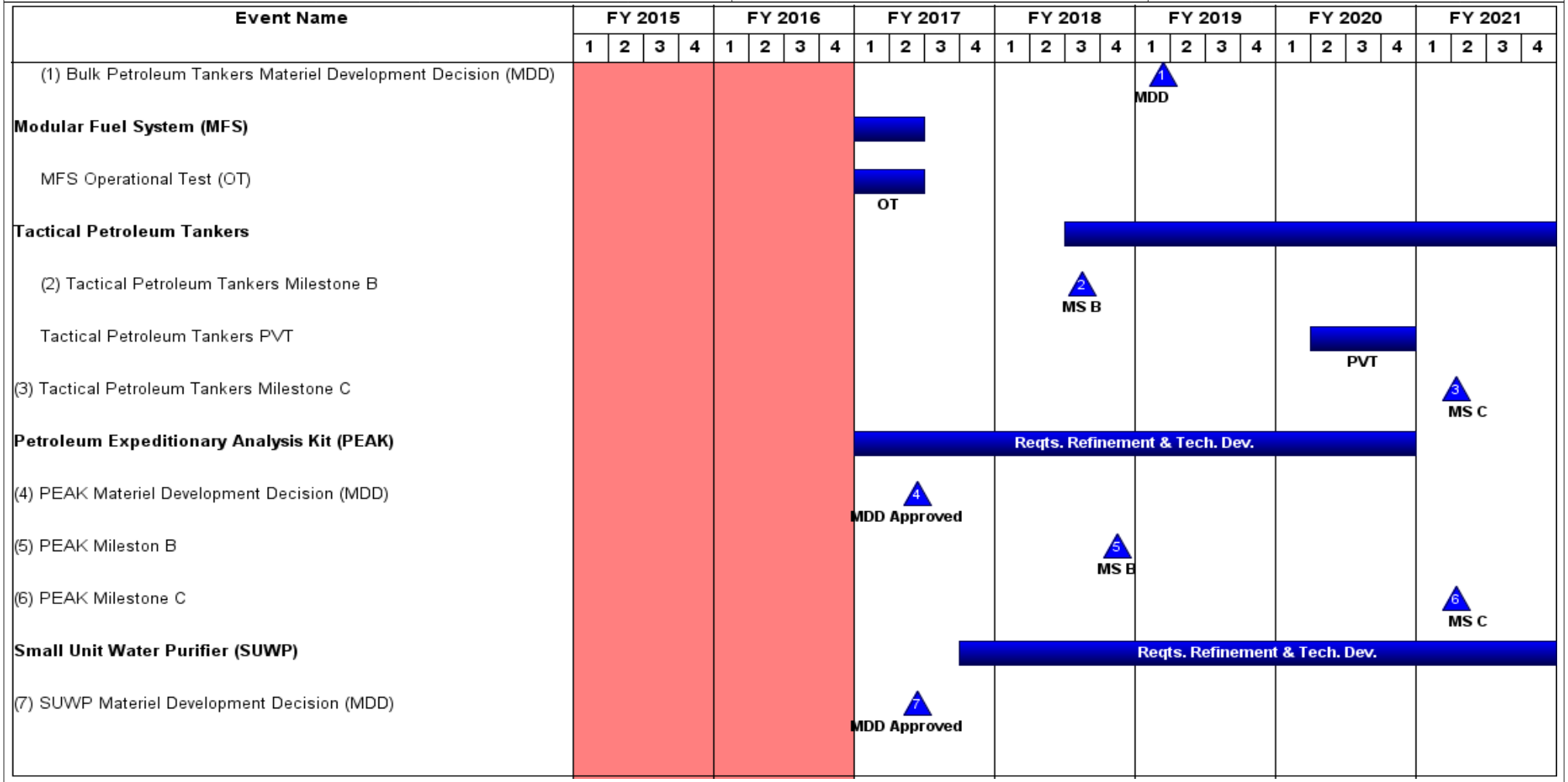

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

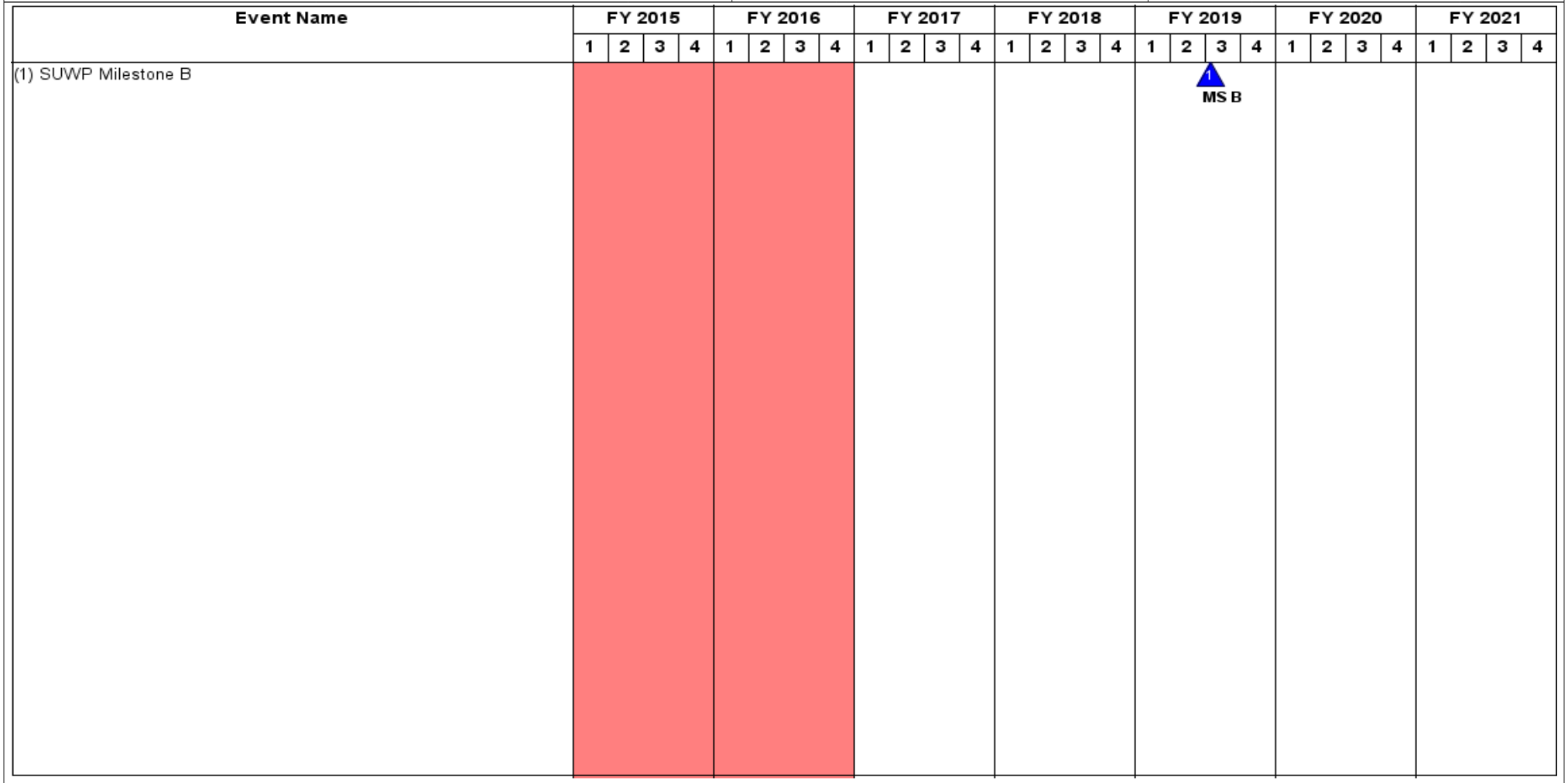

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Expeditionary Water Packaging System (EWPS)	1	2016	3	2016
EWPS	1	2016	3	2016
3K Tactical Water Purification System (3K TWPS)	1	2016	1	2016
3K TWPS Materiel Development Decision (MDD)	2	2015	2	2015
3K TWPS Milestone B	3	2016	3	2016
3K TWPS PDR	3	2016	3	2016
3K TWPS CDR	3	2018	3	2018
3K TWPS Developmental Testing	2	2019	4	2019
3K TWPS Milestone C	3	2020	3	2020
3K TWPS Production Qualification Testing/ Operational Testing	2	2021	2	2022
Water Bison	1	2018	4	2024
Water Bison Milestone B	4	2017	4	2017
Water Bison Milestone C	3	2019	3	2019
Water Bison Full Rate Production	4	2020	4	2024
Black Water Treatment System	1	2019	4	2021
Black Water Treatment Materiel Development Decision (MDD)	4	2017	4	2017
Black Water Treatment Milestone B	2	2019	2	2019
Black Water Treatment Preliminary Design Review	4	2019	4	2019
Black Water Treatment Development Testing	2	2021	4	2021
Early Entry Fluid Distribution System (E2FDS)	1	2015	4	2023
E2FDS Milestone B	2	2016	2	2016
E2FDS Preliminary Design Review	3	2016	3	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
E2FDS Critical Design Review	2	2017	2	2017
E2FDS Developmental Testing /Limited User Test	4	2017	2	2018
E2FDS Milestone C	4	2018	4	2018
E2FDS First Article Test / Initial Operational Test	4	2019	2	2020
Modular Tactical Retail Refueling System (MTRRS)	1	2016	4	2017
MTRRS Materiel Development Decision (MDD)	1	2016	1	2016
MTRRS Milestone B	2	2016	2	2016
MTRRS PQT	4	2016	2	2017
MTRRS Milestone C	4	2017	4	2017
MTRRS PVT	4	2018	3	2019
Fuel System Supply Point (FSSP) Common Pump	1	2017	2	2017
FSSP Common Pump	1	2017	2	2017
Army Fuels Automated Management System (AFAMS) Tank Gauging	1	2017	4	2018
AFAMS Tank Gauging	1	2017	4	2018
Pipleline Trace Tool	1	2017	4	2018
Pipeline Trace Tool E2FDS	4	2016	4	2018
Bulk Petroleum Tankers	1	2017	2	2020
Bulk Petroleum Tankers Materiel Development Decision (MDD)	1	2019	1	2019
Modular Fuel System (MFS)	1	2017	2	2017
MFS Operational Test (OT)	1	2017	2	2017
Tactical Petroleum Tankers	3	2018	2	2022
Tactical Petroleum Tankers Milestone B	3	2018	3	2018
Tactical Petroleum Tankers PVT	2	2020	4	2020
Tactical Petroleum Tankers Milestone C	2	2021	2	2021
Petroleum Expeditionary Analysis Kit (PEAK)	1	2017	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PEAK Materiel Development Decision (MDD)	2	2017	2	2017
PEAK Mileston B	4	2018	4	2018
PEAK Milestone C	2	2021	2	2021
Small Unit Water Purifier (SUWP)	4	2017	4	2024
SUWP Materiel Development Decision (MDD)	2	2017	2	2017
SUWP Milestone B	3	2019	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L43 / *ENGINEER SUPPORT EQUIPMENT - ED*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
L43: *ENGINEER SUPPORT EQUIPMENT - ED*	-	0.553	0.870	2.445	-	2.445	3.642	1.586	0.894	3.242	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This project supports development, demonstration, testing and evaluation within the Combat Engineer and Construction Support Equipment arena. These items include critical life support equipment such as diving, fire fighting, fire suppression, urban operations, breathable air compressors, and emergency and recovery sets along with engineer safety and special unit support equipment. The Combat Engineer and Construction equipment consists of the Surveying, Firefighting Individual Requirements Equipment Support (FIRES), Urban Search and Rescue (USR), Fire Protection Equipment Type I, II and III, Tactical Fire Fighting Truck Tools (TFTT), Family of Electrical Personal Protective Equipment (FoEPPE) Family of Power Utility Kits (FoPUK), Distribution Utility Construction Kits (DUCT) and Soldier Portable Kits, Lineman's Tool Kit, Concrete and Masonry, Electricians, Plumbers, Pipefitters, Family of Light Sets (FoLS), Diving Equipment, Surface Swimmer Support Sets, Surface Supplied Diving Set, procurement of new Technical/Special Tools, Pioneer Support Set, and the Pioneer Land Clearing and Building Erection Set. Funding will support the procurement of market samples and testing for Soldier Portable SKO, and critical life support equipment such as the Deep Sea Set, Underwater Construction Set, Closed Circuit Scuba Set, Supervisor Propulsion Emergency and Recovery SCUBA (SPEaRS), Divers' Supplemental Issue Set(DSIS), Vertical Skills Engineer Construction Kit (VSECK), and Family of Boats and Motors (FOBAM). All of these programs are in the Engineering and Manufacturing Development Phase.

BUDGET ITEM JUSTIFICATION: These systems provide state-of-the-art deployable, critical life support and combat engineer and construction equipment along with engineer safety and special unit support equipment supporting the joint warfighter. These programs will minimize transportation requirements and reduce the logistical footprint by eliminating obsolete equipment and reducing the number of programs. Funding shall allow for development of dual use systems that support wartime use by soldiers to include Special Forces and peacetime operations that include national disaster relief and homeland security operations. Much of this equipment has an inherent short Economic Useful Life (EUL). Investments used to revise, update and obtain equipment within this portfolio has resulted in reductions in footprint, and increases in safety, effectiveness, and readiness.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Family of Boats and Motors (FOBAM)	0.553	0.375	-	-	-
Description: Development of various Assault Boats and Outboard Motors					
FY 2015 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L43 / *ENGINEER SUPPORT EQUIPMENT - ED*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Purchase and Test the Rigid Inflatable Boat ***FY 2016 Plans:*** Support for logistics support plans and Full Rate Production Decision (Milestone C, Type Classification, Full Material Release)					
Title: Supervisory Propulsion, Emergency and Recovery Set (SPEARS) ***Description:*** Market Research for the SPEARS ***FY 2017 Base Plans:*** Documentation preparation and market research.	-	-	0.350	-	0.350
Title: Engineering and Quality Assurance ***Description:*** Engineering and Quality Assurance of engineering SKOs ***FY 2016 Plans:*** Engineering Spt- 75K for Boats, Motors, Diving; 200K for Soldier Portable QA Support- 25K for Boats, Motors, Diving; 100K for Soldier Portable	-	0.245	-	-	-
Title: Vertical Skills Engineer Construction Kit (VSECK) ***Description:*** Research, Development, and Testing of Vertical Skills Engineer Construction Kit (VSECK) ***FY 2016 Plans:*** Procure market samples for Type 1 through Type 6 kits	-	0.250	-	-	-
Title: Engineer Safety and Special Unit Support Systems ***Description:*** Conduct Market Research, Develop, and Initiate procurement activities for conceptual Engineer Safety and Special Unit Systems to include but not limited to Family of Power Utility Kits (FoPUK). ***FY 2017 Base Plans:*** Conduct Market Research, Develop, and Initiate procurement activities for conceptual Engineer Safety and Special Unit Systems to include but not limited to Family of Power Utility Kits (FoPUK).	-	-	0.750	-	0.750
Title: Engineer Combat and Construction Sets	-	-	1.345	-	1.345

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L43 / *ENGINEER SUPPORT EQUIPMENT - ED*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Conduct Market Research, Develop and Procure conceptual Engineer Combat and Construction Sets to include but not limited to Urban Search and Rescue (USR). ***FY 2017 Base Plans:*** Conduct Market Research, Develop and Procure conceptual Engineer Combat and Construction Sets to include but not limited to Urban Search and Rescue (USR).					
Accomplishments/Planned Programs Subtotals	0.553	0.870	2.445	-	2.445

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPA 3 R70001: *OPA 3 R70001, Family of Engineering Combat and Construction Sets*	41.967	34.544	29.384	9.789	39.173	29.764	34.490	31.320	29.991	Continuing	Continuing
• OPA 3 R12001: *OPA 3 R12001, Family of Boats and Motors*	-	8.429	3.171	0.280	3.451	4.302	5.966	4.199	2.168	Continuing	Continuing

Remarks

D. Acquisition Strategy

Progression of Programs will be developed by the completion of the Initial Capabilities Document, Capability Development Document, Capability Production Document, and Description For Purchase continuing into Low Rate Initial Production. Modernization and Optimization of existing tools and testing of market samples will progress from Engineering and Manufacturing Development (EMD) and transition into production.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L43 / *ENGINEER SUPPORT EQUIPMENT - ED*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM SKOT : Warren, MI	0.000	-		0.050	Oct 2015	0.160	Oct 2016	-		0.160	0	0.210	0
		Subtotal	0.000	-		0.050		0.160		-		0.160	0.000	0.210	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Rigid Inflatable Boats test articles	MIPR	TBS : TBS	0.000	0.373	Dec 2014	0.375	Mar 2016	-		-		-	Continuing	Continuing	Continuing
Market Samples of Vertical Skills Engineer Construction Kit (VSECK)	MIPR	TBS : TBS	0.120	-		0.150	Jan 2016	-		-		-	Continuing	Continuing	Continuing
Market Samples for Supervisory, Propulsion, Emergency and Recovery Set (SPEARS)	MIPR	TBS : TBS	0.000	-		-		0.263	Nov 2017	-		0.263	Continuing	Continuing	Continuing
Conduct Market Research for Urban Search and Rescue	MIPR	TBS : TBS	0.000	-		-		0.985	Nov 2016	-		0.985	0	0.985	0
Conduct Market Research for Family of Power Utility Kits (FoPUK)	MIPR	TBS : TBS	0.000	-		-		0.540	Jan 2017	-		0.540	0	0.540	0
		Subtotal	0.120	0.373		0.525		1.788		-		1.788	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Quality Assurance of engineering	MIPR	ECBC/ARDEC : Rock Island, IL	0.278	-		0.210		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L43 / *ENGINEER SUPPORT EQUIPMENT - ED*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SKOs (Soldier Portable - ECACS)															
Engineering and Quality Assurance (Boats and Motors)	MIPR	ECBC : Rock Island, IL	0.200	0.080		0.035	Nov 2015	-		-		-	Continuing	Continuing	Continuing
Engineering and Quality Assurance (ES&SUS)	MIPR	ECBC/ARDEC : Rock Island, IL	0.000	-		-		0.110	Oct 2016	-		0.110	Continuing	Continuing	0
Engineering and Quality Assurance (US&R)	MIPR	ECBC/ARDEC : Rock Island, IL	0.000	-		-		0.300	Oct 2016	-		0.300	Continuing	Continuing	0
Engineer and Quality Assurance Support (SPEARS)	MIPR	ECBC/ARDEC : Rock Island, IL	0.000	-		-		0.087	Oct 2016	-		0.087	0	0.087	0
		Subtotal	0.478	0.080		0.245		0.497		-		0.497	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing of Rigid Inflatable Boat	MIPR	NAVSEA : VA	0.625	0.100	Mar 2015	-		-		-		-	Continuing	Continuing	Continuing
Testing of VSECK	TBD	TBS : TBS	0.000	-		0.050	Jan 2016	-		-		-	0	0.050	0
		Subtotal	0.625	0.100		0.050		-		-		-	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.223	0.553		0.870		2.445		-		2.445	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L43 / *ENGINEER SUPPORT EQUIPMENT - ED*

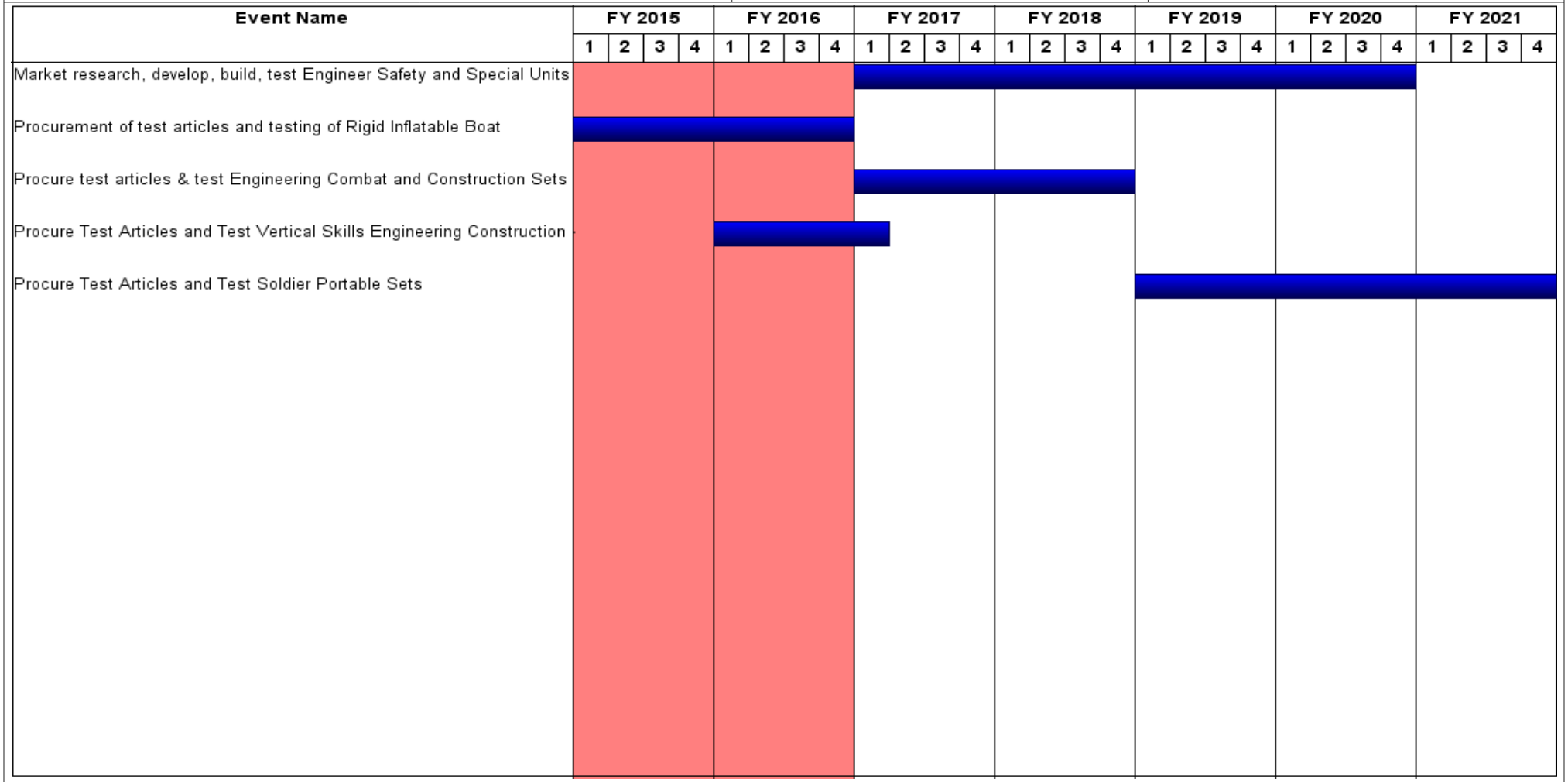

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L43 / *ENGINEER SUPPORT EQUIPMENT - ED*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Market research, develop, build, test Engineer Safety and Special Units Systems	1	2017	4	2020
Procurement of test articles and testing of Rigid Inflatable Boat	1	2015	4	2016
Procure test articles & test Engineering Combat and Construction Sets	1	2017	4	2018
Procure Test Articles and Test Vertical Skills Engineering Construction Kit	1	2016	1	2017
Procure Test Articles and Test Soldier Portable Sets	1	2019	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L46 / *Maintenance Support Equipment*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
L46: *Maintenance Support Equipment*	-	0.964	1.064	1.886	-	1.886	1.881	1.722	1.767	1.815	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Mobile Maintenance Equipment provides state of the art, deployable, vehicle-mounted and containerized shelter tool systems supporting the Joint warfighter. These systems are equipped with industrial quality tools required for Two Level Maintenance that reduce common tool redundancy, provide tool standardization, minimize transportation requirements, reduces logistical footprint, and are backed by a Lifetime Warranty/Replacement Program which reduces sustainment costs. This is accomplished by employing a system of systems approach to maintenance acquisition. The system of systems approach builds a maintenance capability upon each system, allowing a logical and natural approach to the Army's overall two level maintenance strategy. These inter-connected systems distributed throughout the Army at multiple levels and echelons provide a holistic repair capability in all scenarios and environments. These systems provide the Maintenance and Combat Commanders an unprecedented capability to repair wheeled, tracked, aviation, ground support and weapons systems on site at one location at one time. This approach to maintenance acquisition increases efficiencies and supports the current force while providing modular configurations designed to meet the specific needs of the Army maintainer in today's complex transforming environment. All of these programs are in the Engineering and Manufacturing Development Phase.

BUDGET ITEM JUSTIFICATION: The need to develop and maintain a System of System maintenance approach is critical due to the growing complexity of today's military equipment, operational tempo, modularity, and current and evolving Tactics Techniques and Procedures (TTPs). The individual maintenance systems are comprehensive, interconnected and capable of solving and repairing any maintenance problems. The System of Systems approach does not advocate specific tools, methods or practices; instead it seeks to promote a streamlined comprehensive set of systems for solving maintenance challenges where the interactions of doctrine, technology, time and tactics techniques and procedures are the primary drivers. Funding for projects shall include test article procurement and testing of soldier portable maintenance SKOs, load banks and refrigeration tool kit; investigation of new technologies for next generation mobile maintenance equipment shop sets including the Shop Equipment Welding (SEW) and Shop Equipment Contact Maintenance (SECM); development of additional SATS maintenance modules, Special Tools initiatives; packaging development; and technical support for emerging JCIDS materiel requirements documents. Upgrades to existing shelter mounted systems to include a 3-D printing/additive manufacturing capability as well as use of lower cost set components. Modernization upgrades to increase effectiveness while improving efficiency, reliability and maintainability while supporting emerging Army systems to include the Joint Light Tactical Vehicle (JLTV).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Next Generation Shop Equipment, Welding (SEW)	-	0.730	0.965	-	0.965

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Develop and Test new components of Shop Equipment, Welding ***FY 2016 Plans:*** Buying Production Representative Sample ***FY 2017 Base Plans:*** Testing, Logistics Demonstration and Validation					
Title: Load Banks ***Description:*** Engineering Support and QA Support for Load Banks ***FY 2016 Plans:*** Engineering Support and QA Support for Load Banks	-	0.120	-	-	-
Title: Mobile Maintenance Equipment Shop Set ***Description:*** Modernization / Redesign efforts of maintenance support equipment in support of technological advances, environmental/safety constraints and to support emerging systems ***FY 2015 Accomplishments:*** Next generation Ordnance SKO ***FY 2016 Plans:*** Limited modeling on ARSS shelter, additive manufacturing for MWMSS ***FY 2017 Base Plans:*** Obtain shelter and tools for next generation ARSS, develop additive manufacturing capability for MWMSS, market research on Next Generation Generator, Crane and other components for FRS	0.449	0.070	0.455	-	0.455
Title: Support for Requirements Generation ***Description:*** Support for requirements generation of future SKOs ***FY 2015 Accomplishments:*** Document development supporting future requirements SKOs	0.104	-	-	-	-
Title: Special Tools Initiative	0.300	-	0.043	-	0.043

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: Develop Rapid Deployment Sets, Kits, and Outfits (SKOs) - Special Tool Initiative and support to Tactical Wheeled Vehicles and other vehicle platforms ***FY 2015 Accomplishments:*** Develop and test various Soldier Portable Tool Kits based on the maintenance requirements of current and future platforms. ***FY 2017 Base Plans:*** Market Research for Special Tools					
Title: Refrigeration Tool Kit (RTK) ***Description:*** Develop and Test RTK ***FY 2016 Plans:*** Develop RTK ***FY 2017 Base Plans:*** Conduct market research for RTK and buy test articles	-	0.144	0.263	-	0.263
Title: Packaging Support ***Description:*** Full Packaging Program Support and Packaging Data Management ***FY 2015 Accomplishments:*** Develop and Maintain Logistics Packaging, Packing and Palletization data ***FY 2017 Base Plans:*** Develop and Maintain Logistics Packaging, Packing and Palletization data	0.111	-	0.037	-	0.037
Title: Engineering Support ***Description:*** Engineering Support from ECBC ***FY 2017 Base Plans:*** Support to RDTE funded MMES efforts	-	-	0.123	-	0.123
Accomplishments/Planned Programs Subtotals	0.964	1.064	1.886	-	1.886

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPA 3 ML5345: *OPA 3 ML5345, Items Less Than $5.0M (MAINTENANCE EQUIPMENT)*	2.789	2.760	2.716	0.145	2.861	2.759	2.767	4.771	4.616	Continuing	Continuing
• OPA 3 G05301: *OPA 3 G05301, Mobile Maintenance Equipment Systems*	27.776	25.270	35.694	1.609	37.303	28.776	41.007	53.763	50.501	Continuing	Continuing

Remarks

D. Acquisition Strategy

Programs will progress from requirements generation through market research, development, market samples and testing. Efforts will support the two level maintenance concept utilizing commercial technologies and incorporating them into SKO to support next generation weapon and support systems.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L46 / *Maintenance Support Equipment*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	TBD	Various : Various	0.096	-		-		-		-		-	0	0.096	0
Program Management	MIPR	PM SKOT : Warren, MI	0.000	-		-		0.160	Oct 2016	-		0.160	0	0.160	0
		Subtotal	0.096	-		-		0.160		-		0.160	0.000	0.256	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Maintenance Support Equipment Life Cycle Configuration Analyses and ICD Development Support	MIPR	PM SKOT/ Army Test & Evaluation Command (ATEC)/ Combined Arms Support Command (CASCOM) : (IL, MI, MD, VA)	1.556	-		-		-		-		-	Continuing	Continuing	Continuing
Next Generation Shop Equipment Welding (SEW) concept design and development	MIPR	ECBC : Rock Island, IL	0.900	-		0.730	Feb 2016	0.965	Jan 2017	-		0.965	Continuing	Continuing	Continuing
Modernization/Redesign efforts of Truck/Trailer transported shelters for next generation systems	MIPR	ECBC : Rock Island, IL	1.211	0.449	Dec 2014	0.070	Feb 2016	0.295	Mar 2017	-		0.295	Continuing	Continuing	Continuing
Develop Rapid Deployment Sets, Kits, & Outfits - Special Tool Initiative.	MIPR	ECBC : Rock Island, IL	0.300	-		-		-		-		-	Continuing	Continuing	Continuing
Procure Ground Based Special Tools in support of Tactical Wheeled Vehicles	MIPR	PM SKOT : Harrison, MI	0.000	0.300	Jan 2016	-		0.043	Dec 2016	-		0.043	Continuing	Continuing	Continuing
Refrigeration Tool Kit (RTK)	MIPR	ECBC : Rock Island, IL	0.000	-		0.144	Jan 2016	0.263	Dec 2016	-		0.263	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L46 / *Maintenance Support Equipment*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	3.967	0.749		0.944		1.566		-		1.566	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Life Cycle Configuration Analyses & Support to Initial Capabilities Document Development	MIPR	PM SKOT Rock Island/ CASCOM / Maneuver Support Center (MANSCEN) : (IL, VA, MO)	0.743	0.104	Jan 2015	-		-		-		-	Continuing	Continuing	Continuing
Engineer and Quality Assurance in support of SKOs	MIPR	ECBC / ARDEC / PM SKOT : (IL, MI)	1.182	-		0.120	Feb 2016	0.123	Dec 2016	-		0.123	Continuing	Continuing	Continuing
Packaging Support	MIPR	ARDEC : Rock Island, IL	0.000	0.111	Jan 2015	-		0.037	Nov 2016	-		0.037	Continuing	Continuing	Continuing
		Subtotal	1.925	0.215		0.120		0.160		-		0.160	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.988	0.964		1.064		1.886		-		1.886	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

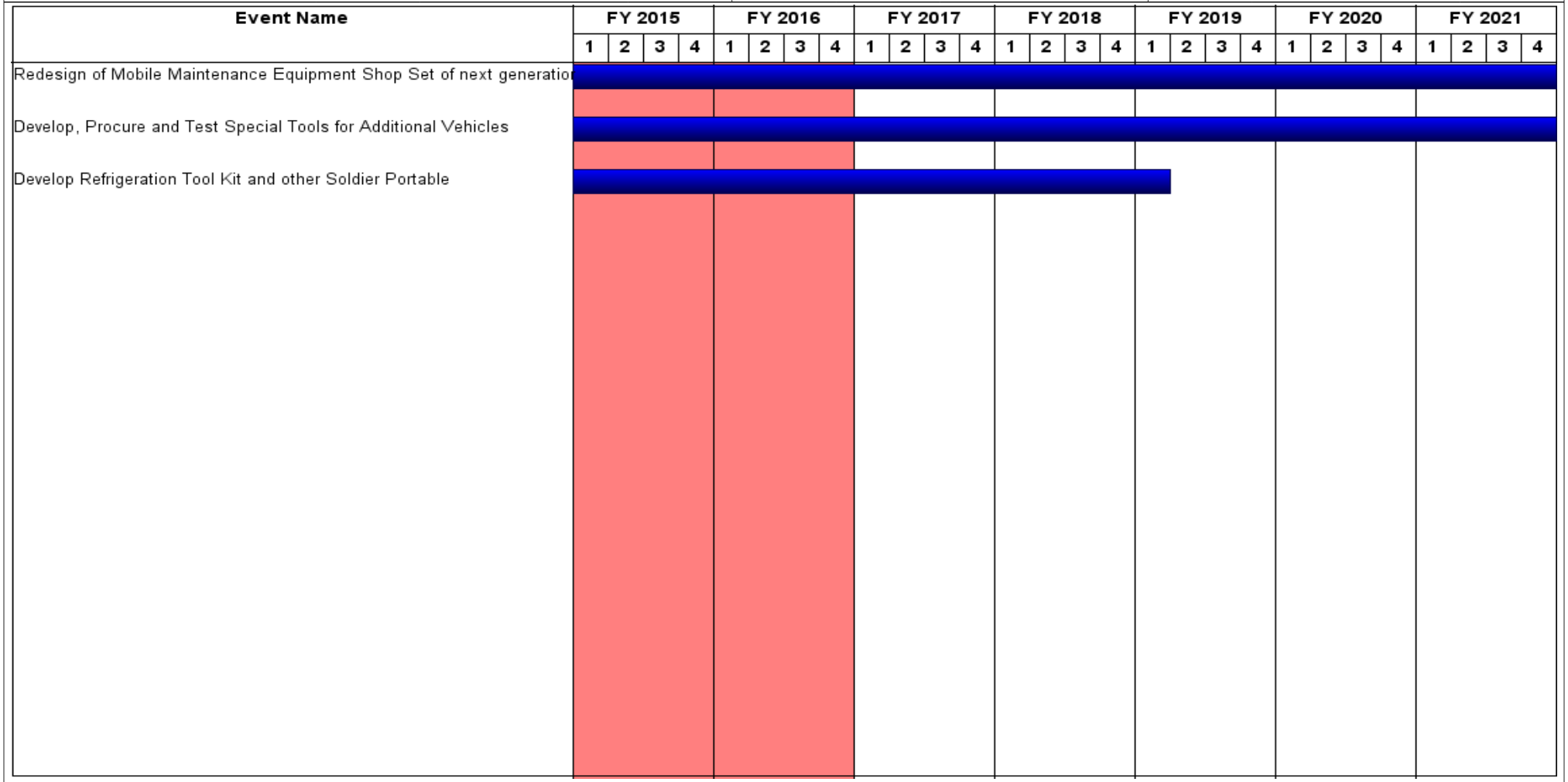

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Redesign of Mobile Maintenance Equipment Shop Set of next generation vehicle	1	2007	4	2021
Develop, Procure and Test Special Tools for Additional Vehicles	1	2015	4	2021
Develop Refrigeration Tool Kit and other Soldier Portable	1	2015	1	2019

Note

Modernization / Redesign efforts of Shop Equipment, Truck/Trailer Mounted Shelters for next generation of systems.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L47 / *Improved Environmental Control Units Ed*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
L47: *Improved Environmental Control Units Ed*	-	0.000	0.756	1.259	-	1.259	1.778	3.685	2.027	2.081	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Improved Environmental Control Units (IECU) program will provide updates that support the new generation of Environmental Control Units (ECUs) that use environmentally approved refrigerants, with zero Ozone-Depleting Chemicals (ODCs) to replace the current Military Standard (MIL-STD) Family of ECUs. The IECUs will provide improved cooling, heating and dehumidification to soldiers and materiel systems in combat, combat support and combat service support units. The IECUs are required to replace currently fielded environmental control units in order to comply with statutory and regulatory restrictions on the use of Class II ODCs (such as HCFC-22) and to improve the performance of military ECUs. They are form, fit and function replacements to the current MIL-STD ECUs. Technical improvements over existing military-standard ECUs will yield significant fuel and weight savings, reduction in scheduled maintenance and increased reliability. 9, 18, and 36K BTU/H IECUs: The 9, 18 and 36K BTU/H IECUs will be a replacement for the current MIL-STD-ECU variants. The new family of IECUs will utilize a new refrigerant which complies with mandated Environmental Protection Agency (EPA) requirements (non-global warming). FY16 and FY17 funding supports Advanced Concept Development Phase activities for the 9, 18, 36, and 60K IECU variants which include multiple trailer-mounted systems and shelter system integrations, as well as support of new ECU requirements coming from the Army Family of Soft Wall Shelters CDD. In addition, the field has identified an emerging requirement for an integrated fuel-fired heating/cooling system. These variants will further standardize cooling units in the field, enable cooling of larger shelters and structures, offer increased mobility, and may be used to cool multiple tents with one unit. FY16 and 17 funding also supports continued evaluation of IECUs and variants at Network Integration Evaluation (NIE) to support new operational concepts, and supports development of new ECU and refrigeration products. There are no FY15 base dollars.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Technology Development	-	0.100	0.400	-	0.400
Description: Concept Development for 9/18/36/60K BTUH Improved Environmental Control Unit (IECU), multiple trailer-mounted variants and integrated heating/cooling systems.					
FY 2016 Plans: Support continuing technology insertions and demonstration of prototypes for follow-on IECU variants.					
FY 2017 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Support continuing technology insertions and demonstration of prototypes for follow-on IECU variants.					
Title: Government System Test and Evaluation ***Description:*** Testing for prototype performance for the trailer mounted variants of the Improved Environmental Control Units (IECUs) and soft wall ECUs. ***FY 2016 Plans:*** Conduct performance tests on follow-on IECU systems. ***FY 2017 Base Plans:*** Conduct performance tests on follow-on IECU systems.	-	0.050	0.200	-	0.200
Title: Other Contract and Government Agency ***Description:*** Support engineering, logistics, and testing efforts for multiple trailer-mounted variants, soft wall ECUs, and integrated heating/cooling units. Support Engineering and Manufacturing Development (EMD) effort on 9/18/36K Improved Environmental Control Unit (IECU) family. ***FY 2016 Plans:*** Support engineering, logistics, and testing efforts for follow-on IECU variants. ***FY 2017 Base Plans:*** Support engineering, logistics, and testing efforts for follow-on IECU variants.	-	0.556	0.400	-	0.400
Title: Government Program Management ***Description:*** Oversight and management of engineering, logistics, contracts, and testing efforts for 9/18/36/60K Improved Environmental Control Unit (IECU) family and multiple trailer-mounted variants. Transition to production. Provide oversight and management of follow-on ECU variants. ***FY 2016 Plans:*** Oversight and management of engineering, logistics, contracts, and testing efforts for follow-on IECU variants. ***FY 2017 Base Plans:*** Oversight and management of engineering, logistics, contracts, and testing efforts for follow-on IECU variants.	-	0.050	0.259	-	0.259
Accomplishments/Planned Programs Subtotals	-	0.756	1.259	-	1.259

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• MF9303: *OPA 3, Improved Environmental Control Units , MF9303*	7.388	18.876	22.124	-	22.124	16.277	8.198	8.463	27.857	Continuing	Continuing

Remarks

D. Acquisition Strategy

Begin concept development for efforts in support of multiple trailer-mounted IECU variants. The initial prototypes of the trailer-mounted variants will be assembled in house, with eventual production via depot-level integration of Government Furnished Equipment (GFE) from existing production contracts. Initial prototypes of the integrated fuel-fired heating and cooling systems will be procured via GFE and off-the-shelf components through third party vendors for assessment. This assessment will support development of a revised PD for eventual competitive procurement. Support technology insertions required to adapt IECUs to support future integrated Command Post heating and cooling requirements in support of Force 2025 and the Command Post ICD. Initial prototypes of ECUs in support of The Soft Wall Shelters CDD will be procured through third party vendors for assessment. This assessment will support development of a revised PD for eventual competitive procurement.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18 and 36K Improved Environmental Control Unit (IECU)	Various	PM E2S2 : various	1.174	-		-		-		-		-	0	1.174	Continuing
Trailer Variants	Various	PM E2S2 : various	0.506	-		0.015		0.059	Dec 2016	-		0.059	0	0.580	Continuing
Soft Wall ECUs	Various	PM E2S2 : various	0.050	-		0.020		0.130	Dec 2016	-		0.130	0	0.200	0
Integrated heating/cooling units	Various	PM E2S2 : various	0.025	-		0.015		0.070	Dec 2016	-		0.070	0	0.110	0
SBIR/STTR	Various	various : various	0.137	-		-		-		-		-	0	0.137	0
		Subtotal	1.892	-		0.050		0.259		-		0.259	0.000	2.201	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9 ,18 and 36K Improved Environmental Control Unit (IECU)	C/CPFF	Mainstream Engineering : Vero Beach, FL	2.064	-		-		-		-		-	0	2.064	Continuing
Trailer Mounted variants	MIPR	CERDEC Night Vision Lab : Ft Belvoir, VA	0.400	-		0.025		0.100	Mar 2017	-		0.100	0	0.525	0
Soft Wall ECU	C/CPFF	TBD : TBD	2.085	-		0.050		0.200		-		0.200	0	2.335	0
Integrated heating/cooling units	MIPR	CERDEC Night Vision Lab : Ft. Belvoir, VA	0.200	-		0.025		0.100	Mar 2017	-		0.100	0	0.325	0
		Subtotal	4.749	-		0.100		0.400		-		0.400	0.000	5.249	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9, 18 and 36K Improved Environmental Control Unit (IECU)	MIPR	CERDEC : Fort Belvoir, VA	2.117	-		-		-		-		-	0	2.117	0
Soft Wall ECUs	Various	CERDEC : Fort Belvoir, VA	3.682	-		0.300		0.200	Dec 2016	-		0.200	0	4.182	0
Trailer variants	MIPR	CERDEC : Fort Belvoir, VA	0.620	-		0.100		0.100	Dec 2016	-		0.100	0	0.820	0
Integrated heating/cooling units	MIPR	CERDEC : Fort Belvoir, VA	0.065	-		0.156		0.100	Dec 2016	-		0.100	0	0.321	0
		Subtotal	6.484	-		0.556		0.400		-		0.400	0.000	7.440	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18 and 36K Improved Environmental Control Unit (IECU)	MIPR	ATEC : APG, MD	0.478	-		-		-		-		-	0	0.478	0
Trailer Variants	MIPR	ATEC : APG, MD	0.349	-		0.025		0.050	Mar 2017	-		0.050	0	0.424	Continuing
Soft Wall ECUs	MIPR	ATEC : APG, MD	0.200	-		0.025		0.100	Mar 2017	-		0.100	0	0.325	0
Integrated heating/cooling units	MIPR	ATEC : APG, MD	0.150	-		-		0.050	Mar 2017	-		0.050	0	0.200	0
		Subtotal	1.177	-		0.050		0.200		-		0.200	0.000	1.427	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.302	-		0.756		1.259		-		1.259	0.000	16.317	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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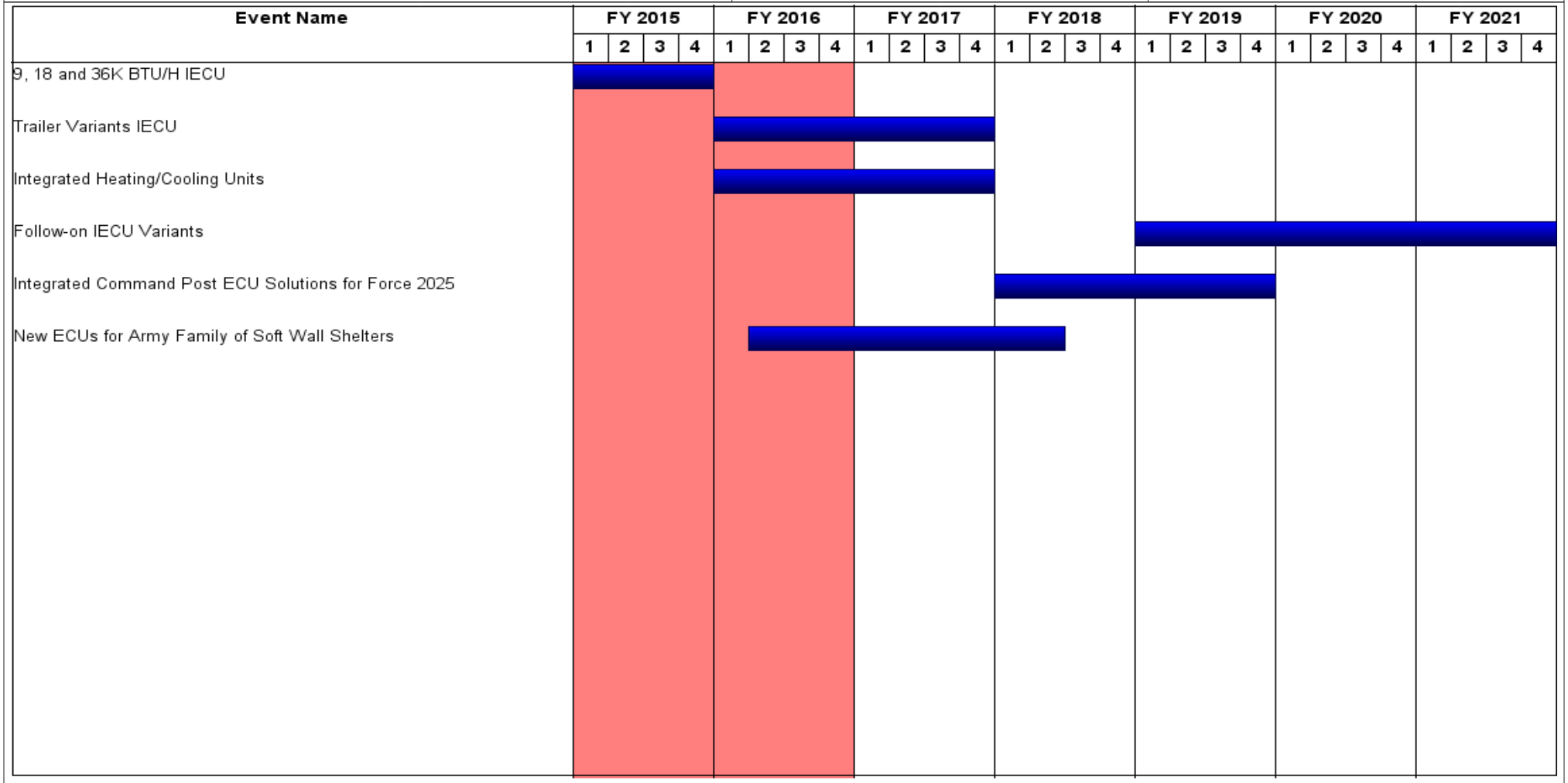

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
9, 18 and 36K BTU/H IECU	1	2009	4	2015
Trailer Variants IECU	1	2016	4	2017
Integrated Heating/Cooling Units	1	2016	4	2017
Follow-on IECU Variants	1	2019	4	2022
Integrated Command Post ECU Solutions for Force 2025	1	2018	4	2019
New ECUs for Army Family of Soft Wall Shelters	2	2016	2	2018

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) VR7 / *Combat Service Support Systems*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
VR7: *Combat Service Support Systems*	-	2.692	5.463	4.325	-	4.325	4.162	2.418	2.905	2.984	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the Engineering and Manufacturing Development (EMD) of critical distribution and sustainment capabilities to include base camp subsystems, field shelters, showers, latrines, heaters, mortuary affairs systems, camouflage systems, organizational equipment, and other combat service support equipment to fill identified theater distribution and services capability gaps, improve unit sustainability, improve resource and energy efficiency and increase combat effectiveness. Project supports development of expeditionary tactical field systems and support equipment to improve safety, effectiveness, and efficiency of deployed soldiers. This project develops critical enablers that support the Quartermaster (QM) Force Transformation Strategy and the Army's Modular Force Capabilities by maintaining readiness through fielding and integrating new equipment. This project also ensures Army Expeditionary Forces are capable of rapid deployment and reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS), lift demands, the combat zone footprint, and costs for logistical support.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Expeditionary Shelter Protection System (ESPS)	0.550	0.861	0.400	-	0.400
Description: ESPS is a lightweight, rapidly deployable and reusable ballistic protection system that can be integrated with commonly used military shelters in expeditionary and remote base camps and outposts where more robust forms of ballistic protection (i.e. sandbags, concrete barriers) are not readily available or logistically feasible. ***FY 2015 Accomplishments:*** Conducted contract planning and prepared draft solicitation for new development contract for ESPS. ***FY 2016 Plans:*** Release solicitation and award development contract for ESPS, procure test items and initiate logistics requirements to support transition to ESPS production. ***FY 2017 Base Plans:*** Conduct DT/OT, continue logistics requirements and initiate preparation of documentation for ESPS to support production decision and full production in FY18.					
Title: Family of Space Heaters	0.150	0.150	0.150	-	0.150

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: The family of Army Space Heaters support soldiers operating in basic, cold and extreme cold environments with a safe, portable, lightweight, multi-fueled, self-powered, space heaters for use in tents and/ or expeditionary shelters that do not require an external power source. These heaters provide the much needed capability of providing heated air effectively and efficiently while eliminating the shortcomings of the antiquated, dangerous and inefficient heaters they are replacing in the inventory. ***FY 2015 Accomplishments:*** Completed contract source selection, awarded contract, and procured test items for Production Qualification Testing (PQT) for Improved Army Space Heater (IASH) Type II. ***FY 2016 Plans:*** Conduct PQT, complete independent evaluation, initiate logistics requirements and prepare documentation to support transition of IASH Type II to production in FY17. ***FY 2017 Base Plans:*** Complete logistics requirements, obtain Type Classification decision approval for IASH Type II and begin full production.					
Title: Net-Zero Energy Efficiency Solutions	1.727	1.042	1.320	-	1.320
Description: Net-Zero Energy Efficiency Solutions reduce the operational energy and logistics footprint of the expeditionary base camp system, with the goal being a significant reduction in fuel, water, material and power requirements to sustain operations in the field. Effort includes reducing site preparation, sustainment, maintenance and spare parts requirements. Operating a base camp such as Force Provider requires a significant amount of logistics support and also produces an enormous amount of by products, both of which cost money, human effort (that means a risk in the form of soldiers on the road), and represents a potential vulnerability. ***FY 2015 Accomplishments:*** Conducted evaluation on Net-Zero energy efficiency solutions for Force Provider. Initiated Developmental Testing/Operational Testing (DT/OT) on Force Provider resource and energy efficient Rigid-Wall Shelter Based 150-Soldier Module with integrated state-of-the-art energy saving appliances and mature expeditionary shelter energy efficiency upgrades. ***FY 2016 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Conduct evaluation on Net-Zero energy efficiency solutions for Force Provider. Complete DT/OT on Force Provider Resource and Energy Efficient Rigid-Wall Shelter based 150-Soldier module with integrated state-of-the-art energy saving appliances and mature expeditionary shelter energy efficiency upgrades. Transition Rigid-Wall Shelter camp into production. Complete DT on Force Provider 150-Soldier module with integrated Advanced Medium-sized Mobile Power Source (AMMPS) microgrid. Transition proven and validated capabilities into full-rate production. ***FY 2017 Base Plans:*** Conduct evaluation on Net-Zero energy efficiency solutions for Force Provider. Complete DT/OT on Force Provider solar water heating subsystem, smart base monitoring and mature expeditionary shelter energy efficiency upgrades. Transition solar water heating subsystem and smart base monitoring into production. Transition proven and validated capabilities into full-rate production.					
Title: Laundry and Shower Improvements ***Description:*** Provides an enhanced capability for field hygiene with improved hot and cold weather performance, better compatibility with current and future combat clothing, and increased reliability, maintainability and ease of operation. ***FY 2015 Accomplishments:*** Developed test prototypes of key laundry subsystems incorporating component replacements and upgrades to address identified field problems and equipment issues. ***FY 2016 Plans:*** Continue development of hardware improvements. Conduct Developmental Testing (DT) on prototype subsystems and components. ***FY 2017 Base Plans:*** Complete testing of prototype system improvements. Update Technical Data Packages and product support documentation and transition to production.	0.265	0.225	0.600	-	0.600
Title: Expeditionary Solid Waste Disposal (ESWDS) for Small Base Camps ***Description:*** Provides an integrated waste management (reduction, treatment or disposal process) add-on capability that can safely process 1,000 pounds (lbs) or more of mixed solid waste in a single day on site. Mixed solid waste produced on a single 150 person site must be properly managed through reduction, reuse, recycling,	-	0.685	0.845	-	0.845

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
treatment, or disposal. Most of the waste is nonhazardous solid waste. Provides a substantial improvement over the current practice of burn pits that poses a health risk to Soldiers and/or the backhaul logistics burden. ***FY 2016 Plans:*** Complete the Expeditionary Solid Waste Disposal System prototypes and obtain required environmental permits for test and operation. Prepare for and initiate Developmental Testing (DT). ***FY 2017 Base Plans:*** Complete DT and conduct Operational Test (OT) on ESWDS.					
Title: Containerized Ice Making System (CIMS) ***Description:*** Develops an add-on ice making capability that automatically dispenses and seals 10 lbs bags at a rate of a minimum of 3,600 pounds of ice per day. This capability is based upon Army current operational requirements for ice which is four pounds per Soldier per day. This capability enables support for up to 900 personnel. Current operations require external support to provide personnel with ice for cooling drinking water in extremely arid environments. This capability will reduce the sustainment risk and cost associated with transporting this commodity from external sources. The objective requirement enables stockage of ice to assist with surge operations. ***FY 2017 Base Plans:*** Develop programmatic documentation, specification and contract solicitation and transition the CIMS to production.	-	-	0.350	-	0.350
Title: Black Waste Elimination for Small Base Camps (150 personnel) ***Description:*** Provides the capability to reduce/eliminate the black water generated by small base camps. The objective capability will reduce our sustainment requirements for backhauling black waste water as well as our risk of contaminating the environment with biological contaminants. This capability will significantly reduce reliance on external support and is a key capability required to move toward zero footprint base camps. ***FY 2017 Base Plans:*** Procure test prototypes and initiate Development Testing (DT) of the black waste elimination system.	-	-	0.660	-	0.660
Title: Ultralightweight Camouflage Net System (ULCANS) ***Description:*** ULCANS is durable, robust, snag resistant state of the art camouflage system that provides increased survivability against multi-spectral visual, infrared and radar threats, thermal signature suppression	-	2.500	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
and significant thermal/solar reduction capability. ULCANS utilizes a snag-free design and is capable of use in all types of weather and climatic conditions except in heavy snow and winds. ULCANS variants are integrated systems that are very lightweight, easily deployable, versatile, user friendly and tailored to the equipment meeting the requirements of operations for combat systems, command and control equipment, logistic support sites, tactical facilities, and fixed facilities. RDT&E funding supports formal development of new ULCANS variants (snow, urban, aviation, 2 sided system) and necessary technology/signature enhancements for current ULCANS variants. ***FY 2016 Plans:*** Conduct natural environment background characterization, conduct early market research, evaluate and test potential solutions, conduct Engineering Change Proposal (ECP) for woodland camouflage variant. Initiate ECP logistics requirements, finalize market research, begin contract planning.					
Accomplishments/Planned Programs Subtotals	2.692	5.463	4.325	-	4.325

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 643804 VR8: *Combat Service Support Systems AD,*	2.588	4.048	4.401	-	4.401	4.366	2.386	2.848	2.925	Continuing	Continuing

Remarks

D. Acquisition Strategy

Accelerate product development and testing to transition into production.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	Various	PM Force Sustainment Systems : Natick, MA	0.459	0.262	Oct 2014	0.366	Oct 2015	0.465	Oct 2016	-		0.465	Continuing	Continuing	0
CBI Support	Various	PD CBI : Warren, MI	3.747	-		-		-		-		-	0	3.747	0
SBIR+STTR	TBD	Various : Various	0.077	-		-		-		-		-	0	0.077	0
		Subtotal	4.283	0.262		0.366		0.465		-		0.465	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Soldier Support Equipment	TBD	Various : Various	2.596	1.138	Mar 2015	3.117	Nov 2015	1.570	Jan 2017	-		1.570	Continuing	Continuing	0
Contingency Basing Infrastructure	Various	Various : Various	1.531	-		-		-		-		-	0	1.531	0
		Subtotal	4.127	1.138		3.117		1.570		-		1.570	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Soldier Support Equipment	Various	Various : Various	2.283	1.292	Mar 2015	1.980	Nov 2015	2.290	Jan 2017	-		2.290	Continuing	Continuing	0
Contingency Basing Infrastructure	Various	Various : Various	1.206	-		-		-		-		-	0	1.206	0
		Subtotal	3.489	1.292		1.980		2.290		-		2.290	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.899	2.692		5.463		4.325		-		4.325	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

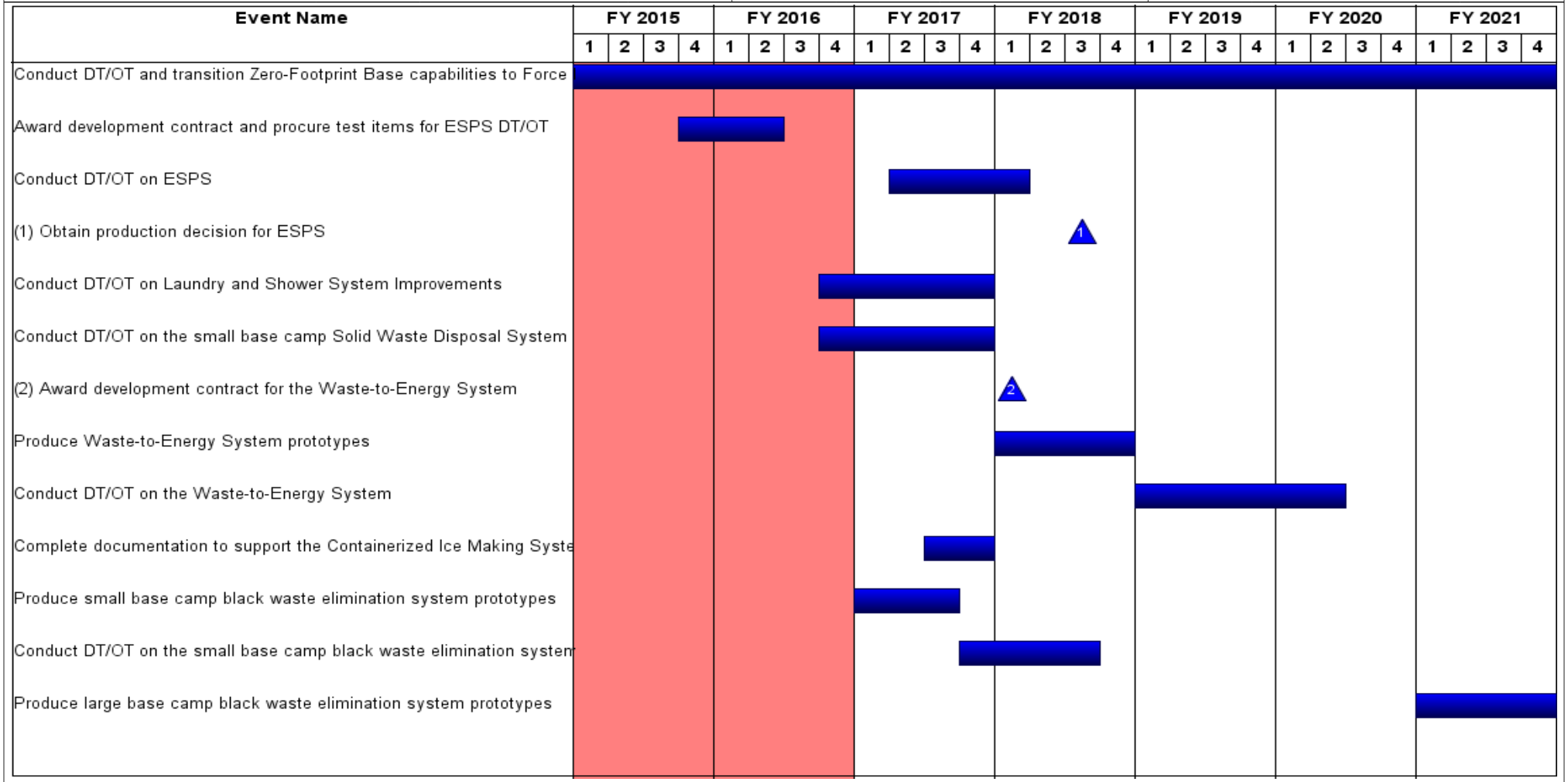

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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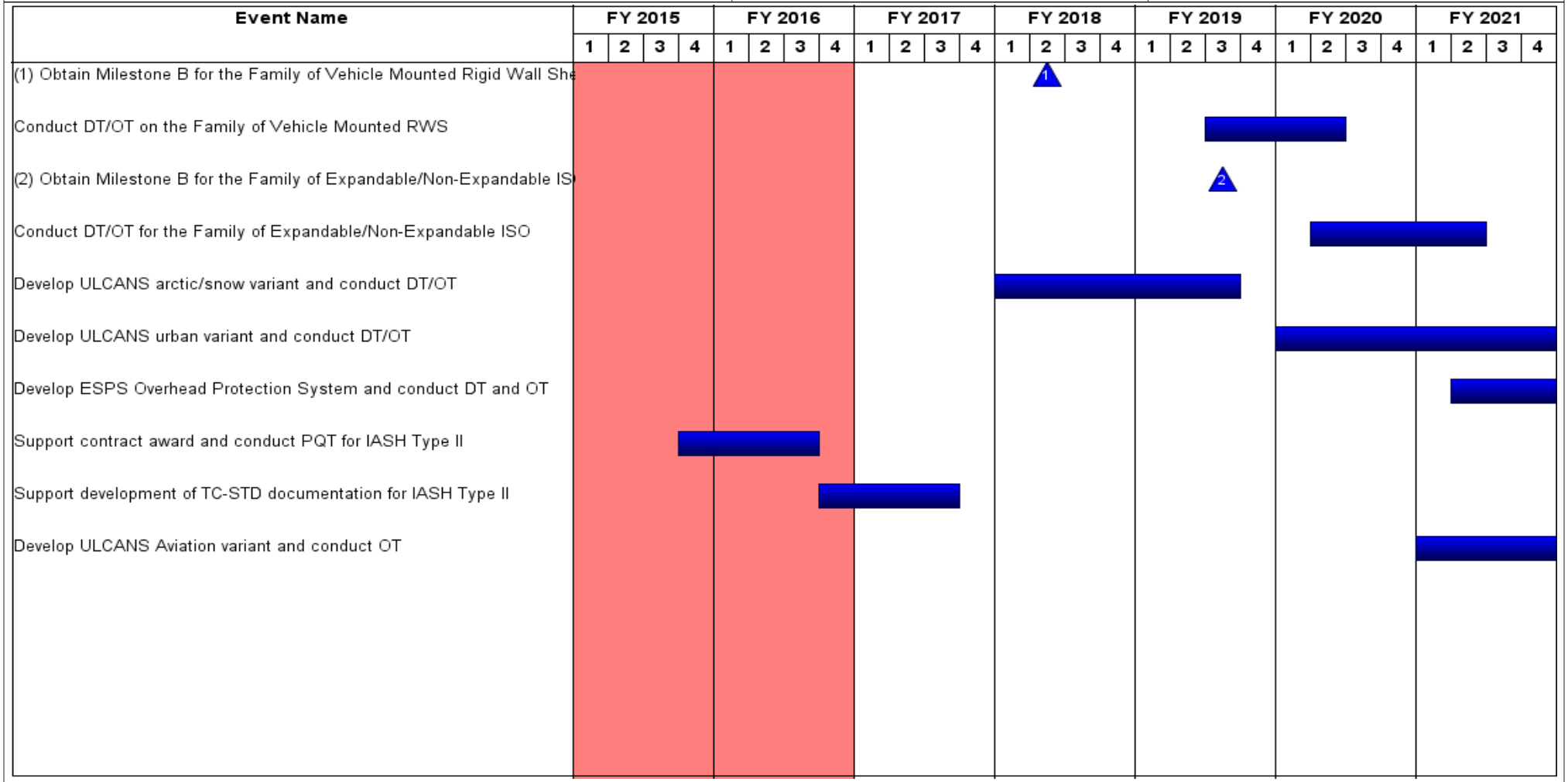

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Conduct DT/OT and transition Zero-Footprint Base capabilities to Force Provider.	1	2015	4	2022
Award development contract and procure test items for ESPS DT/OT	4	2015	2	2016
Conduct DT/OT on ESPS	2	2017	1	2018
Obtain production decision for ESPS	3	2018	3	2018
Conduct DT/OT on Laundry and Shower System Improvements	4	2016	4	2017
Conduct DT/OT on the small base camp Solid Waste Disposal System	4	2016	4	2017
Award development contract for the Waste-to-Energy System	1	2018	1	2018
Produce Waste-to-Energy System prototypes	1	2018	4	2018
Conduct DT/OT on the Waste-to-Energy System	1	2019	2	2020
Complete documentation to support the Containerized Ice Making System production	3	2017	4	2017
Produce small base camp black waste elimination system prototypes	1	2017	3	2017
Conduct DT/OT on the small base camp black waste elimination system	4	2017	3	2018
Produce large base camp black waste elimination system prototypes	1	2021	4	2021
Obtain Milestone B for the Family of Vehicle Mounted Rigid Wall Shelters (RWS)	2	2018	2	2018
Conduct DT/OT on the Family of Vehicle Mounted RWS	3	2019	2	2020
Obtain Milestone B for the Family of Expandable/Non-Expandable ISO	3	2019	3	2019
Conduct DT/OT for the Family of Expandable/Non-Expandable ISO	2	2020	2	2021
Develop ULCANS arctic/snow variant and conduct DT/OT	1	2018	3	2019
Develop ULCANS urban variant and conduct DT/OT	1	2020	4	2021
Develop ESPS Overhead Protection System and conduct DT and OT	2	2021	4	2022
Support contract award and conduct PQT for IASH Type II	4	2015	3	2016
Support development of TC-STD documentation for IASH Type II	4	2016	3	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Develop ULCANS Aviation variant and conduct OT	1	2021	4	2022

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604805A *I Command, Control, Communications Systems - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.116	2.683	4.245	-	4.245	9.814	5.084	4.834	4.057	Continuing	Continuing
593: *Joint Battle Command - Platform (JBC-P)*	-	5.116	2.683	4.245	-	4.245	9.814	5.084	4.834	4.057	Continuing	Continuing

Note

Effective FY2016, the Army segregated the costs of Mounted Computing Environment (MCE) Proj/PE 604818.EJ5, from Joint Battle Command – Platform (JBC-P), Proj/PE 0604805A/593, in support of MCE efforts associated to the Common Operating Environment (COE) directive from the AAE to the Program Executive Offices, dated 20 December 2011.

A. Mission Description and Budget Item Justification

This Program Element (PE) supports efforts to develop interoperability of Army programs and products, horizontally and vertically for the digitized battlefield. Project supports Information Standards Interoperability Engineering and Joint Interoperability Certification. It provides the critical elements of the Army/Joint Technical Architecture, the mandated standards and communication protocols for Army/Joint ground and air operations, and crucial certification test tools to evaluate systems' interoperability for the Warfighter in support of the Vice Chief of Staff of the Army (VCSA) and Army Acquisition Executive (AAE). It also provides Joint certification testing and certification recommendations to the Joint Chiefs of Staff (JCS) for Army systems. This Army-wide effort directly supports the management, oversight, development, maintenance, and interoperability at the Army enterprise level C4I/IT (Command, Control, Communications, Computers, and Intelligence/Information Technology) architecture efforts required to implement Unit Set Fielding (USF), Software Blocking (SWB) Policy and Army Knowledge Management.

Project 593, JBC-P, funds the Systems Engineering, Software Development and Testing of JBC-P. JBC-P, which includes Blue Force Tracking (BFT) and Army Aviation, and 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 (NOC), Tactical Operation Centers (TOCs), Brigade Command Posts) and enables mission accomplishment across the entire spectrum of military operations.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	4.431	2.726	2.606	-	2.606
Current President's Budget	5.116	2.683	4.245	-	4.245
Total Adjustments	0.685	-0.043	1.639	-	1.639
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.685	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-0.043	1.639	-	1.639

Change Summary Explanation

FY 2015 reprogramming provides additional development and testing of the Mobile Computing Environment within the Joint Battle Command - Platform product.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) 593 / *Joint Battle Command - Platform (JBC-P)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
593: *Joint Battle Command - Platform (JBC-P)*	-	5.116	2.683	4.245	-	4.245	9.814	5.084	4.834	4.057	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Effective FY2016, the Army segregated the costs of Mounted Computing Environment (MCE) Proj/PE 604818.EJ5, from Joint Battle Command – Platform (JBC-P), Proj/ PE 0604805A/593, in support of MCE efforts associated to the Common Operating Environment (COE) directive from the AAE to the Program Executive Offices, dated 20 December 2011.

A. Mission Description and Budget Item Justification

The Joint Battle Command - Platform (JBC-P) program is the cornerstone of Joint Forces Command and Control (C2) Situational Awareness (SA) and communications. JBC-P provides secure Blue Force Tracking capability in Platforms and Command Posts, providing soldiers and commanders a map-based Common Operating Picture of the battlefield, as a result, reducing fratricide.

JBC-P serves a primary role, and is the foundational element and core software platform of the Mounted Computing Environment (MCE), under the COE directive. The COE is a set of standardized computing technologies that facilitates secure and interoperable applications to be rapidly developed and executed across a variety of computing environments. The MCE, one of the six computing environments (CEs) formalized by the AAE under the COE directive, standardizes end-user environments while enabling streamlined deployment of new warfighting applications.

MCE leverages JBC-P hardware and software to consolidate and integrate multiple warfighting systems in the Platform (mounted) environment. This integrated MCE, with its open standards, enhanced interoperability, and simplified end-user interface will speed delivery of new Mission Command applications to the warfighter while improving the effectiveness and value of current systems.

FY2017 funding provides the means to continue to develop capabilities, product applications, and security enhancements to counter the emerging cyber threat, with a focus on the integration of MCE infrastructure developments and the interoperability of the JBC-P software with other CEs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Software Development	1.567	0.770	1.218
Description: Develop capabilities, product applications, platform interoperability, and system services across the JBC-P family of systems, to include the development of capabilities to meet Key Performance Parameters (KPPs), and other system attributes. Also develop unique software and integration capabilities in support of the Mounted Computing Environment (MCE), part of the Common Operating Environment (COE). Develop Multi-Level Security Domains for Network, Users, and Information.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Funding used for on-going software development efforts focused on the migration of JBC-P and other platform systems to the MCE and COE standards. This effort included migrating to specific network communications standards, and providing routing services on a COTS operating system. Software capabilities also under migration to MCE standards include the use of Common Geospatial (map) services and additional Vehicle Integration for C4ISR/EW Interoperability (VICTORY) component types. Funds were also required for continued conduct of User Juries to assess software maturity. ***FY 2016 Plans:*** Develop capabilities, product applications, platform interoperability, and system services across the JBC-P family of systems, to include the development of capabilities to meet Key System Attributes (KSAs) in the CDD (in lieu of CPD). ***FY 2017 Plans:*** Develop capabilities, product applications, platform interoperability, and system services across the JBC-P family of systems, to include the development of capabilities to meet Key System Attributes (KSAs) in the CDD and the implementation of Tactical PKI (T-PKI). Integrate developments from the MCE with the JBC-P core system to allow the development, certification, and integration of developed apps that will deliver operational capabilities to the platform. Develop security enhancements to counter the emerging cyber threat.			
Title: Software/Systems Engineering	2.293	1.237	1.958
Description: Perform Software/Systems Engineering in support of the development of JBC-P capabilities, applications, and services, to include, but not limited to, conducting engineering studies, architecture development (both software and network), system analyses, technical readiness assessments, technical interchange meetings/events, and development of related reports and other deliverables. ***FY 2015 Accomplishments:*** Funding was required for continued system engineering efforts in support of COE baselines and expanding common services across platforms. Included planning and engineering of future MCE capabilities using COTS, including Shared Software Databus, Common Geospatial (map) Services, Common Overlay, and Single Security Services. ***FY 2016 Plans:*** Continue system engineering efforts for JBC-P balance of CDD threshold requirements and support of the Battle Command product line. ***FY 2017 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue system engineering efforts for JBC-P balance of CDD threshold requirements and support of the Battle Command product line. Conduct software systems engineering for the integration of MCE infrastructure developments and the interoperability of JBC-P software with other Computing Environments			
Title: Test, Evaluation and Integration ***Description:*** Plan and conduct system software acceptance testing from CDD for baseline products, Integration Events (i.e., tests and assessments) in support of the JBC-P Family of Systems, to include Risk Reduction Events, vulnerability testing, and Army Interoperability Certification (AIC) testing. ***FY 2015 Accomplishments:*** Funds used for Verification & Validation efforts of MCE, HW/SW integration testing, 3rd party application testing and accreditation. Support for Army Warfighting Assessments (AWA), User Juries and other demonstrations for MCE. ***FY 2016 Plans:*** Test software capability, Developmental Testing (DTs), and Risk Reduction Events (RREs) for continued support of JBC-P. ***FY 2017 Plans:*** Conduct testing on enhancements to the the JBC-P system resulting from integration of MCE and Mounted Family of Computing System developments. Testing will include, Developmental Testing (DT), Risk Reduction Events (RREs) and Operation Assessments for the integration of approved Cross Cutting Capabilities (CCC) and interoperability with other Computing Environments.	0.389	0.152	0.239
Title: Program Management ***Description:*** JBC-P Program Management, including Technical, Logistics, and Business staff oversight. ***FY 2015 Accomplishments:*** Provided program management, logistics, and business oversight for JBC-P/MCE Software/System Engineering activities. Program Management included overall management of program milestones, major events, funds execution, contract management, and logistical support. Included management of the MCE Governance process, which included participation in COE working group infrastructure, operations, participation in Technical Advisory boards, system of systems engineering & the Platform IPT efforts. ***FY 2016 Plans:*** Will provide technical, logistics and business oversight for JBC-P FoS software development and system engineering activities. Program Management includes funds execution, contract management, and logistical support to program's RDT&E activities. ***FY 2017 Plans:***	0.867	0.524	0.830

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will provide technical, logistics and business oversight for JBC-P FoS software development and system engineering activities. Program Management includes funds execution, contract management, and logistical support to program's RDT&E activities and oversight of the Certification of Software Apps that will interoperate with the JBC-P system as part of the MCE.			
Accomplishments/Planned Programs Subtotals	5.116	2.683	4.245

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Joint Battle Command - Platform: *OPA W61990*	87.892	133.339	137.501	-	137.501	139.088	135.010	143.338	158.706	0	934.874
• Mounted Computing Environment (MCE): *RDTE 654818 PROJ EJ5*	-	12.370	15.271	-	15.271	18.606	16.814	7.668	8.683	0	79.412

Remarks

Procurement funding in Fiscal Year 2015 through 2021 (Base funding) is designated for the procurement, fielding, and program management of JBC-P Family of Systems including JBC-P, JBC-P Log, and the implementation of the Mounted Computing Environment (MCE).

Effective FY2016, the Army segregated the costs of Mounted Computing Environment (MCE) Proj/PE 604818.EJ5, from Joint Battle Command – Platform (JBC-P), Proj/PE 0604805A/593, in support of MCE efforts associated to the Common Operating Environment (COE) directive from the AAE to the Program Executive Offices, dated 20 December 2011. MCE efforts include continued Software Development, Software/Systems Engineering, Test, Evaluation, Integration, and Program Management.

D. Acquisition Strategy

The program entered Milestone B (Engineering and Manufacturing Development phase) in September 2009. RDTE funding for JBC-P began in Fiscal Year 2010. The Acquisition Strategy Report (ASR) was approved in July 2012. The Milestone Decision Authority (MDA) approved a Milestone C, conditional on positive Limited User Test (LUT) results, in July 2012.

The JBC-P Capabilities Development Document in lieu of Capabilities Production Document (CDD ILO CPD) was Joint Requirements Oversight Council (JROC) approved March 2013. Completed Initial Operational Test & Evaluation (IOT&E) as part of Network Integration Evaluation (NIE) 13.2 in 3QFY13. The IOT&E tested the JBC-P system software on existing FBCB2 hardware (non-dismountable vehicle systems) and future production-representative hardware. On completion of Army Interoperability Certification (AIC) and Joint Interoperability Test Certification (JITC), MDA authorized Full Rate Production (FRP).

As encouraged by DoD policy, development efforts are being performed by the Software Engineering Directorate (SED) of the Aviation and Missile Research, Development and Engineering Center (AMRDEC). Any additional development efforts in the approved CDD in lieu of CPD that cannot be accomplished by either SED

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

or SEC will be obtained via other existing contract vehicles. Hardware along with fielding, training and field support efforts will be obtained through existing competitively awarded contracts.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) 593 / *Joint Battle Command - Platform (JBC-P)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBC-P Software Development	MIPR	Multiple : Multiple	64.626	1.567		0.770		1.218		-		1.218	Continuing	Continuing	0
JBC-P Software/System Engineering	MIPR	Multiple : Multiple	33.626	2.293		1.237		1.958		-		1.958	Continuing	Continuing	0
		Subtotal	98.252	3.860		2.007		3.176		-		3.176	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Gov't-Core)	Sub Allot	PM JBC-P : Aberdeen Proving Ground (APG), MD	4.320	0.867		0.524		0.830		-		0.830	Continuing	Continuing	0
		Subtotal	4.320	0.867		0.524		0.830		-		0.830	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop and Conduct Tests and Assessments	MIPR	Multiple : Multiple	25.822	0.389		0.152		0.239		-		0.239	Continuing	Continuing	0
		Subtotal	25.822	0.389		0.152		0.239		-		0.239	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	128.394	5.116		2.683		4.245		-		4.245	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

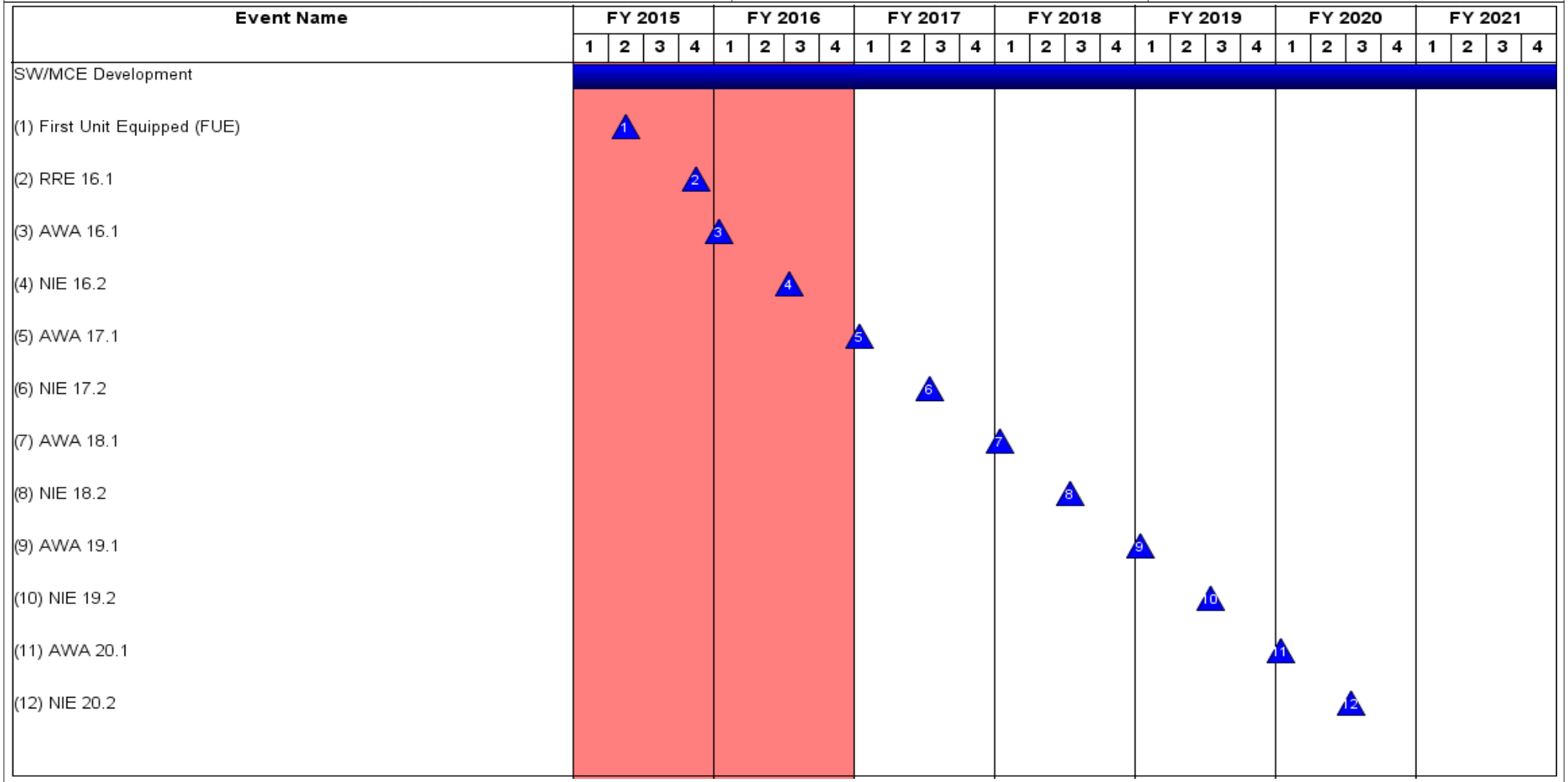

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

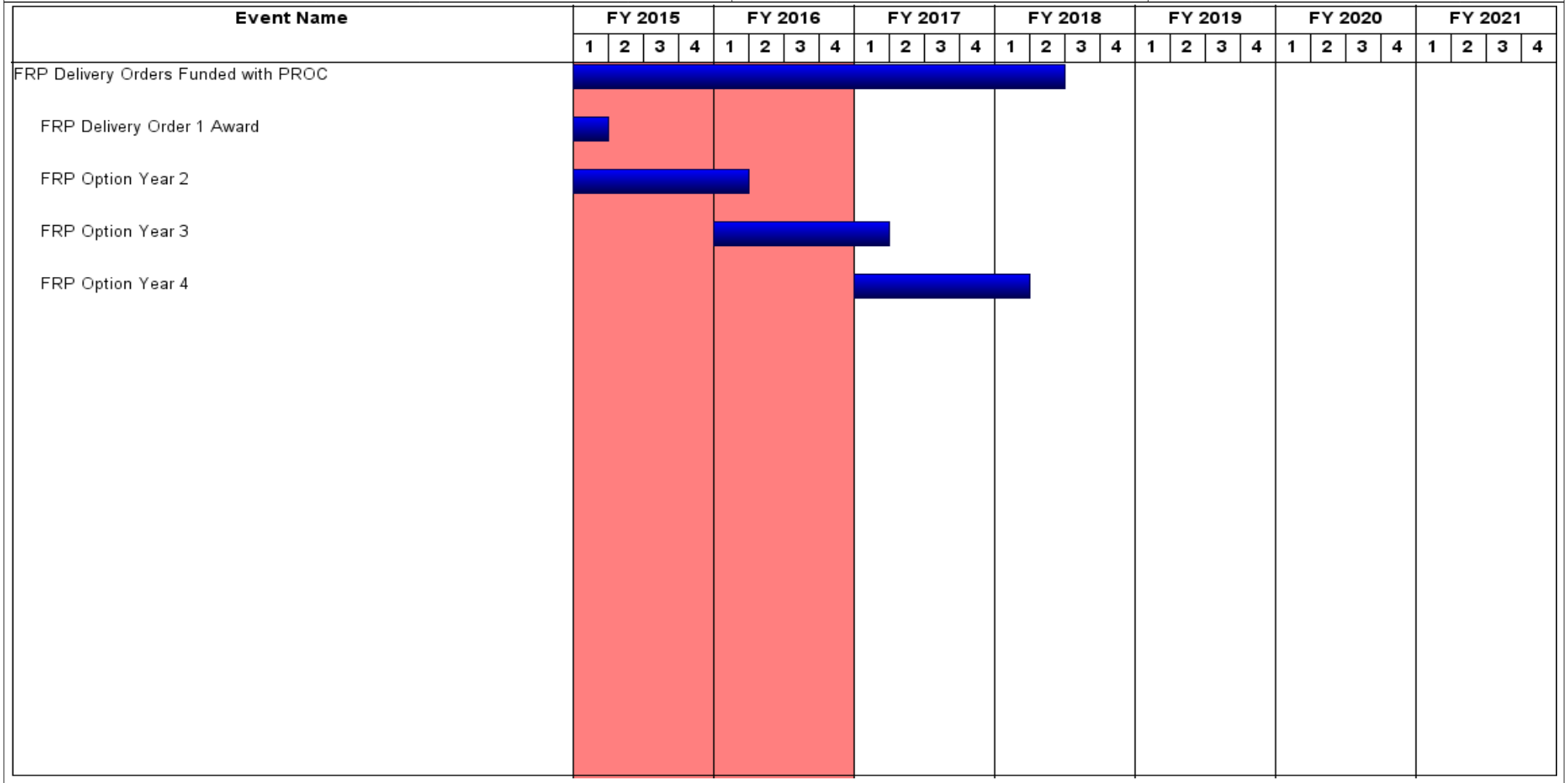

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SW/MCE Development	1	2010	4	2021
First Unit Equipped (FUE)	2	2015	2	2015
RRE 16.1	4	2015	4	2015
AWA 16.1	1	2016	1	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
NIE 17.2	3	2017	3	2017
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
AWA 20.1	1	2020	1	2020
NIE 20.2	3	2020	3	2020
FRP Delivery Orders Funded with PROC	1	2014	2	2018
FRP Delivery Order 1 Award	1	2014	1	2015
FRP Option Year 2	1	2015	1	2016
FRP Option Year 3	1	2016	1	2017
FRP Option Year 4	1	2017	1	2018

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604807A *I Medical Materiel/Medical Biological Defense Equipment - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	29.441	45.412	41.124	-	41.124	43.603	52.562	56.893	58.410	Continuing	Continuing
812: *Mil HIV Vac&Drug Dev*	-	1.442	5.031	4.557	-	4.557	5.283	5.408	5.579	5.729	Continuing	Continuing
832: *Field Medical Systems Engineering Development*	-	17.689	25.029	23.532	-	23.532	25.035	32.333	34.877	35.806	Continuing	Continuing
849: *Infec Dis Drug/Vacc Ed*	-	10.310	14.953	12.922	-	12.922	13.171	14.821	16.437	16.875	Continuing	Continuing
VS8: *MEDEVAC Mission Equipment Package (MEP) - End Dev*	-	0.000	0.399	0.113	-	0.113	0.114	0.000	0.000	0.000	Continuing	Continuing

Note

No PE or project change in FY17.

A. Mission Description and Budget Item Justification

This program element (PE) funds advanced development of medical materiel within the System Demonstration and Low Rate Initial Production portions of the acquisition life cycle using 6.5 funding. It supports products successfully developed in the Systems Integration portion of the Systems Development and Demonstration phases through completion of the Milestone C Decision Review. Commercially-off-the-shelf (COTS) medical products are also tested and evaluated for military use, when available. This PE primarily includes pivotal (conclusive) human clinical trials necessary for licensure by the Food and Drug Administration (FDA).

(PROJ 812) project funds military relevant human immunodeficiency virus (HIV) medical countermeasures. These funds provide for engineering and manufacturing development of candidate vaccines and drugs to permit large-scale field testing. Development focused on military unique needs effecting manning, mobilization, and deployment. Products from this project will normally transition to DoD Health Programs or OPA Funds.

(PROJ 832) this project funds the engineering and manufacturing development of medical products for enhanced combat casualty care and follow-on care, including rehabilitation. Mature commercial-off-the-shelf (COTS) medical products are also evaluated for military use. Consideration will also be given to reduce the medical sustainment footprint through smaller weight and cube volume, or equipment independence from supporting materiel. Products from this project will normally transition to OPA Funds.

(PROJ 849) funds development of candidate medical countermeasures for military relevant infectious diseases. These products fall in four major areas: vaccines, drugs, diagnostic kits/devices, and insect control measures to limit exposure and disease transmission. FDA approval is a mandatory obligation for all military products placed into the hands of medical providers or service members for human use. Products from this project will normally transition to DoD Health Programs or OPA funds.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604807A *I Medical Materiel/Medical Biological Defense Equipment - Eng Dev*

(PROJ VS8) program receives products that transition from VS7 and funds effort to complete research and development for the MEDEVAC Mission Essential Packages (MEPs) to support 256 Medical Evacuation legacy helicopters. The Army's force design increased the number of air frames in the force from 12 to 15 aircraft for 37 MEDEVAC companies to better meet operational needs.

These projects are managed by U.S. Army Medical Materiel Development Activity (USAMMDA) and U.S. Army Medical Materiel Agency (USAMMA) of the US Army Medical Research and Materiel Command.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	30.384	45.412	42.817	-	42.817
Current President's Budget	29.441	45.412	41.124	-	41.124
Total Adjustments	-0.943	0.000	-1.693	-	-1.693
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.943	-			
• Adjustments to Budget Years	-	-	-1.693	-	-1.693

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 812 / *Mil HIV Vac&Drug Dev*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
812: *Mil HIV Vac&Drug Dev*	-	1.442	5.031	4.557	-	4.557	5.283	5.408	5.579	5.729	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds militarily relevant human immunodeficiency virus (HIV) medical countermeasures. These funds provide for engineering and manufacturing development of candidate vaccines and drugs to permit large-scale field testing. Development is focused on militarily unique needs effecting manning, mobilization, and deployment.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Military HIV Vaccine and Drug Development	1.442	5.031	4.557
Description: This project provides funds for engineering and manufacturing development of candidate vaccines and drugs to permit large-scale field testing of vaccines for medical countermeasures to HIV ***FY 2015 Accomplishments:*** Continue to refine vaccine administration schedule as well as clinical trial design based on data from previous clinical trials. Continue to adjust plan for Regional well-controlled clinical trial large enough to demonstrate vaccine efficacy which initiated mid-2013. ***FY 2016 Plans:*** Begin early testing of new Envelope glycoprotein 120 bivalent products in prime-boost formal will allow for efficacy site preparation and potential trial start in Q1 of FY17. Begin final site selection and ramp up of efficacy trial activities. ***FY 2017 Plans:*** Will conduct a Phase IIB efficacy study (trial to evaluate efficacy in patients with the disease) for the global HIV vaccine candidate.			
Accomplishments/Planned Programs Subtotals	1.442	5.031	4.557

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 812 / *Mil HIV Vac&Drug Dev*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

Test and evaluate commercially developed vaccine candidates in government-managed trials.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 812 / *Mil HIV Vac&Drug Dev*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Management Services Cost	Various	Various : Various	2.461	0.173		1.018		0.764		-		0.764	Continuing	Continuing	0
		Subtotal	2.461	0.173		1.018		0.764		-		0.764	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Cost	Various	Henry M. Jackson Foundation, : Various	33.277	0.268		2.000		0.881		-		0.881	Continuing	Continuing	Continuing
		Subtotal	33.277	0.268		2.000		0.881		-		0.881	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Support Cost	Various	Various : Various	1.405	0.301		0.963		0.944		-		0.944	Continuing	Continuing	0
		Subtotal	1.405	0.301		0.963		0.944		-		0.944	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development T&E Cost	Various	Henry M. Jackson Foundation, : Various	26.395	0.700		1.050		1.968		-		1.968	Continuing	Continuing	Continuing
		Subtotal	26.395	0.700		1.050		1.968		-		1.968	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 812 / *Mil HIV Vac&Drug Dev*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	63.538	1.442		5.031		4.557		-		4.557	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 812 / *Mil HIV Vac&Drug Dev*

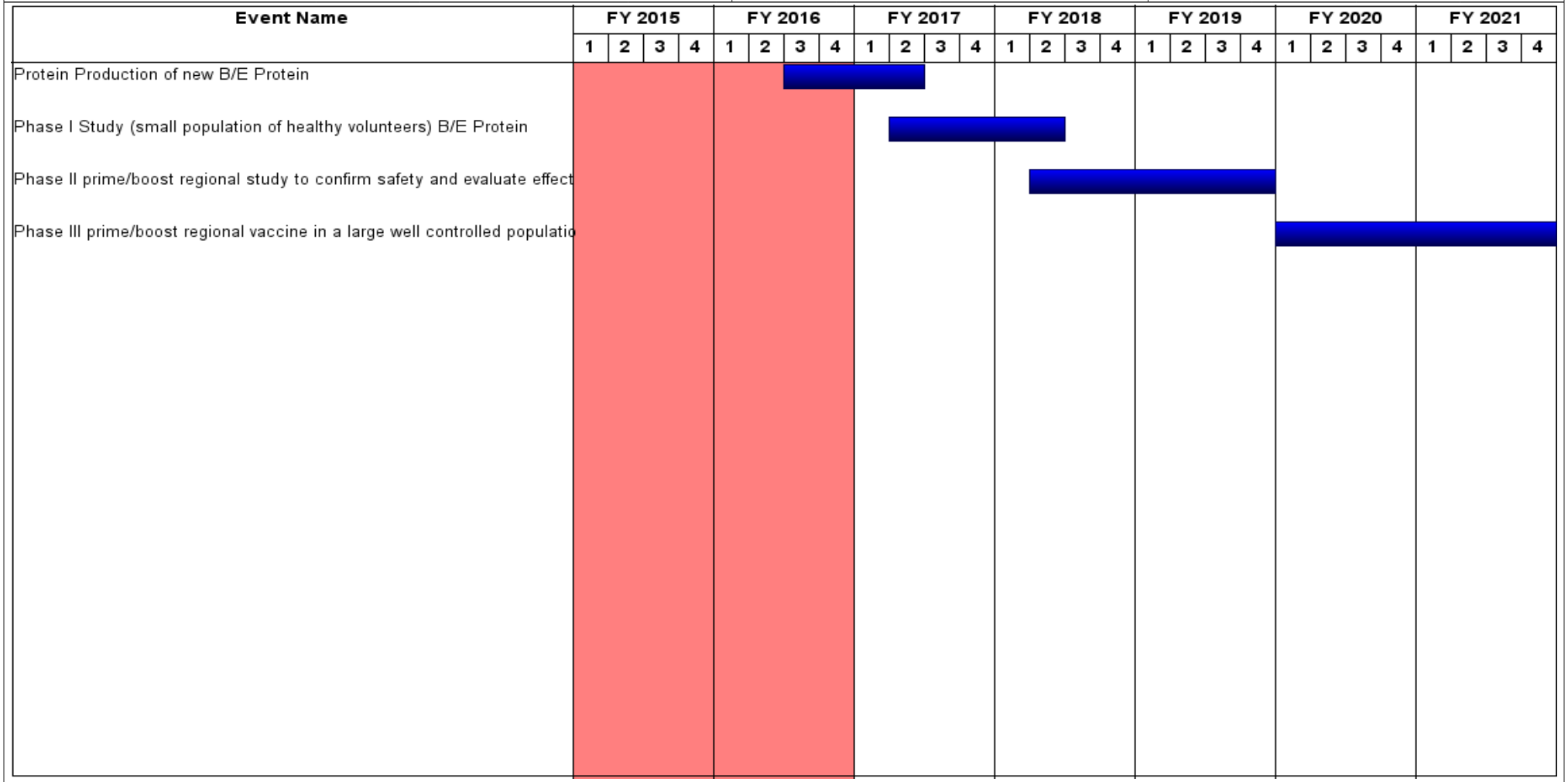

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 812 / *Mil HIV Vac&Drug Dev*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Protein Production of new B/E Protein	3	2016	2	2017
Phase I Study (small population of healthy volunteers) B/E Protein	2	2017	2	2018
Phase II prime/boost regional study to confirm safety and evaluate effectiveness	2	2018	4	2019
Phase III prime/boost regional vaccine in a large well controlled population	1	2020	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 832 / *Field Medical Systems Engineering Development*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
832: *Field Medical Systems Engineering Development*	-	17.689	25.029	23.532	-	23.532	25.035	32.333	34.877	35.806	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the engineering and manufacturing development of medical products for enhanced combat casualty care and follow-on care, including rehabilitation. This project funds pivotal (conclusive) human clinical trials or mechanical engineering evaluations for effectiveness of devices or biologics (products derived from living organisms) to fulfill unique military requirements. Mature commercial-off-the-shelf (COTS) medical products are also evaluated for military use. Consideration is also given to reducing the medical sustainment footprint through smaller weight and cube volume, or equipment independence from supporting materiel. This work is frequently completed through a laboratory/contractor team with the contractor obtaining the U.S. Food and Drug Administration (FDA) licensure for sale of the product.

Major contractors/intra-governmental agencies include: IGR Enterprises,Inc.;Army Medical Department Board Test Center;Se Qual Technologies,Inc.; Enginivity, Inc.;Ultrasound Diagnostics,Inc.;HemCon Medical Technologies,; Cerdak Ltd;Hemerus Medical,LLC; Fast Track Drugs & Biologics,LLC; Integrated Medical Systems,Inc;the National Institutes of Health National Heart, Lung and Blood Institute (NHLBI), and the U.S. Army Aeromedical Research Laboratory, Walter Reed Army Institute of Research (WRAIR) and Institute of Surgical Research (ISR) for user evaluation. Other military agencies include Program Executive Office (PEO) Soldier, PEO Combat Service Support (CSS), and Naval Undersea Warfare Center.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Field Medical Systems Engineering Development PM Medical Devices	2.815	3.260	3.126
Description: This project funds the engineering and manufacturing development of medical products for enhanced combat casualty care managed by PM Medical Devices.			
FY 2015 Accomplishments: Oxygen Generator (15 LPM) System: An MOA was developed in FY13 between USAMMA and the USAF to address this joint requirement. At this time no Army funds are projected for this project. Anticipate DHP RDT&E funds to be used in support of the joint requirement. Replacement for the M-138 Steam Sterilizer: In FY13 the sterilizer project had undergone a major shift in contract strategy. Funds will be used to allow a manufacturer to fully develop and achieve FDA approval by the end of FY15. At the end of the contract period, it is fully anticipated that the Army will have a new sterilizer available for fielding. Moved this project through the DOD Acquisition process to accommodate the modernization effort. Medical Equipment Sets Development: Continue development and testing to ensure the most current and cost effective devices are being utilized. Equipment is selected for modernization based on its own life cycle plan as part of a Sets, Kits and Outfits (SKO). Modernization also occurs when products are discontinued, new models are available and new technology introduced to meet the current standard of patient			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
care. TBI Diagnostic Assay System Increment II Point of Care Device: The focus of this effort is to use the current Biomarker technology developed by Banyan and cross-level all known technologies to Abbott Diagnostics. Contracting efforts are in place to facilitate this path forward. Army currently uses the i-STAT in assemblages. The intent of this effort is to modernize the i-STAT platform to accommodate the new cartridges associated with the TBI Biomarkers. Noninvasive Neurodiagnostics TBI: Noninvasive Neurodiagnostic technologies for TBI is multi-focused program that transitions product from S&T and Commercial Off the Shelf (COTS) products. Efforts to collate all non-invasive technologies into one integrated IPT are currently in place. The 3 technologies currently involved are the Eye- Tracking System, the QEEG and Balance Platforms. Future components of the multi-focused approach fall under the scope of this line item. Anticipate full-up IPTs with funding allocations designated in FY15. Impedance Threshold Device for the Treatment of TBI: Current device has a 510(k) (Premarket Notification) clearance for multiple indications. The submission of a new 510(k) is planned to cover the expanded indications for the currently fielded device. Advanced Wound Dressing: Conducting comparative studies for the Advanced Wound Care COTS products (in-vo animal or human studies). ***FY 2016 Plans:*** Oxygen Generator (15 LPM) System: In FY16 transition out of Adv. Development and is to be procured with Army procurement (OPA) funds. Replacement for the M-138 Steam Sterilizer: FDA clearance and MS-C achieved. FRP projected early FY16. Medical Equipment Sets Development: Continue development and testing to ensure the most current and cost effective devices are being utilized. Equipment is selected for modernization based on its own life cycle plan as part of a Sets, Kits and Outfits (SKO). Modernization also occurs if a product will be discontinued, new models will be available and new technology will be developed to meet the users need. TBI Diagnostic Assay System Increment II Point of Care Device: This product is transitioning from Army to Defense Health Program RDTE for further development. Noninvasive Neurodiagnostics TBI: The 3 technologies currently involve the Eye- Tracking System, the QEEG and Balance Platforms. None of these systems are anticipated to be ready at this time for transition to advanced development. Advanced Wound Dressing: Continuing to conduct comparative studies for the Advanced Wound Care commercial products (in-vo animal or human studies). ***FY 2017 Plans:*** Oxygen Generator (15 LPM) System:will undergo airworthiness testing and will be procured with Army procurement (OPA) funds. Medical Equipment Sets COTS Modernization of Life Cycle Equipment: Medical Equipment Sets Development: Will continue development and testing to ensure the most current and cost effective devices are being utilized. Equipment will be selected for modernization based on its own life cycle plan as part of a Sets, Kits and Outfits (SKO). Modernization also occurs if a product will be discontinued, new models will be available and new improved technology will be developed to meet the user's need. Junctional / Noncompressible Hemorrhage Control Agent: Will complete studies to achieve a broader indication, improve device feasibility, increase shelf life, decrease unit price, and improve manufacturing efficiency..			
Title: Field Medical Systems Engineering Development PM Pharmaceuticals	10.294	14.978	13.583

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Funding is provided for engineering and manufacturing development of medical products managed by PM Pharmaceuticals for enhanced combat casualty care and follow-on care, including rehabilitation. ***FY 2015 Accomplishments:*** Cryopreserved Platelets: The development schedule was extended one year due to the FDA requiring an additional safety clinical study. Began Phase 2 efficacy clinical trial in cancer patients with platelet deficiency and continued development of Phase 3 (expanded safety, efficacy and dosing) clinical testing and protocols for pivotal study. Freeze-Dried Plasma Program: Freeze Dried Plasma development effort terminated in FY13 with prime systems contractor due to bankruptcy. Schedule revised for new development effort to begin in FY14 and continued Phase 2b safety clinical study. ***FY 2016 Plans:*** Cryopreserved Platelets: Continue the Phase 2 Efficacy study in patients with complex cardiac bypass and/or thrombocytopenic patients with World Health Organization Grade 2 or higher bleeding. Continue development of Phase 3 (expanded safety, efficacy and dosing) clinical testing and protocols for pivotal study. Freeze-Dried Plasma Program: Continue the Phase 2 (safety and initial efficacy) clinical trials. Continue manufacturing development and validation of Freeze-Dried Plasma batches. ***FY 2017 Plans:*** Cryopreserved Platelets: Will continue the Phase 2 safety and efficacy study in patients with complex cardiac bypass and/or thrombocytopenic patients with World Health Organization Grade 2 or higher bleeding. Will continue development of Phase 3 (expanded safety, efficacy and dosing) clinical testing and protocols for pivotal study. Will begin the manufacturing development and validation of Cryopreserved platelet batches. Freeze-Dried Plasma Program: Will continue the Phase 2 (safety and efficacy) clinical trials and prepare for Phase 3 clinical trial (confirming safety and efficacy in diverse populations). Will continue manufacturing development and validation of Freeze-Dried Plasma batches.			
Title: Field Medical Systems Engineering Development PM Integrated Clinical Systems (ICS) ***Description:*** This project funds the engineering and manufacturing development of medical products managed by PM ICS for enhanced combat casualty care and follow-on care, including rehabilitation. ***FY 2015 Accomplishments:*** Pre-Hospital Medical Informatics Transport: Combat Developers validated requirements for the Pre-Hospital Medical Informatics Transport system. ***FY 2016 Plans:***	1.357	4.923	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Pre-Hospital Medical Informatics Transport: Combat Developers begin the engineering and manufacturing development phase for the Pre-Hospital Medical Informatics Transport.			
Title: Field Medical Systems Engineering Development PM Medical Support Systems	3.223	1.868	6.823
Description: This project funds the engineering and manufacturing development of medical products managed by PM Medical Support Systems for enhanced combat casualty care and follow-on care, including rehabilitation. ***FY 2015 Accomplishments:*** Modernization of medical equipment sets: As part of the medical equipment sets, complete form, fit and function of field medical sink, continued to evaluate commercial litters, cold chain storage devices and commercial items. Airworthiness Testing: Continued to evaluate modernization efforts and conduct airworthiness testing for medical equipment sets Medical Evacuation and Treatment Vehicles Medical Equipment Set and Mission Essential Package with products covering air and ground medical evacuation. Medical Evac and Treatment Vehicles Medical Equipment Set and Mission Essential Package: Continued collaboration with Program Executive Office Combat Support/Combat Service Support (PEO CS/&CSS) and Program Executive Office Ground Combat Systems (PEO GCS) on development efforts for emerging medical vehicle evacuation/casualty evacuation (CASEVAC) package. Environmental Sentinel Biomonitor (ESB): Completed operational testing of the Environmental Sentinel Biomonitor (ESB) and conducted a Milestone C (Engineering, Manufacturing and Development phase review). Milestone C start delayed in FY14. The ESB will assist preventative medicine personnel certify water capabilities by providing a presumptive screening capability that can rapidly identify toxicity in water. Waste Treatment System for the CSH: Develop Waste Treatment System (WTS) for the CSH. The WTS will render liquid and other fluid medical (biohazard) waste products sterile and otherwise inert to the environment in austere, deployed locations. Current methods do mitigate the risk of contamination, but only reduce the levels of agents left behind; they cannot assure total inactivation of all pathogens or the neutralization of chemical agents. Altitude Readiness Management System (ARMS): Completed validation/verification of the Altitude Readiness Management System (ARMS). The ARMS product is a handheld sensor and software decision device to plan, monitor, and manage unit altitude illness risk and task performance prediction. Transition from 836. Improved Vector Trap: Developed prototypes of the Improved Vector Trap for testing. The Improved Vector Trap is a device which allows for the attraction and subsequent collection of disease-carrying insects for disease risk assessment. Transition from 836. Portable Vector Identification Workstation: Began development of field deployable Vector Identification Workstation to provide situational awareness necessary to prevent/mitigate vector borne threats and associated environmental hazards. ***FY 2016 Plans:*** Modernization of medical equipment sets: As part of the medical equipment sets, complete evaluations of commercial litters, cold chain storage devices and commercial items. Airworthiness Testing: Continue to evaluate modernization efforts and conduct airworthiness testing for medical equipment sets Medical Evacuation and Treatment Vehicles Medical Equipment Set and Mission Essential Package with products covering air and ground medical evacuation. Per Army Regulation 70-62, Airworthiness			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Qualification of Aircraft Systems, all "carry-on" equipment, to include medical devices, must have an Airworthiness release. Medical Evac and Treatment Vehicles Medical Equipment Set and Mission Essential Package: Continue collaboration with Program Executive Office (PEO) Combat Support/Combat Service Support (PEO CS&CSS) and PEO Ground Combat Systems (PEO GCS) on development efforts for AMPV evacuation and treatment platforms. Environmental Sentinel Biomonitor (ESB): Finish Advanced Development of Environmental Sentinel Biomonitor with a MS C planned for early FY16 and transition product to procurement. Waste Treatment System for the CSH: Transition from Small Business Innovation Research in FY16 due to delays in development/ prototype evaluation. Start development of Waste Treatment System (WTS) for the Combat Support Hospital. Altitude Readiness Management System (ARMS): Transition the ARMS product to PEO Soldier and closeout the Advance Development effort. Improved Vector Trap: Continue prototype development of Vector Traps for user evaluation. Portable Vector Identification Workstation: Complete user evaluation of the field deployable vector identification workstation and add to Entomology Set. ***FY 2017 Plans:*** Modernization of medical equipment sets (MES): As part of the MES modernization, will evaluate the Combat Support Hospital water distribution system, environmental sampling devices, rodent collection/evaluation products, blood component freezers and commercial items. Airworthiness Testing: Will continue to conduct airworthiness testing for MES and Mission Essential Package (MEP) with products covering air and ground medical evacuation. Per Army Regulation 70-62, Airworthiness Qualification of Aircraft Systems, all "carry-on" equipment, to include medical devices, must have an Airworthiness release. Medical Evac and Treatment Vehicles MES, MEP, and CASEVAC: Will transition from project 836. Will finalize the MES and MEP in collaboration with Program Executive Office Ground Combat Systems (PEO GCS) on development efforts for the Armored Multi-Purpose Vehicle Evacuation and Treatment platforms. Will work with PEO Combat Support/Service Support (CS & CSS) for development and testing of the CASEVAC system for the Joint Light Tactical Vehicle (JLTV). Waste Treatment System (WTS) for the CSH: Product will transition from Rapid Innovation Fund for developmental testing and user evaluation. Improved Flying Vector Trap (IFVT) (Formerly: Improved Vector Tent Traps): Will transition from PE 836. Will complete developmental and user testing of the IFVT. Soldier Optimization Decision Aids (SODA): Will develop and conduct Independent Validation and Verification and limited user testing of the Cold Weather Ensemble Decision Aid and Heat Strain Decision Aid; and prepare for networthiness certification and platform integration in collaboration with PEO Soldier for the Nett Warrior Platform. Hard-Walled Shelter Modernization (Radiation Panel): Will complete developmental and user testing of the Rigid Wall Shelter transportation and vibration modifications.			
Accomplishments/Planned Programs Subtotals	17.689	25.029	23.532

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

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

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 832 / *Field Medical Systems Engineering Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Management Services Cost	Various	Various : Various	27.719	2.483		1.867		3.917		-		3.917	Continuing	Continuing	Continuing
		Subtotal	27.719	2.483		1.867		3.917		-		3.917	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Freeze-dried Human Plasma	Various	HemCon Medical Technologies, Inc, : Tigard OR	32.750	-		0.033		-		-		-	Continuing	Continuing	Continuing
Hypertonic Saline Dextran	Various	National Institutes of Health, National Heart, Lung and Blood Institute (NHLBI) : Various	15.100	-		-		-		-		-	Continuing	Continuing	Continuing
Medical Product Development Cost	Various	Various : Various	4.118	1.124		1.548		-		-		-	Continuing	Continuing	Continuing
Extended Life Red Blood Cell Product	Various	Hemerus Medical, LLC, : Various	3.140	-		-		-		-		-	Continuing	Continuing	Continuing
Cryopreserved Platelets	Various	Clinical Research Management, Inc : Hinckley, OH	1.200	1.784		0.359		1.220		-		1.220	0	4.563	0
Cryopreserved Platelets	Various	Multiple DoD activities and Dartmouth Hitchcock Med Ctr : North Potomac, MD	14.362	-		-		-		-		-	Continuing	Continuing	Continuing
Cryopreserved Platelets	Various	TBD : TBD	1.450	-		0.500		-		-		-	0	1.950	0
Intracellular Hemorrhage Treatment	TBD	TBD : TBD	0.000	-		0.750		-		-		-	0	0.750	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TBI Diagnostic Assay System - Increment II (benchtop/POC/ Bandits)	Various	Banyan BioMarkers, Inc : Alachua, FL	0.373	-		-		-		-		-	0	0.373	0
Noninvasive Neurodiagnostics	TBD	TBD : TBD	0.000	2.647		-		-		-		-	0	2.647	0
Impedance Threshold Device for the Treatment of Traumatic Brain Injury	TBD	Advance Circulatory Systems Inc. : Roseville, MN	0.000	0.335		4.747		-		-		-	0	5.082	0
Pre-Hospital Medical Informatics Transport (Ground Transport Telemedicine)	TBD	TBD : TBD	0.000	0.950		1.586		4.629		-		4.629	0	7.165	0
Advanced wound care	Various	TBD : TBD	0.000	-		-		1.594		-		1.594	0	1.594	0
Junction Noncompressible Hemorrhage	TBD	RevMedX Inc : Wilsonville OR	0.000	-		-		1.550		-		1.550	0	1.550	0
		Subtotal	72.493	6.840		9.523		8.993		-		8.993	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Regulatory Support	Various	Clinical Research Management,Inc,. : Various	5.557	0.659		0.307		1.960		-		1.960	Continuing	Continuing	Continuing
Medical Product Development Support Cost	Various	Various : Various	8.661	-		1.548		-		-		-	Continuing	Continuing	Continuing
Medical Equipment Sets Development	Various	Various : Various	0.455	2.215		-		-		-		-	0	2.670	0
		Subtotal	14.673	2.874		1.855		1.960		-		1.960	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 832 / *Field Medical Systems Engineering Development*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development T&E Cost	Various	Various : Various	14.408	-		1.615		-		-		-	Continuing	Continuing	Continuing
Cryopreserved Platelets	TBD	TBD : TBD	1.150	1.743		6.101		4.865		-		4.865	0	13.859	0
Medical Equipment Sets Development	Various	Various : Various	0.114	1.092		-		-		-		-	0	1.206	0
Freeze Dried Plasma	C/CPFF	TBD : TBD	0.000	2.657		4.068		3.797		-		3.797	0	10.522	0
		Subtotal	15.672	5.492		11.784		8.662		-		8.662	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	130.557	17.689		25.029		23.532		-		23.532	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

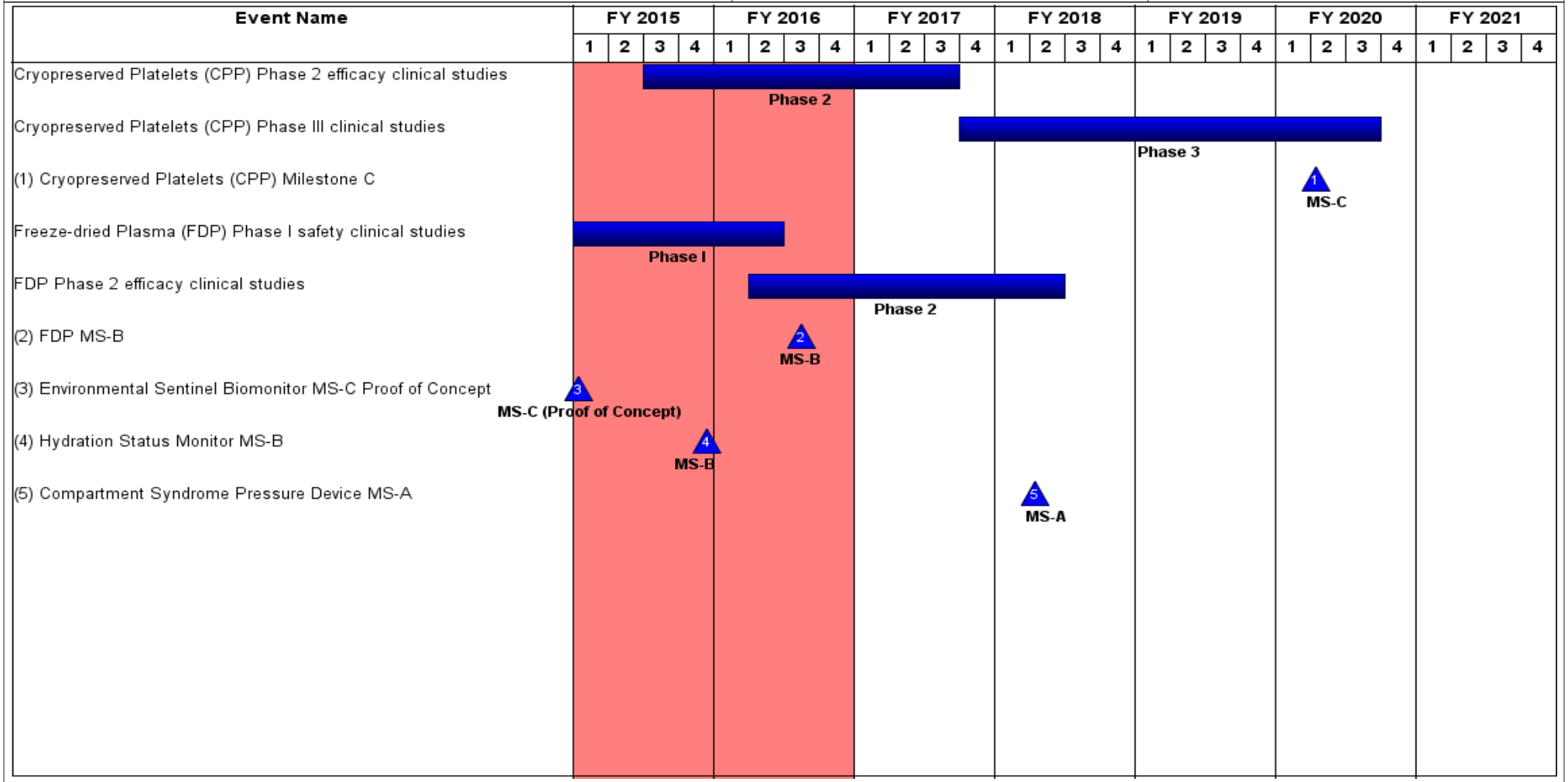

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Cryopreserved Platelets (CPP) Phase 2 efficacy clinical studies	3	2015	3	2017
Cryopreserved Platelets (CPP) Phase III clinical studies	4	2017	3	2020
Cryopreserved Platelets (CPP) Milestone C	2	2020	2	2020
Freeze-dried Plasma (FDP) Phase I safety clinical studies	3	2014	2	2016
FDP Phase 2 efficacy clinical studies	2	2016	2	2018
FDP MS-B	3	2016	3	2016
Environmental Sentinel Biomonitor MS-C Proof of Concept	1	2015	1	2015
Hydration Status Monitor MS-B	4	2015	4	2015
Compartment Syndrome Pressure Device MS-A	2	2018	2	2018

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 849 / *Infec Dis Drug/Vacc Ed*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
849: *Infec Dis Drug/Vacc Ed*	-	10.310	14.953	12.922	-	12.922	13.171	14.821	16.437	16.875	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds development of candidate medical countermeasures for militarily relevant infectious diseases. These products fall within four major areas: vaccines, drugs, diagnostic kits/devices, and determining if insects are infected with pathogenic organisms capable of infecting service members' insect control/preventive medicine measures to limit exposure and disease transmission. It funds research that supports conclusive human clinical trials for large-scale human effectiveness (capacity to produce a desired size of an effect under ideal or optimal conditions) testing, expanded human safety clinical trials, long-term animal studies, and related manufacturing tests. This work, which is jointly performed by military laboratories, civilian contracted pharmaceutical firms and foreign research partners, is directed toward the prevention of disease, early diagnosis, and speeding recovery once diagnosed. Medical products approved for human use must successfully complete a series of clinical trials that are required and regulated by the U.S. Food and Drug Administration (FDA). FDA approval is a mandatory obligation for all military products placed into the hands of medical providers or service members for human use. Development priority is based upon four major factors: (1) the extent of the disease within the Combatant Commands' theater of operations, (2) the clinical severity of the disease, (3) the technical maturity of the proposed solution, and (4) the affordability of the solution (development, production, and sustainment). Malaria, dysentery, hepatitis , and Dengue diseases (a severe debilitating disease transmitted by mosquitoes), which are found in Africa Command, Central Command, European Command, Southern Command, and Pacific Command areas are at the top of the infectious diseases requirements list.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Infectious Disease Drug and Vaccine Engineering Development	10.310	14.953	12.922
Description: Funding for research and development efforts for Drugs and Vaccines. ***FY 2015 Accomplishments:*** Dengue Tetravalent Vaccine (DTV): Continued patient follow up and completed Phase 3 (safety, efficacy, and dosing) pivotal clinical trials and adult/military-specific indication studies. Continued and completed follow up of Phase 2 military-specific / immunological evaluation study in Syracuse, NY. Developed a Biologic License Application (BLA) for US Licensure, developed Final reports, continued trial-related activities and data analysis. Validated Commercial Partner production of batches at their dedicated manufacturing facility. Next Generation Malaria Prophylaxis: Initiated New Drug Application (NDA) preparatory work for a supplemental NDA filing with commercial partner Glaxo-Smith Kline. Halted activities associated with a phase 3 (safety, efficacy, and dosing) studies that is no longer needed. Topical Antileishmanial Cream (TLC, Paromomycin/Gentamicin): Transitioned from project 808 in FY14. Completed Phase 3 (safety, efficacy, and dosing) New World clinical trial in FY15 based on additional guidance and requirements from the FDA. Conducted MS-C decision review and submit New Drug Application to the FDA. Leishmania Rapid Diagnostic Device (LRDD): Completed fielding/delivery of Leishmania Rapid Diagnostic Device.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 849 / *Infec Dis Drug/Vacc Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Antimalarial Drug, Artesunate Intravenous: Conducted MS-C decision review and submit New Drug Application to the FDA sent in FY14. Plan to obtain FDA approval in FY15 and began fielding/delivery of Antimalarial Drug, Artesunate Intravenous. Preventive Medicine advanced detection devices: For the control/mitigation of arthropod (insect) borne diseases, began field testing and evaluation. Preventive Medicine advanced pesticides: Began field testing and evaluation. Preventive Medicine spatial repellents: Began field testing and evaluation. Preventive Medicine arthropod collection devices: Began field testing and evaluation. Infectious Disease Diagnostic products: Began field testing and evaluation of several product candidates to include: Scrub Typhus, Rickettsiae, and Sand Fly Fever.			
FY 2016 Plans: Dengue Tetravalent Vaccine (DTV): Complete Phase 3 (safety, efficacy, and dosing) pivotal clinical trials and adult/military-specific indication studies. Submit the master file (product documentation) for endemic countries to the FDA. Complete Milestone C package. Develop Biologic License Application (BLA) for US Licensure. Final reports near completion for BLA submission in FY17 to the FDA. Commercial Partner to produce validation lots at their dedicated manufacturing facility. Next Generation Malaria Prophylaxis: Continue to complete New Drug Application preparatory work for filing with the FDA. Initiate a retinal safety study in 2016 and prepare the protocols for required soldier specific studies that need to be completed. Topical Antileishmanial Cream (TLC, Paromomycin/Gentamicin): Complete the New Drug Application submission package and submit to the FDA for approval. Validate the manufacturing process for commercial production of the cream. Continue the expanded access and treatment protocols through FY 16. Antimalarial Drug, Artesunate Intravenous: Support FDA inquiries during the review process of the New Drug Application. Work with the commercial partner to support marketing and distribution plans for the drug. Preventive Medicine advanced detection devices: These products fall into the category military operational requirements and are Commercial-Off-The-Shelf (COTS). As such, they have moved to a more appropriate Program Element (PE 836 or 832) and will be listed as separate products when they are considered for military use. Preventive Medicine advanced pesticides: These products fall into the category military operational requirements and are Commercial-Off-The-Shelf (COTS). As such, they have moved to a more appropriate Program Element (PE 836 or 832) and will be listed as separate products when they are considered for military use. Preventive Medicine spatial repellents: These products fall into the category military operational requirements and are Commercial-Off-The-Shelf (COTS). As such, they have moved to a more appropriate Program Element (PE 836 or 832) and will be listed as separate products when they are considered for military use. Preventive Medicine arthropod collection devices: These products fall into the category military operational requirements and are Commercial-Off-The-Shelf (COTS). As such, they have moved to a more appropriate Program Element (PE 836 or 832) and will be listed as separate products when they are considered for military use. Diagnostic products: Delays in the previous year's transition for infectious disease diagnostic products due to product maturity. Begin field testing and evaluation of several product candidates to include: Scrub Typhus, Rickettsiae, and Sand Fly Fever. Dengue Vaccine Block II: Prepare for human challenge efforts to show vaccine efficacy and animal studies			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 849 / *Infec Dis Drug/Vacc Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
to determine correlates of immunity in preparation for Phase III (safety, efficacy, and dosing) clinical trials. Arthropod Control/ Surveillance: Begin field testing and evaluation of a Dengue Rapid Diagnostic. ***FY 2017 Plans:*** Dengue Tetravalent Vaccine (DTV): Will continue to fund Block I Dengue Tetravalent Vaccine until FY18. Funding will cover the additional two-year volunteer follow-up and data analysis on pivotal Phase 3 safety and effectiveness clinical trials as well as analysis and submission of adult military/traveler phase 2 (safety and efficacy) data aimed toward FDA licensure (Key Performance Parameter) . Will continue to work with the commercial partner to support FDA submissions, marketing and distribution plans for the vaccine. Will start planning for potential MS C in FY17; fielding anticipated FY18. Next Generation Malaria Prophylaxis: Will continue to complete New Drug Application preparatory work for filing with the FDA. Will continue the retinal safety study started in FY16 and will prepare the protocols for required soldier specific studies that need to be completed. Will start planning for potential MS C in FY17. Topical Antileishmanial Cream (TLC, Paromomycin/Gentamicin): The planned submission of the New Drug Application (NDA) did not occur in FY16 due to the loss of a manufacturing subcontractor. The NDA submission package will be completed and submitted to the FDA for approval in FY17. The manufacturing process will be validated in preparation for commercial production of the cream. The expanded access treatment protocol will continue through FY 17. Antimalarial Drug, Artesunate Intravenous: Will continue to support FDA inquiries during the review process of the New Drug Application. Will continue to work with the commercial partner to support marketing and distribution plans for the drug. Infectious Disease Diagnostic products: In FY17 products within this area will move to the Rapid Diagnostic and Detection Devices. Development (clinical performance testing) of a rapid human dengue diagnostic device will be anticipated. Dengue Vaccine Block II: Development of additional dengue human challenge strains will continue. Evaluation of vaccine candidates through performance of dengue human challenge studies in preparation for Phase III (safety, efficacy, and dosing) clinical trials. Rapid Diagnostic and Detection Devices: Will continue field testing and evaluation of several product candidates to include: dengue, chikungunya and leptospirosis.			
Accomplishments/Planned Programs Subtotals	10.310	14.953	12.922

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Test and evaluate in-house and commercially developed products in government-managed trials to meet FDA requirements and Environmental Protection Agency registration.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 849 / *Infec Dis Drug/Vacc Ed*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 849 / *Infec Dis Drug/Vacc Ed*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Management Services Cost	Various	Various : Various	18.881	0.265		0.712		0.792		-		0.792	Continuing	Continuing	Continuing
Medical Product Development Management Services Cost	C/CPFF	General Dynamics Information Technology : Frederick MD	0.000	1.012		2.263		3.153		-		3.153	0	6.428	0
		Subtotal	18.881	1.277		2.975		3.945		-		3.945	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Cost	Various	Various : Various	32.844	1.200		2.007		1.000		-		1.000	Continuing	Continuing	Continuing
Topical Antileishmanial Drug	TBD	TBD : TBD	2.400	-		-		-		-		-	0	2.400	0
Topical Antileishmanial Drug	C/TBD	Advantar Laboratories, INC : TBD	0.000	1.229		0.662		0.316		-		0.316	0	2.207	0
Dengue Tetravalent Vaccine	TBD	TBD : TBD	0.000	1.399		0.648		-		-		-	0	2.047	0
Hemorrhagic Fever W/ Renal Syndrome	C/TBD	TBD : TBD	0.000	-		1.000		-		-		-	0	1.000	0
		Subtotal	35.244	3.828		4.317		1.316		-		1.316	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Support Cost	Various	Various : Various	17.187	0.690		1.503		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 849 / *Infec Dis Drug/Vacc Ed*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Support Cos	PO	Clinical Research Management, In : Hinckley, OH	0.000	3.168		0.287		1.308		-		1.308	0	4.763	0
		Subtotal	17.187	3.858		1.790		1.308		-		1.308	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development T&E Cost	Various	Various : Various	37.649	1.347		2.725		3.593		-		3.593	Continuing	Continuing	Continuing
Dengue Tetravalent Vaccine	TBD	WRAIR/AFRIMS : Silver Spring MD	0.000	-		-		0.881		-		0.881	0	0.881	0
Dengue Tetravalent Vaccine	C/TBD	TBD : TBD	0.000	-		-		1.879		-		1.879	0	1.879	0
Product Development of Dengue Tetravalent Vaccine	Various	TBD : TBD	1.384	-		3.146		-		-		-	0	4.530	0
		Subtotal	39.033	1.347		5.871		6.353		-		6.353	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	110.345	10.310		14.953		12.922		-		12.922	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 849 / *Infec Dis Drug/Vacc Ed*

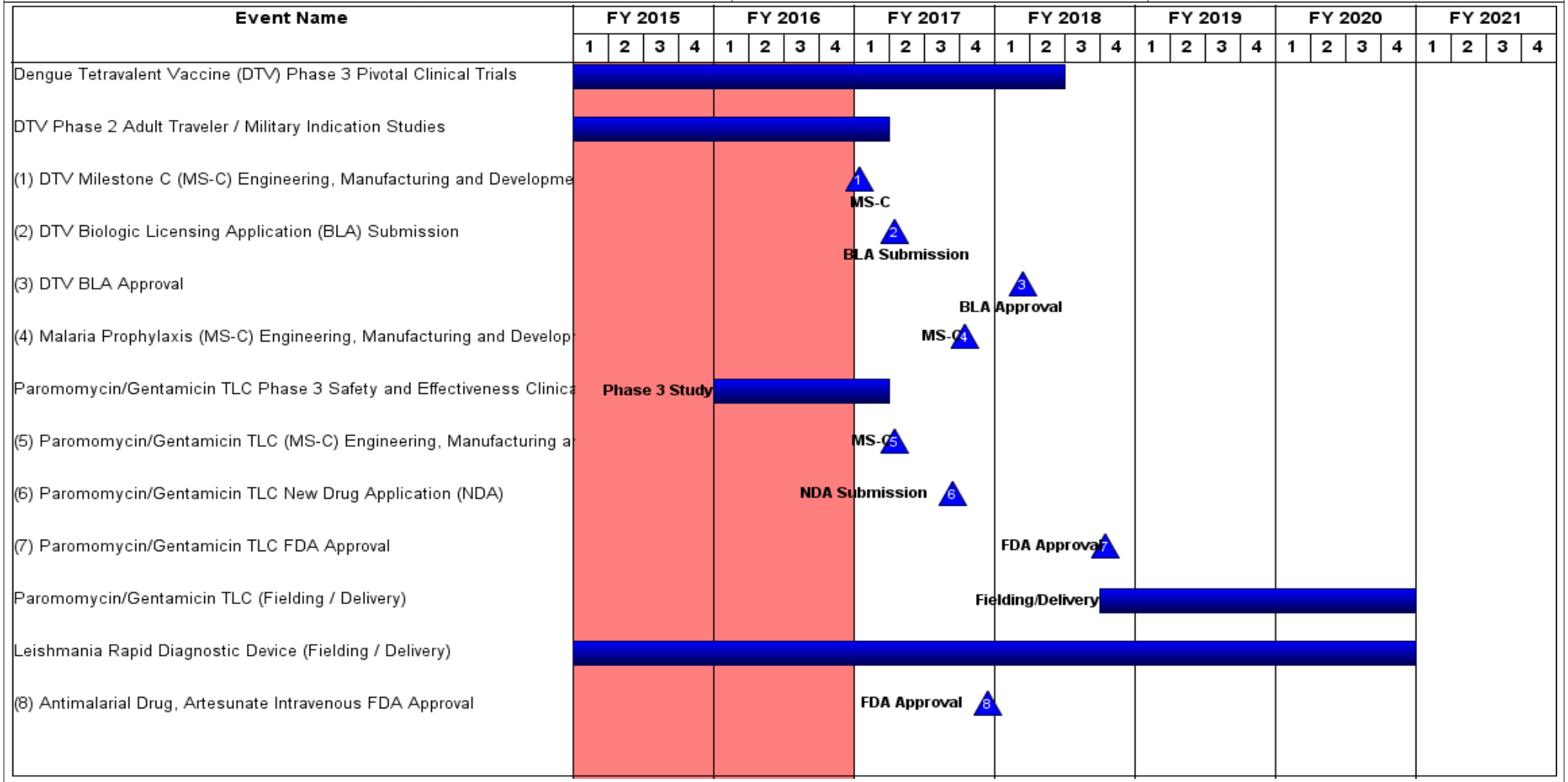

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 849 / *Infec Dis Drug/Vacc Ed*

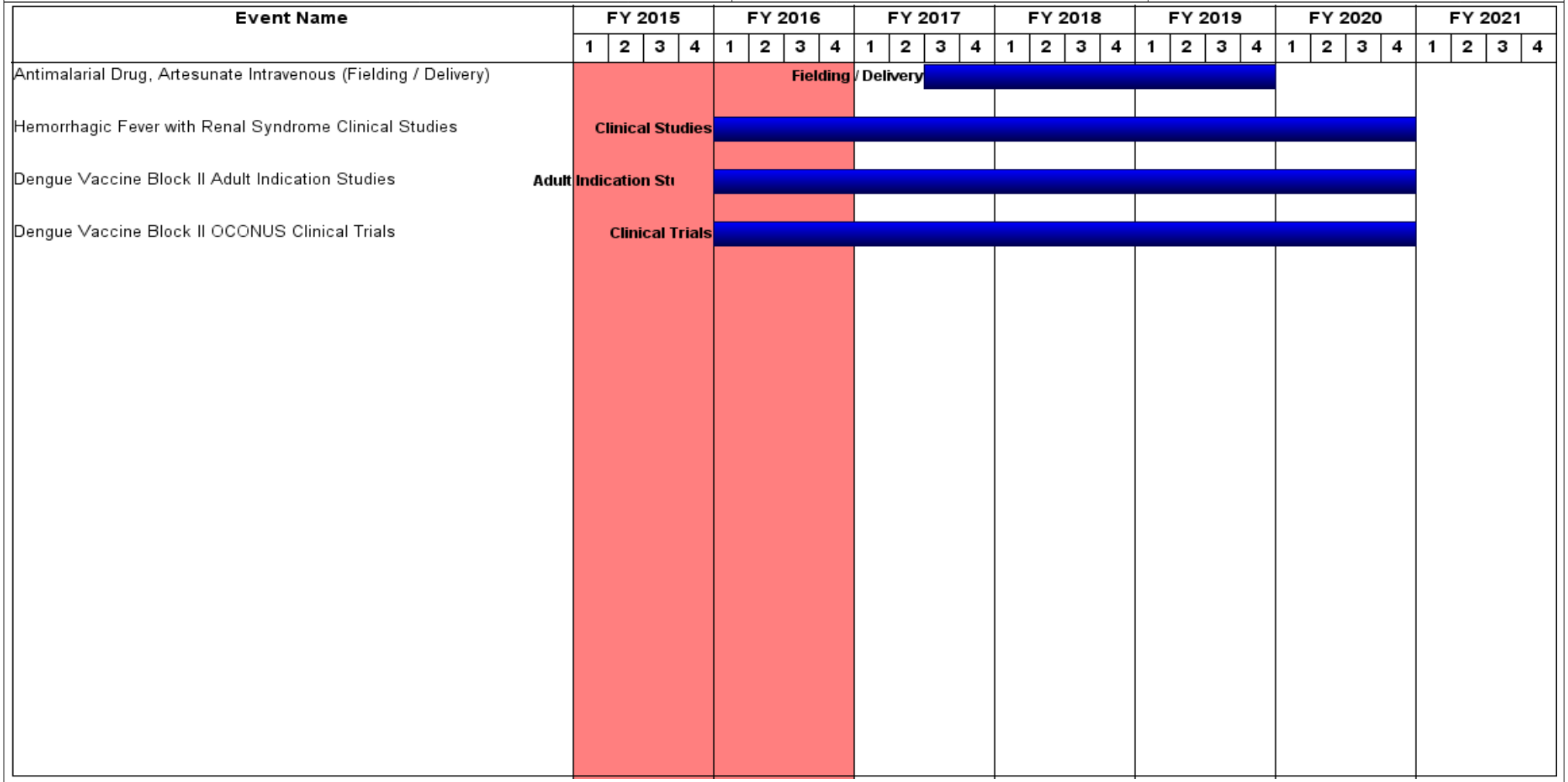

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 849 / *Infec Dis Drug/Vacc Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Dengue Tetravalent Vaccine (DTV) Phase 3 Pivotal Clinical Trials	1	2011	2	2018
DTV Phase 2 Adult Traveler / Military Indication Studies	2	2012	1	2017
DTV Milestone C (MS-C) Engineering, Manufacturing and Development phase review	1	2017	1	2017
DTV Biologic Licensing Application (BLA) Submission	2	2017	2	2017
DTV BLA Approval	1	2018	2	2018
Malaria Prophylaxis (MS-C) Engineering, Manufacturing and Development phase	4	2017	4	2017
Paromomycin/Gentamicin TLC Phase 3 Safety and Effectiveness Clinical Trial	1	2016	1	2017
Paromomycin/Gentamicin TLC (MS-C) Engineering, Manufacturing and Development	2	2017	2	2017
Paromomycin/Gentamicin TLC New Drug Application (NDA)	3	2017	3	2017
Paromomycin/Gentamicin TLC FDA Approval	4	2018	4	2018
Paromomycin/Gentamicin TLC (Fielding / Delivery)	4	2018	4	2020
Leishmania Rapid Diagnostic Device (Fielding / Delivery)	1	2015	4	2020
Antimalarial Drug, Artesunate Intravenous FDA Approval	4	2017	4	2017
Antimalarial Drug, Artesunate Intravenous (Fielding / Delivery)	3	2017	4	2019
Hemorrhagic Fever with Renal Syndrome Clinical Studies	1	2016	4	2020
Dengue Vaccine Block II Adult Indication Studies	1	2016	4	2020
Dengue Vaccine Block II OCONUS Clinical Trials	1	2016	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) VS8 / *MEDEVAC Mission Equipment Package (MEP) - End Dev*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
VS8: *MEDEVAC Mission Equipment Package (MEP) - End Dev*	-	0.000	0.399	0.113	-	0.113	0.114	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Interim MEDEVAC Mission Support System (IMMSS)	-	0.399	0.113
Description: Interim MEDEVAC Mission Support System (IMMSS) - Patient Handling System for safely handling patient through a system of seats, patient litters etc. ***FY 2016 Plans:*** Any modifications to the IMMSS that are made based on new paramedic skills will require validation and verification. Develop plans for required validation and verification to address the new paramedic skills. ***FY 2017 Plans:*** Interim MEDEVAC Mission Support System (IMMSS): Will complete validation study to verify IMMSS supports Medical Evacuation En Route Care.			
Accomplishments/Planned Programs Subtotals	-	0.399	0.113

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

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

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** VS8 / *MEDEVAC Mission Equipment Package (MEP) - End Dev*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) VS8 / *MEDEVAC Mission Equipment Package (MEP) - End Dev*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MEDEVAC Mission Sensor Forward Looking Infrared	TBD	Redstone Arsenal, : AL	1.721	-		0.399		-		-		-	0	2.120	0
		Subtotal	1.721	-		0.399		-		-		-	0.000	2.120	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Support Cost	SS/UCA	Redstone Arsenal : AL	0.621	-		-		-		-		-	0	0.621	0
		Subtotal	0.621	-		-		-		-		-	0.000	0.621	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IMMSS test and evaluation	TBD	Redstone Arsenal : AL	0.000	-		-		0.113		-		0.113	0	0.113	0
		Subtotal	0.000	-		-		0.113		-		0.113	0.000	0.113	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.342	-		0.399		0.113		-		0.113	0.000	2.854	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** VS8 / *MEDEVAC Mission Equipment Package (MEP) - End Dev*

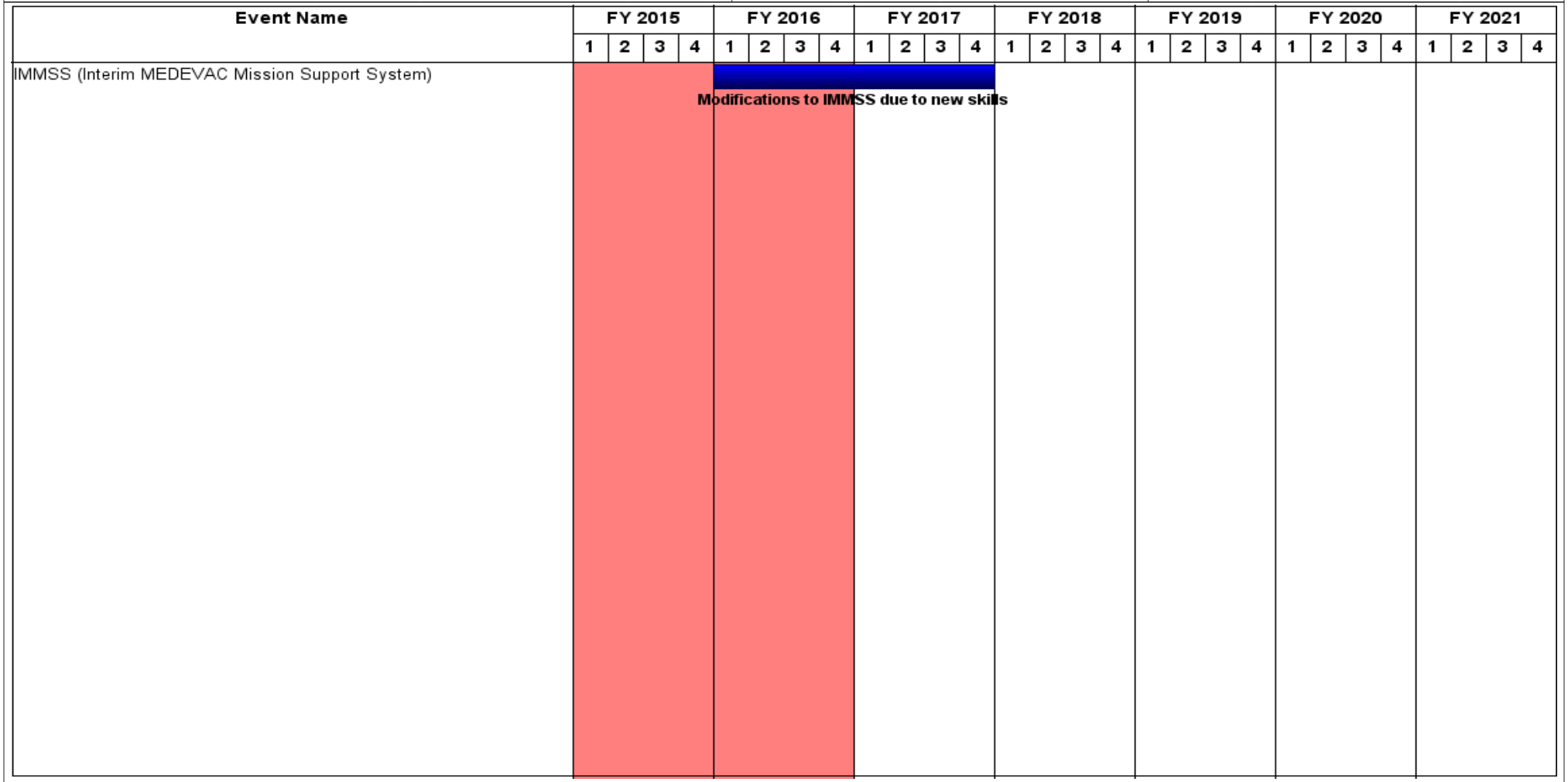

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** VS8 / *MEDEVAC Mission Equipment Package (MEP) - End Dev*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IMMSS (Interim MEDEVAC Mission Support System)	1	2016	4	2017

Note

Modifications to IMMSS based on new approved paramedic skills for medical personnel

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	53.579	55.215	39.630	-	39.630	33.464	32.025	46.636	41.533	Continuing	Continuing
016: *Close Combat Capabilities ENG DEV*	-	0.000	1.629	2.772	-	2.772	2.000	0.000	0.000	0.000	0.000	6.401
415: *Mine Neutral/Detection*	-	43.314	49.296	36.858	-	36.858	31.464	32.025	46.636	41.533	Continuing	Continuing
434: *Anti-Personnel Landmine Alternatives (NSD)*	-	10.265	4.290	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.555

Note

The FY 2017 funding request was reduced by $2.500 million to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

This program element (PE) provides for the engineering and manufacturing development (EMD) and demonstration of networked munitions, countermine systems, and counter improvised explosive device capabilities. This PE also implements the National Landmine Policy to develop alternatives to the non-self-destructing counter mobility anti-personnel landmine systems. The PE contributes to area access and area denial (A2/AD) to support unified land operations and improve soldier survivability.

Project 016, Close Combat Capabilities provides for developing improvements to legacy dismounted lane breaching, specifically the Anti-Personnel Obstacle Breaching System (APOBS), and in so doing, provides a pathway to the next generation of dismounted lane breaching systems such as the Rapid Assault Lane Line Charge (RALLC) and the Dismounted Explosive Breaching System (DEBS). The efforts will address capability gaps identified during combat operations and will focus on weight reduction, improved scalability, collateral damage reduction, metallic content elimination, deployment accuracy improvement, and increased effectiveness against the current threat.

Project 415, Mine Neutralization/Detection provides for development of next generation standoff, detection, and neutralization capability programs such as Husky Mounted Detection System (HMDS), Route Clearance & Interrogation System (RCIS), Man-Transportable Robotic System (MTRS)Inc II, Vehicle Optics Sensor System (VOSS), Autonomous Mine Detection System (AMDS), Route Clearance Vehicles (RCV) and Enablers, Multi-Function Video Display (MVD) and Add on Armor (AoA) kits. It also supports development of Explosive Hazard Pre-Detonation (EHP) capability to neutralize/detonate a broad spectrum of improvised explosive hazards while on the move to support area access route clearance missions.

Project 434, Spider Increment 1A will build upon the existing M7 Spider system. The M7 Spider system is a hand-emplaced, remotely controlled (Man-In-The-Loop) system that provides highly responsive terrain-shaping and protection capabilities. M7 Spider replaces persistent anti-personnel landmines, is compliant with US National Landmine policy, and has been fielded to US forces in support of Operation Enduring Freedom and currently being fielded to Engineers and Brigade Combat Teams in the Active and Army National Guard components. Additional capabilities will be developed to enhance the Spider Remote Control Station and demonstrate

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604808A *I Landmine Warfare/Barrier - Eng Dev*

the ability to employ legacy Government-Off-The-Shelf (GOTS) lethal and non-lethal anti-personnel (AP) munitions and counter mobility obstacles. Spider Increment 1A will utilize an open system architecture to facilitate future munition integration. Spider Increment 1A completed documentation efforts for the Non-Lethal Launcher (NLL) XM809 and XM810 contract activities in support of Type Classification.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	57.674	55.215	45.750	-	45.750
Current President's Budget	53.579	55.215	39.630	-	39.630
Total Adjustments	-4.095	0.000	-6.120	-	-6.120
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.869	-			
• SBIR/STTR Transfer	-2.226	-			
• Adjustments to Budget Years	-	-	-6.120	-	-6.120

Change Summary Explanation

FY 2015: Budget supports Project 415, Mine Neutral/Detection, and Project 434, Anti-Personnel Landmine Alternatives (NSD).

FY 2016: Budget supports Project 016, Close Combat Capabilities, Project 415, Mine Neutral/Detection, and Project 434, Anti-Personnel Landmine Alternatives (NSD).

FY 2017: Budget supports Project 016, Close Combat Capabilities, and Project 415, Mine Neutral/Detection.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 016 / *Close Combat Capabilities ENG DEV*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
016: *Close Combat Capabilities ENG DEV*	-	0.000	1.629	2.772	-	2.772	2.000	0.000	0.000	0.000	0.000	6.401
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Close Combat Capabilities Engineering Development project develops improvements to legacy dismounted lane breaching, specifically the Anti-Personnel Obstacle Breaching System (APOBS), and in so doing, provides a pathway to the next generation of dismounted lane breaching systems such as the Rapid Assault Lane Line Charge (RALLC) and the Dismounted Explosive Breaching System (DEBS). These efforts will address capability gaps identified during combat operations and will focus on weight reduction, improved scalability, collateral damage reduction, metallic content elimination, deployment accuracy improvement, and increased effectiveness against the current threat.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Dismounted Lane Breaching System	-	1.629	2.772
Description: Develops materiel solutions that address operational issues with APOBS related to its weight, lack of scalability, collateral damage, residual metallic debris, deployment accuracy, and effectiveness. ***FY 2016 Plans:*** Perform trade studies/cost-benefit analyses to prioritize user identified capability gaps and the material solutions that address them; Prepare Preliminary Design; Prepare contract Statement of Work (SOW); Draft Test Plans. ***FY 2017 Plans:*** Finalize design; Award contract for qualification hardware; Build qualification hardware; Finalize test plans; Begin preparation for qualification testing.			
Accomplishments/Planned Programs Subtotals	-	1.629	2.772

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Acquisition strategy is for developing product improvements such as making the system lighter and more module to the Antipersonnel and Obstacle breeching System. These improvements will then be incorporated into the technical data package for future procurements.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 016 / *Close Combat Capabilities ENG DEV*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dismounted Lane Breaching System - Program Management	MIPR	PM CCS : Picatinny Arsenal, NJ	0.000	-		0.100		0.300	Nov 2016	-		0.300	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.100		0.300		-		0.300	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dismounted Lane Breaching System - Preliminary Design Efforts	MIPR	ARDEC : Picatinny Arsenal, NJ	0.000	-		1.100		-		-		-	Continuing	Continuing	Continuing
Dismounted Lane Breaching System - Qualification Hardware	C/FFP	TBD : TBD	0.000	-		-		0.900	May 2017	-		0.900	0	0.900	0
Dismounted Lane Breaching System - Rocket Design	MIPR	NSWC : Indian Head, MD	0.000	-		-		0.100	Jan 2017	-		0.100	0	0.100	0
		Subtotal	0.000	-		1.100		1.000		-		1.000	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dismounted Lane Breaching System - Trade Studies, SOW and Test Plan Prep	MIPR	ARDEC : Picatinny Arsenal, NJ	0.000	-		0.429		-		-		-	Continuing	Continuing	Continuing
Dismounted Lane Breaching System - Logistics, Packaging, System Eng.	MIPR	ARDEC : Picatinny Arsenal, NJ	0.000	-		-		0.750	Jan 2017	-		0.750	0	0.750	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dismounted Lane Breaching System - Configuration Management	MIPR	NSWC : Dahlgren, VA	0.000	-		-		0.041	Jan 2017	-		0.041	0	0.041	0
		Subtotal	0.000	-		0.429		0.791		-		0.791	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dismounted Lane Breaching System - Qualification Test	C/TBD	TBD : TBD	0.000	-		-		0.681	Jun 2017	-		0.681	0	0.681	0
		Subtotal	0.000	-		-		0.681		-		0.681	0.000	0.681	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		1.629		2.772		-		2.772	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

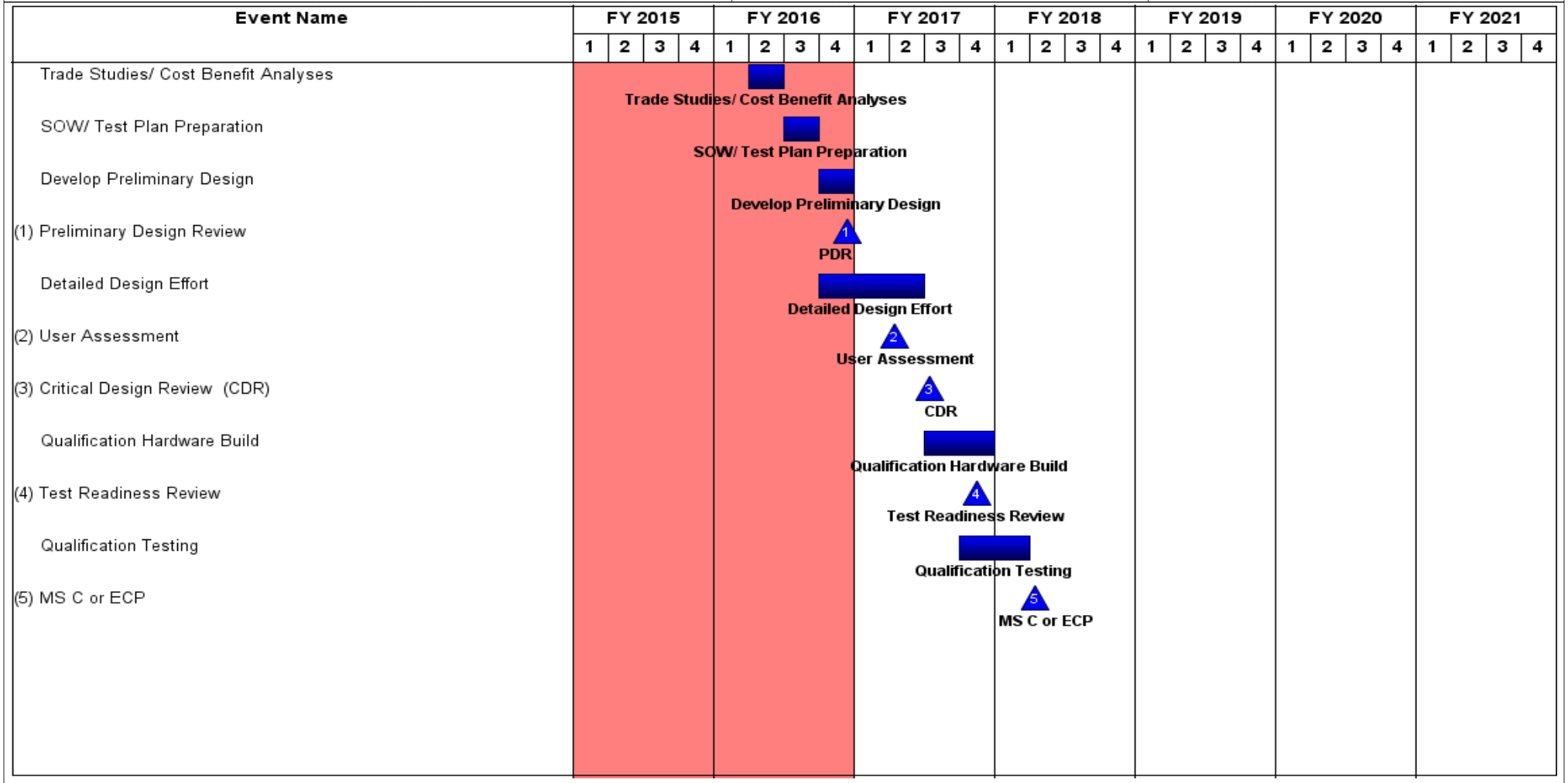

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Trade Studies/ Cost Benefit Analyses	2	2016	2	2016
SOW/ Test Plan Preparation	3	2016	3	2016
Develop Preliminary Design	4	2016	4	2016
Preliminary Design Review	4	2016	4	2016
Detailed Design Effort	4	2016	2	2017
User Assessment	2	2017	2	2017
Critical Design Review (CDR)	3	2017	3	2017
Qualification Hardware Build	3	2017	4	2017
Test Readiness Review	4	2017	4	2017
Qualification Testing	4	2017	1	2018
MS C or ECP	2	2018	2	2018

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
415: *Mine Neutral/Detection*	-	43.314	49.296	36.858	-	36.858	31.464	32.025	46.636	41.533	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The FY 2017 funding request was reduced by $2.500 million to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

This Project provides for Engineering Manufacturing and Development (EMD) for the next generation of capabilities to detect, identify and neutralize hybrid threats and explosive hazards such as Improvised Explosive Devices (IEDs) and landmines. These capabilities are a Family of Systems (FOS) encompassing handheld, vehicle mounted, small robotic mounted, aerial platform mounted and area access, and neutralization systems operating in manned, remotely controlled, semi-autonomous or fully autonomous modes. Continued development of this FOS is necessary to support Route Clearance Platoons located within both Engineer Companies and Brigade Engineering Battalion Brigade Combat Teams.

The Husky Mounted Detection System (HMDS) is a counter-explosive device capability that provides standoff detection and marking of metallic and low-metallic surface-laid and shallow-buried antitank landmines, unexploded ordnance, trigger mechanisms, and deep buried metallic improvised explosive devices (IEDs) and metallic encased caches in support of route and area-clearance operations. It provides area access and freedom of movement for the Commander. HMDS is a mission equipment package, mounted on the Husky route clearance vehicle, which consists of Shallow Buried Detection capability, Deep Buried Detection (DBD) capability, and Semi-Autonomous Control (SAC) capability. Program is broken out into three increments. The Shallow Buried capability (Increment A1) will detect and accurately mark a broad spectrum of suspected explosive hazards and trigger mechanisms in a wider range of road surfaces and varying soil conditions. The DBD capability (Increment A2) will detect and accurately mark suspected deep buried metallic Improvised Explosive Devices (IEDs) and metallic encased caches. The SAC capability (Increment B) will enable an operator to remotely and semi-autonomously control all functions of the Husky and HMDS from inside the Mine Protected Clearance Vehicle (MMPV) Type II, improving survivability of the operator during the detection mission. The HMDS Common Operating Group (COG) is comprised of the Common Installation Kits, DBD Trainer, Ground Penetrating Radar (GPR) Trainer, and Wire Detect (WD) Trainer. The Army Acquisition Objective for the components are as follows: GPR trainer (666), GPR (325), WD (325), DBD (175), SAC (325), and COG (666).

The Route Clearance & Interrogation System (RCIS) consists of two semi-autonomous vehicles, designated control vehicles and an Operator Control Unit (OCU) which provide a standoff capability to detect and neutralize the full spectrum of explosive hazards. RCIS Type I and Type II are being procured as separate increments. Type I integrates a semi-autonomous kit onto a High Mobility Engineering Excavator (HMEE) for control remotely from a modified Buffalo Mine Protected Clearance Vehicle (MPCV). RCIS Type I semi-autonomous kit will be integrated onto the HMEE and be capable of interrogating and classifying explosive hazards. Type II integrates a semi-autonomous kit on a route clearance lead Medium Mine Protected Vehicle (MMPV) for operation from another MMPV. The RCIS Type II semi-autonomous kit will be able to detect, neutralize and proof explosive hazards. The OCU will be integrated into both a Buffalo MPCV for Type I and MMPV for Type II . RCIS capabilities will be fielded to Route Clearance Squads and Engineer Platoons.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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The Man-Transportable Robotic System (MTRS) Inc II is a modular system providing a multitude of standoff capabilities through different payloads for the Army. These capabilities include detect and confirm presence, identify disposition and counter hazards by providing a platform for payloads in support of current and future mission requirements. Additionally, MTRS Inc II will support current and future payload missions for the engineer's route clearance platoons, Special Operational Forces (SOF) detachments and Chemical Biological Radiological and Nuclear (CBRN) Units. In addition, the Explosive Ordnance Disposal (EOD) TRADOC Capabilities Manager has identified that the EOD will participate in MTRS In II buy.

The Vehicle Optics Sensor System (VOSS) provides a telescoping, gyro-stabilized, high-resolution, triple sensor (daylight, night-vision, and thermal-imaging) surveillance system to optically detect from standoff distances, explosive hazards (IEDs and landmines) and their trigger sources. VOSS will be mounted on the MMPV Type I for Explosive Ordnance Disposal (EOD) and MMPV Type II for Engineers. VOSS will qualify a Geo-location capability, and develop and integrate a new less costly, more reliable, sustainable and durable Infrared (IR) camera.

The Multifunction Video Display (MVD) provides view/control capability of the enablers (Interrogation Arms, VOSS, Man Transportable Robotic System, Drivers Vision Enhancement, Vehicle Situational Awareness Cameras) in the MMPV Type II to all Operators. New capabilities will be added into that display to view and control future Unmanned Ground Vehicle Systems (UGVs) programs Route Clearance & Integration System (RCIS) and Husky Mounted Detection System (HMDS), Explosive Hazard Pre-Detonation (EHP) Roller and view Unmanned Aerial Vehicles video feeds. Additional software will need to be developed to add these capabilities. In addition, a new capability to push the video feeds of all of the enablers (Interrogation Arms, VOSS, Man Transportable Robotic System, Drivers Vision Enhancement and Vehicle Situational Awareness Cameras) from various vehicles within a Route Clearance Patrol will be developed.

Route Clearance Vehicle (RCV) & Enabler Improvements: Develop the hardware used to improve POR RCVs and Enablers
- Develop product upgrades to MMPV Type II Interrogation Arm
- Next Generation HMDS A2 to include Deep Buried Detection on the Husky and semi-autonomous control capability on the Husky and MMPV Type II
- Explosive Hazard Pre-Detonation (EHP) Equipment upgrades

Force Protection Improvements/Add On Armor (AoA) to execute system level design cycle for rocket propelled grenade (RPG) and explosive formed projectiles (EFP) AoA kits for Husky and Buffalo. Explosive Hazard Pre-Detonation (EHP) capability to include a debris blower, Wire Neutralization System (WNS) and Mine Roller to neutralize/detonate a broad spectrum of improvised explosive hazards while on the move, to support route clearance mission.

Autonomous Mine Detection System (AMDS) provides increased survivability through mine and explosive hazards stand-off detection, marking and neutralization capability for the dismounted soldier. It provides area access and freedom of movement for the Commander. AMDS consists of payload modules to be mounted on man-portable unmanned ground vehicles. The payloads are for surface laid and buried threats to include mines and explosive hazards. AMDS transitioned from Technical Development to Engineering and Manufacturing Development (EMD) in FY 2014. This capability allows a soldier to remain in a protective posture while detecting and neutralizing a wide variety of hybrid and conventional explosive threats.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: HMDS System Engineering & Program Management Support	10.077	11.543	5.969

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: HMDS System Engineering & Program Management Support ***FY 2015 Accomplishments:*** Engineering Manufacturing Development (EMD); Risk Reduction Testing ***FY 2016 Plans:*** Engineering Manufacturing Development (EMD); Critical Design Review ***FY 2017 Plans:*** System Engineering and Program Management including matrix support.			
Title: HMDS Increment A, Configuration 1, Ground Penetrating Radar (GPR) ***Description:*** HMDS Increment A, Configuration 1, Ground Penetrating Radar (GPR) ***FY 2015 Accomplishments:*** GPR (Upgrade) Trainer Testing ***FY 2017 Plans:*** Technical Support to Husky Vehicles	0.500	-	0.203
Title: HMDS Increment A, Configuration 1 Ground Penetrating Radar ***Description:*** HMDS Increment A, Configuration 2 ***FY 2015 Accomplishments:*** GPR (Upgrade) Trainer Testing ***FY 2016 Plans:*** Critical Design Review (CDR) and Developmental Testing (DT) ***FY 2017 Plans:*** HMDS A2 CDR1 for Ground Penetrating Radar (GPR), Deep Buried Detector (DBD), and Installation Kit; Risk Reduction Testing.	14.700	7.784	2.286
Title: HMDS Training Aids, Devices, Simulators and Simulations (TADSS) ***Description:*** PEO STRI to develop trainer. ***FY 2016 Plans:***	-	4.776	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Virtual Clearance Training Suite (VCTS), Explosive Hazard Replicated Target Set (EHRTS), Interactive Multimedia Instruction (IMI)			
Title: HMDS A1 Tactical GPR: Engineer Change Proposal (ECP) to add Wire Detection and Infrared Illumination ***Description:*** HMDS A1 Tactical GPR: Engineer Change Proposal (ECP) to add Wire Detection and Infrared Illumination ***FY 2017 Plans:*** HMDS A1 Tactical GPR: Engineer Change Proposal (ECP) to add Wire Detection and Infrared Illumination	-	-	2.597
Title: HMDS A1 Trainer: Add Wire Detection and develop logistics materials ***Description:*** HMDS A1 Trainer: Add Wire Detection and develop logistics materials ***FY 2017 Plans:*** HMDS A1 Trainer: Add Wire Detection and develop logistics materials	-	-	0.440
Title: RCIS Type I & MTRS Inc II ***Description:*** RCIS Type I & MTRS ***FY 2015 Accomplishments:*** RCIS Type I : MS B preparation, Engineering and Development (EMD) contract preparation, Request For Proposal (RFP) preparation, HMEE platform upgrades, risk reduction testing, System Integration Laboratory (SIL) design/build, PM support and Interoperability. MTRS Inc II: RFP development, scope of work development and Milestone B/C documentation preparation, Risk reduction efforts and PM support. IOP instantiation. Analytical studies and documentation to support pre-Materiel Development Decision (MDD) activities for emerging programs and Capability Development Documents (CDDs)/Capability Production Documents (CPDs) leading up to Milestone Decision Authority (MDA) designation and successful MDDs. ***FY 2016 Plans:*** RCIS Type I: Engineering and Manufacturing Development (EMD), Request for Proposal (RFP) release, Source Selection Evaluation Board (SSEB), upgrade and testing of HMEE platform for EMD, PM support and Interoperability. MTRS Inc II: development, RFP approval, Source Selection Evaluation Board, Risk Reduction efforts and PM support. IOP instantiation and design reviews.Analytical studies and documentation to support pre-Materiel Development Decision (MDD) activities for emerging programs and Capability Development Documents (CDDs)/Capability Production Documents (CPDs) leading up to Milestone Decision Authority. ***FY 2017 Plans:***	8.888	13.691	16.970

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
RCIS Type I: EMD contract award, Preliminary Design Review (PDR), design and integration and PM support. RCIS funding $7.801 million. MTRS Inc II: Source Selection Evaluation Board, contract award and preparation for Preliminary Design Review. MTRS Inc II funding $9.168 million.			
Title: VOSS Geo-Location Capability & Infrared Camera Replacement ***Description:*** VOSS capability to determine location of explosive hazards and IR Camera Replacement ***FY 2016 Plans:*** Spec Development, Interface Control Document (ICD), integration and prototypes for Geo-location capability. ***FY 2017 Plans:*** Geo-location Qualification, Performance Spec, Engineering Data, Integration and Prototypes for Infrared Camera Replacement.	-	2.100	2.253
Title: Multifunction Video Display (MVD) ***Description:*** Multifunction Video Display (MVD). Digital display used to control and view RCV enablers ***FY 2015 Accomplishments:*** Continued MVD Prototype Development and follow-on Test. Continuing support for MVD SIL at NVESD. ***FY 2016 Plans:*** Continuing support for MVD SIL at NVESD for development of additional enablers EHP Roller onto MVD. ***FY 2017 Plans:*** Continuing Support for MVD SIL at NVESD for development of additional enabler (Interrogation Arm software development for control functionality).	1.025	0.750	0.750
Title: RCV & Enabler Improvements ***Description:*** Develop the hardware used to improve POR RCVs. ***FY 2015 Accomplishments:*** Prototype Development of MMPV Type II Interrogation Arm systems improvements. ***FY 2016 Plans:*** Develop system demonstrator of MMPV Type II Interrogation Arm System Improvements and test. Work upgrade to EHP blower camera. EHP roller development	0.383	1.217	-
Title: Add on Armor (AoA)	0.483	0.300	0.091

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Development AoA efforts for Route Clearance Vehicles (RCV) to include Rocket Propelled Grenade (RPG) and Explosive Formed Projectiles (EFP) for Husky and Buffalo. ***FY 2015 Accomplishments:*** Investigate lighter weight EFP AoA recipes for RCVs with Army Research Lab. Develop and test Husky Chevron RPG Kit. ***FY 2016 Plans:*** Develop and test Buffalo EFP AoA Kit. ***FY 2017 Plans:*** Develop Husky EFP AoA Kit.			
Title: AMDS ***Description:*** AMDS ***FY 2015 Accomplishments:*** Engineering Manufacturing Development (EMD), Preliminary Design Review (PDR), and Risk Reduction Testing (RRT) ***FY 2016 Plans:*** Engineering Manufacturing Development (EMD), Critical Design Review (CDR), and Development Testing (DT) ***FY 2017 Plans:*** Engineering Manufacturing Development (EMD), Completion of Development Testing (DT), Limited User Test (LUT), Milestone C, and Initial Operational Test and Evaluation (IOT&E)	7.258	7.135	5.299
Accomplishments/Planned Programs Subtotals	43.314	49.296	36.858

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• R64001: *Husky Mounted Detection System (HMDS) R64001*	18.545	13.565	0.274	-	0.274	26.578	51.645	67.044	71.133	Continuing	Continuing
• R68102: *GSTAMIDS R68102*	37.649	58.682	39.350	-	39.350	34.055	33.336	48.591	46.020	Continuing	Continuing
• DA0924: *OPA1 Mods in Services DA0924*	83.173	260.993	219.456	-	219.456	103.976	106.881	64.348	64.006	Continuing	Continuing
• R68260: *AMDS R68260*	-	-	10.500	-	10.500	16.968	26.767	29.476	-	0	83.711

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 606: *Countermine/ Barrier Advanced Dev 606*	-	-	4.000	-	4.000	4.000	3.000	12.285	16.000	Continuing	Continuing
• R67050: *MTRS Inc II*	-	-	5.471	-	5.471	14.752	29.603	33.558	39.650	Continuing	Continuing
• M80400: *Robotic Combat Support System (RCSS)*	4.701	2.136	2.951	-	2.951	6.260	15.086	13.680	21.907	Continuing	Continuing

Remarks

D. Acquisition Strategy

The HMDS acquisition strategy is evolutionary with three capability increments – Increment A, Configuration 1 (A1), Increment A, Configuration 2 (A2), and Increment B. Increment A1 leverages the Quick Reaction Capability (QRC) GPR technology currently deployed in support of Operation Enduring Freedom (OEF) and the stand-alone GPR trainer currently used for pre-deployment training. Contract will be awarded to add a wire detection capability to the Increment A1 GPR and stand-alone GPR Trainer. Increment A2 integrates a Deep Buried Detection (DBD) capability to the QRC GPR and adds a DBD training device to the Common Operating Group (COG). The existing Increment A2 contract will be modified to add wire detection. Increment B integrates a Semi-Autonomous Control (SAC) capability with the HMDS, for which Engineering Manufacturing Development (EMD) efforts will be planned.

The RCIS program will execute an EMD phase for Type I systems starting with contract award to one EMD contractor in 2nd Quarter FY 2017. This award will be based on a source selection from full and open competition. The EMD contract awardee will execute Preliminary Design Review (PDR), design, integration, and build phase of seven Semi-Autonomous Capability (SAC) kits, integrated onto six vehicles, with one kit available for engineering and System Integration Lab (SIL) evaluations. These assets will be used for the Government to execute a full Pre-Production Qualification Test (PPQT) and to be evaluated with respect to CPD and performance specification requirements. Production and Technical Data Package (TDP) procurement options on the EMD contract will take advantage of competition to assist in cost reduction. The RCIS Type I program Lifecycle Cost Estimate (LCCE), and associated budget request, was updated based on costs associated with modifying the base HMEE platform to accept the SAC kit, changes in the acquisition strategy and Government Systems Engineering and Program Management (SEPM).

The MTRS Inc II acquisition strategy will execute an abbreviated Engineering Manufacturing Development (EMD) phase followed by a Production Deployment phase to integrate available payloads into the MTRS Inc II material solution. This EMD/Production Deployment award will be based on a source selection from a full and open competition. The EMD contract will be a Firm Fixed Price contract and awarde will execute a Preliminary Design Review(PDR), Critical Design Review (CDR), design integration, pre-production build phase of 10 First Article Test assets, LRIP and Full Rate Production. Pre-Production assets will be used to evaluate performance to performance specifications derived from the MTRS Inc II Capability Production Document (CPD) requirement. Upon completion of this phase, the contractor will proceed to LRIP and Full Rate Production.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

PM Ground Sensors is pursuing an acquisition approach for Vehicle Optics Sensor System (VOSS) which harvests Quick Reaction Capability (QRC) procured systems for refresh and insertion into the Program of Record (POR). In FY 2017 VOSS will qualify a Geo-location capability and integrate a less costly, more sustainable and durable Infrared Camera replacement.

EHP Debris Blower will be procured as a COTS item from a commercial vendor in FY 2016. EHP Roller ad EHP Wire Neutralization System will be procured starting in FY 2017. MVD will be procured through an existing government contract with PdM Common Hardware Systems in FY 2016. Spiral development of software upgrades to MVD will be procured in FY 2017. MMPV Type II Interrogation Arm Engineer Change Proposals/upgrades would be procured in the out years once the user identifies the upgrades needed.

AMDS is currently in the Engineering Manufacturing Development (EMD) phase and is being developed to provide standoff detection, marking, and neutralization of explosive hazards (e.g., landmines, improvised explosive devices (IED), booby-traps (explosive), and unexploded ordnance (UXO)) in complex and urban terrain, including confined areas and subterranean environments (e.g., buildings, bunkers, tunnels, etc.). The EMD phase consists of a preliminary design phase, which culminates with the Preliminary Design Review (PDR), a Risk Reduction Test (RRT) to evaluate the preliminary design, a critical design phase, which culminates with the Critical Design Review (CDR), integration with the Talon IV chassis and the Remote Activation Munition System (RAMS), a prototype build of 11 systems, which will be used for integration activities and to conduct the Government Development Test (DT), a Logistics Demonstration (LogDemo), and a Limited User Test (LUT). Transition to Low Rate Initial Production (LRIP) is scheduled to occur in the 3rd Quarter of FY 2017. Initial Operational Test and Evaluation (IOT&E) will occur with LRIP assets in 1st Quarter of FY 2018.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 415 / *Mine Neutral/Detection*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management - HMDS	MIPR	PM CCS : Picatinny Arsenal, NJ	26.994	2.572	Sep 2016	2.941	Mar 2016	-		-		-	Continuing	Continuing	0
HMDS System Engineering & Program Management	MIPR	PM Terrestrial Systems : Fort Belvoir. VA	0.000	-		-		1.280	Mar 2017	-		1.280	0	1.280	0
HMDS PMO SETA	SS/CPFF	TBD : TBD	0.000	-		-		0.400	Feb 2017	-		0.400	0	0.400	0
Program Management - RCIS Type I	MIPR	PM FP : Warren, MI	0.000	1.358	Mar 2015	1.743	Mar 2016	1.790	Mar 2017	-		1.790	Continuing	Continuing	0
Program Management - MTRS Inc II	MIPR	PM FP : Warren, MI	0.000	-		2.200	Mar 2016	-		-		-	Continuing	Continuing	0
Program Management - VOSS	MIPR	PM Ground Sensors : Ft. Belvoir, VA	0.200	-		0.161		0.130	Jan 2017	-		0.130	0	0.491	0
Program Management - AMDS	Allot	PM CCS : Picatinny Arsenal, NJ	2.166	0.492	Feb 2015	1.233	Mar 2016	0.530	Mar 2017	-		0.530	0	4.421	0
		Subtotal	29.360	4.422		8.278		4.130		-		4.130	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMDS Inc A2 – Integration of Deep Buried Detection and Wire Detection	SS/CPFF	NIITEK Dulles : VA	18.900	14.236	Feb 2016	5.600	Jan 2016	2.286	Mar 2017	-		2.286	0	41.022	0
HMDS A1 Dev of Engineering Change Proposal w/ Wire Detect and InfraRed	SS/CPFF	NITEK : Dulles, VA	0.000	-		-		2.597	Feb 2017	-		2.597	0	2.597	0
HMDS A1 Dev of Trainer WD, Test Kit Fabrication	SS/CPFF	NITEK : Dulles, VA	0.000	-		-		0.440	Feb 2017	-		0.440	0	0.440	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMDS - TADSS	C/FFP	TBD - executed through PEO STRI : TBD	0.000	-		4.661	Nov 2015	-		-		-	0	4.661	0
RCIS Type I	SS/FFP	PM FP, PdM ALUGS : Warren, MI	4.878	1.650	Jan 2016	1.751	Mar 2016	-		-		-	0	8.279	Continuing
RCIS Type I	C/CPIF	PM FP, ALUGS : WARREN MI	0.000	-		-		4.133	Mar 2017	-		4.133	Continuing	Continuing	0
MTRS Inc II	C/FFP	PM FP, PdM UGV : Warren, MI	0.000	-		-		8.418	Mar 2017	-		8.418	0	8.418	0
VOSS - New IR camera development	C/CPFF	Various : Ft. Belvoir, VA	1.393	-		0.827	Mar 2016	1.127	Feb 2017	-		1.127	Continuing	Continuing	Continuing
Multi-Function Video Display	C/CPFF	NVESD : Fort Belvoir, VA	2.297	0.925		0.250		0.250	Jan 2017	-		0.250	3.047	6.769	3.047
RCV & Enablers Improvements - MMPV Type II Interrogation Arm	C/CPFF	KRC : Houghton, MI	0.450	0.283		0.500		-		-		-	0	1.233	0
AMDS Engineering and Manufacturing Development (EMD)	C/CPIF	Carnegie Robotics LLC : Pittsburgh, PA	21.106	2.687	Mar 2015	-		1.500	Jan 2017	-		1.500	0	25.293	0
AMDS Trainer Development	MIPR	ARDEC : , Picatinny Arsenal, NJ	0.000	0.460	Aug 2015	-		-		-		-	0	0.460	0
AMDS Training Aids, Devices, Simulators and Simulations (TADSS)	C/FFP	TBD - executed thru PEO STRI : TBD	0.000	-		1.406	May 2016	-		-		-	0	1.406	0
		Subtotal	49.024	20.241		14.995		20.751		-		20.751	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMDS - Test Support	C/FFP	USI : Newport News, VA	0.621	0.199	Jul 2015	0.601	Dec 2015	-		-		-	0	1.421	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 415 / *Mine Neutral/Detection*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMDS - Tech Support	C/FFP	MANTECH : Fairfax, VA	0.739	0.203	Dec 2015	0.531	Nov 2015	0.203	Nov 2016	-		0.203	0	1.676	0
HMDS	MIPR	NVESD/CERDEC : Fort Belvoir, VA	8.111	2.102	Mar 2015	2.220	Jan 2016	1.000	Jan 2017	-		1.000	Continuing	Continuing	0
HMDS - Information Assurance	FFRDC	MITRE : McLean, VA	0.276	0.294	Dec 2015	0.150	May 2016	0.150	May 2017	-		0.150	0	0.870	0
HMDS - LOG DEMO	C/CPFF	FIBERTEK : TBD	0.000	0.381	Sep 2015	-		-		-		-	0	0.381	0
HMDS	MIPR	PM FP, PdM ALUGS : Warren, MI	3.269	-		1.160	Jan 2016	-		-		-	0	4.429	0
HMDS - Cost Analysis	C/CPFF	CACI : va	0.000	0.048	Dec 2015	-		-		-		-	0	0.048	0
HMDS	MIPR	PEO STRI : Orlando, FL	0.744	0.957	May 2015	0.628	Jan 2016	0.490	Jan 2017	-		0.490	0	2.819	0
HMDS	MIPR	CECOM : Aberdeen, MD	1.256	1.293	Apr 2015	1.515	Jan 2016	1.000	Jan 2017	-		1.000	0	5.064	0
HMDS - Test Data Plan Analysis	SS/CPFF	IDA : Alexandria, VA	0.560	-		0.350	May 2016	0.360	May 2017	-		0.360	0	1.270	0
HMDS	MIPR	MSCoE : Ft. Leonard Wood, MO	0.000	-		0.119	Jan 2016	0.115	Jan 2017	-		0.115	0	0.234	0
HMDS	MIPR	Various : Various locations	2.608	0.265	Dec 2015	-		-		-		-	0	2.873	0
HMDS	MIPR	Product Realization Directorate (PRD)/CERDEC : Aberdeen, MD	0.462	0.634	Mar 2015	0.447	Jan 2016	0.460	Jan 2017	-		0.460	0	2.003	0
HMDS	MIPR	ARDEC : Picatinny Arsenal, NJ	1.353	0.548	Jan 2015	0.524	Jan 2016	0.714	Jan 2017	-		0.714	0	3.139	0
HMDS	MIPR	ADM : Edgewater, MD	0.000	1.206	Dec 2015	-		-		-		-	0	1.206	0
HMDS	MIPR	AMRDEC : Redstone Arsenal, AL	0.297	0.252	May 2015	0.472	Jan 2016	-		-		-	0	1.021	0
HMDS	MIPR	TARDEC : Warren, MI	0.545	-		-		-		-		-	0	0.545	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RCIS Type I	MIPR	PM FP, PdM ALUGS : Warren, MI	3.130	2.469	Mar 2015	2.596	Mar 2016	1.379	Mar 2017	-		1.379	Continuing	Continuing	0
Robotics Interoperability	MIPR	PM FP, PdM ALUGS : Warren, MI	2.000	1.000	Mar 2015	1.000	Mar 2016	-		-		-	0	4.000	0
MTRS Inc II	Various	PM FP, PdM UGV : Warren, MI	3.600	1.240	Mar 2015	3.865	Mar 2016	-		-		-	Continuing	Continuing	0
VOSS	MIPR	Various : Various	2.376	-		0.344		-		-		-	Continuing	Continuing	Continuing
Multi-function Video Display	C/CPFF	NVESD/CERDEC : Fort Belvoir, VA	2.297	-		0.500		0.500	Jan 2017	-		0.500	0	3.297	0
Add on Armor (AoA) Husky RPG Kit	MIPR	TARDEC : Warren, MI	0.000	0.283		-		-		-		-	0	0.283	0
AoA Husky AoA Kit	MIPR	TARDEC : Warren, MI	0.000	-		-		0.091	Feb 2017	-		0.091	0	0.091	0
EHP Roller Development	MIPR	TARDEC : Warren, MI	0.000	-		0.400	Nov 2015	-		-		-	0	0.400	0
EHP Blower Camera Upgrade	MIPR	TARDEC : Warren, MI	0.000	-		0.050	Apr 2016	-		-		-	0	0.050	0
AMDS	MIPR	Various : Various	2.870	2.742	Jan 2015	1.611	Jan 2016	1.769	Jan 2017	-		1.769	0	8.992	0
		Subtotal	37.114	16.116		19.083		8.231		-		8.231	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMDS	MIPR	ATEC : Alexandria, VA	2.216	0.086	Mar 2015	2.184	Jan 2016	-		-		-	Continuing	Continuing	Continuing
RCIS Type I	MIPR	ATEC : Aberdeen, MD	1.334	0.171	May 2015	0.536	Feb 2016	0.500	Feb 2017	-		0.500	0	2.541	0
VOSS - Geo location qualification	MIPR	ATEC : Alexandria, VA	3.154	-		0.768		0.996	Mar 2017	-		0.996	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MTRS Inc II	MIPR	TARDEC, Various : Warren, MI	0.000	1.000		-		0.750	Jan 2017	-		0.750	0	1.750	0
Multi-Function Video Display	WR	KRC : Houghton, MI	1.000	0.100	Mar 2015	-		-		-		-	0	1.100	0
RCV & Enabler Improvements –MMPV Type II Interrogation Arm.	MIPR	TARDEC : Warren, MI	0.000	0.100	Mar 2015	0.267		-		-		-	0	0.367	0
Add on Armor (AoA) Husky RPG	MIPR	ATEC : Aberdeen, MD	0.000	0.100	Mar 2015	-		-		-		-	0	0.100	0
Add on Armor Buffalo EFP	MIPR	ATEC : Aberdeen, MD	0.000	-		0.300	Jun 2016	-		-		-	0	0.300	0
Add-on Armor	MIPR	ARL : Adelphi, MD	0.000	0.100	Mar 2015	-		-		-		-	0	0.100	0
AMDS	MIPR	ATEC : Aberdeen, MD	0.000	0.878	Feb 2015	2.885	Feb 2016	1.500	Aug 2017	-		1.500	0	5.263	0
		Subtotal	7.704	2.535		6.940		3.746		-		3.746	-	-	-

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	123.202	43.314		49.296		36.858		-		36.858	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

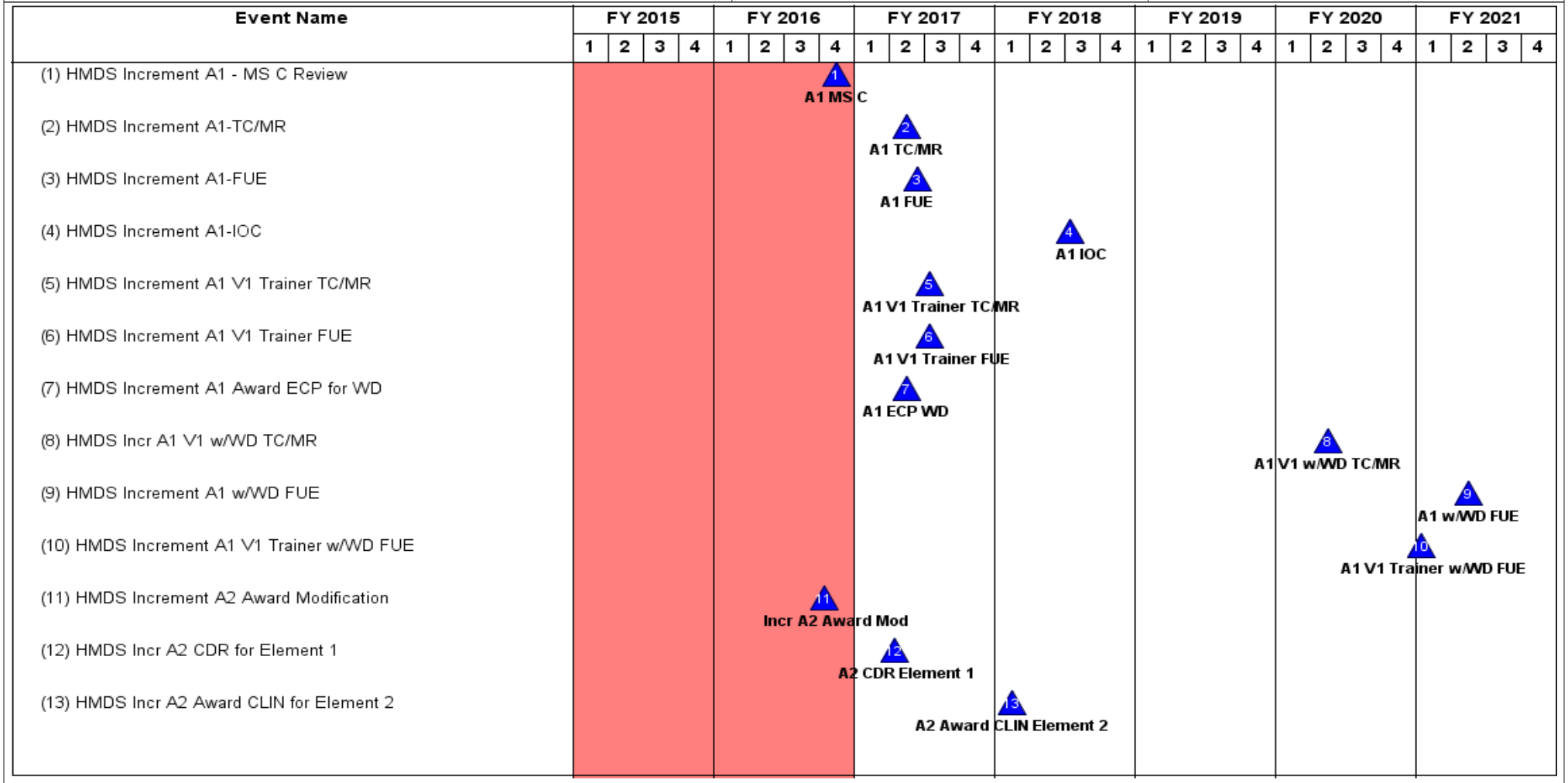

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

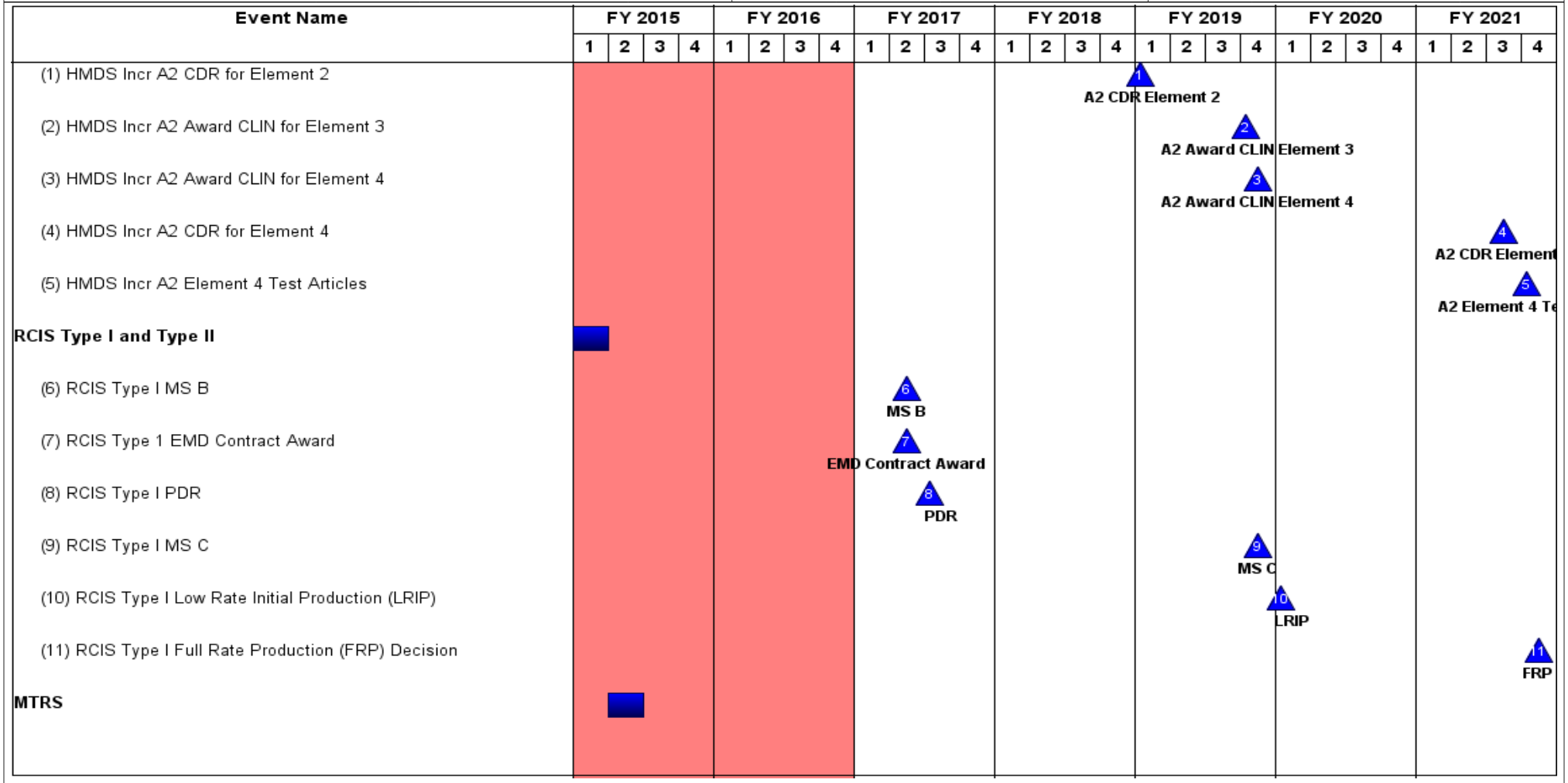

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

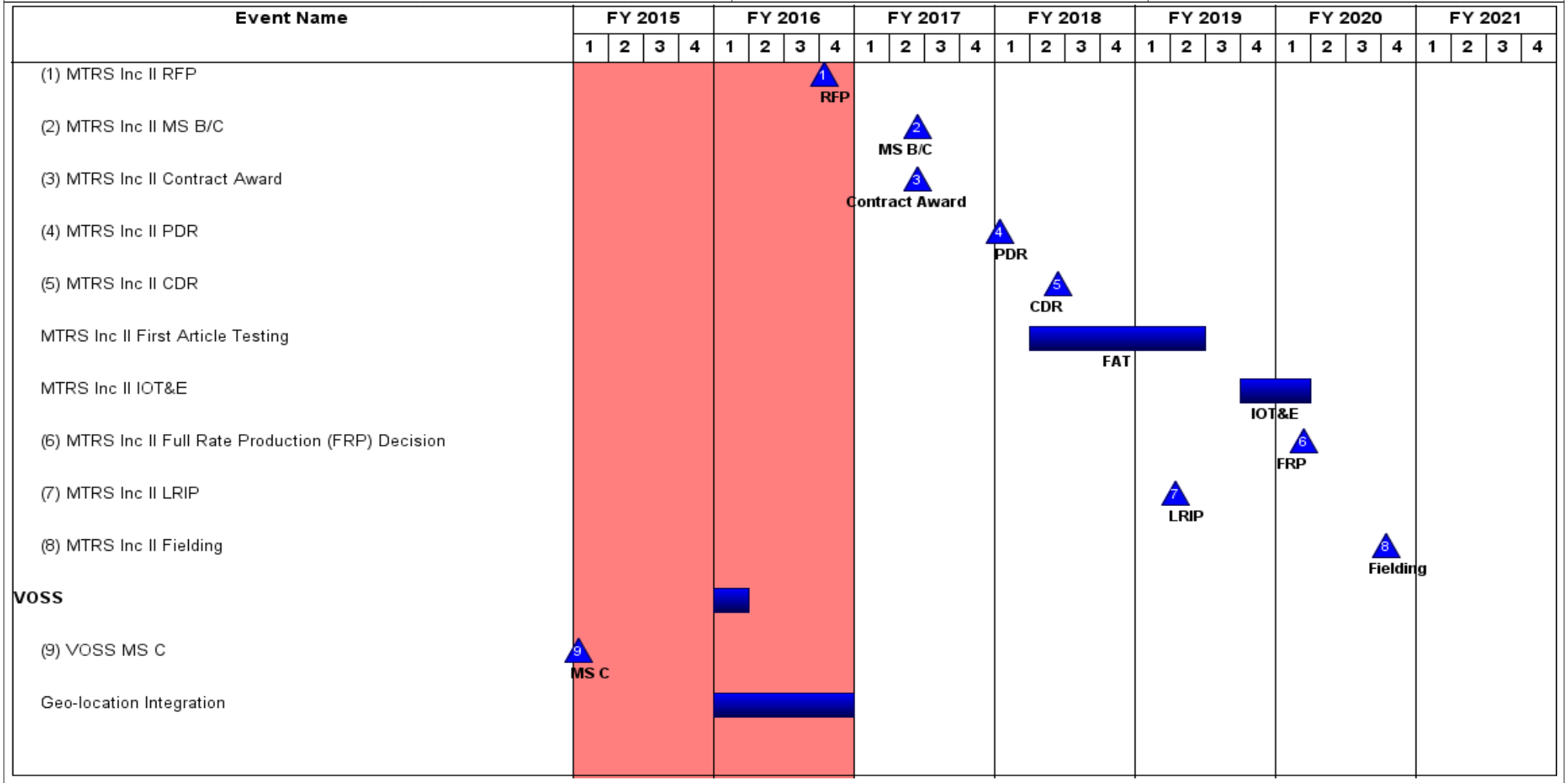

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

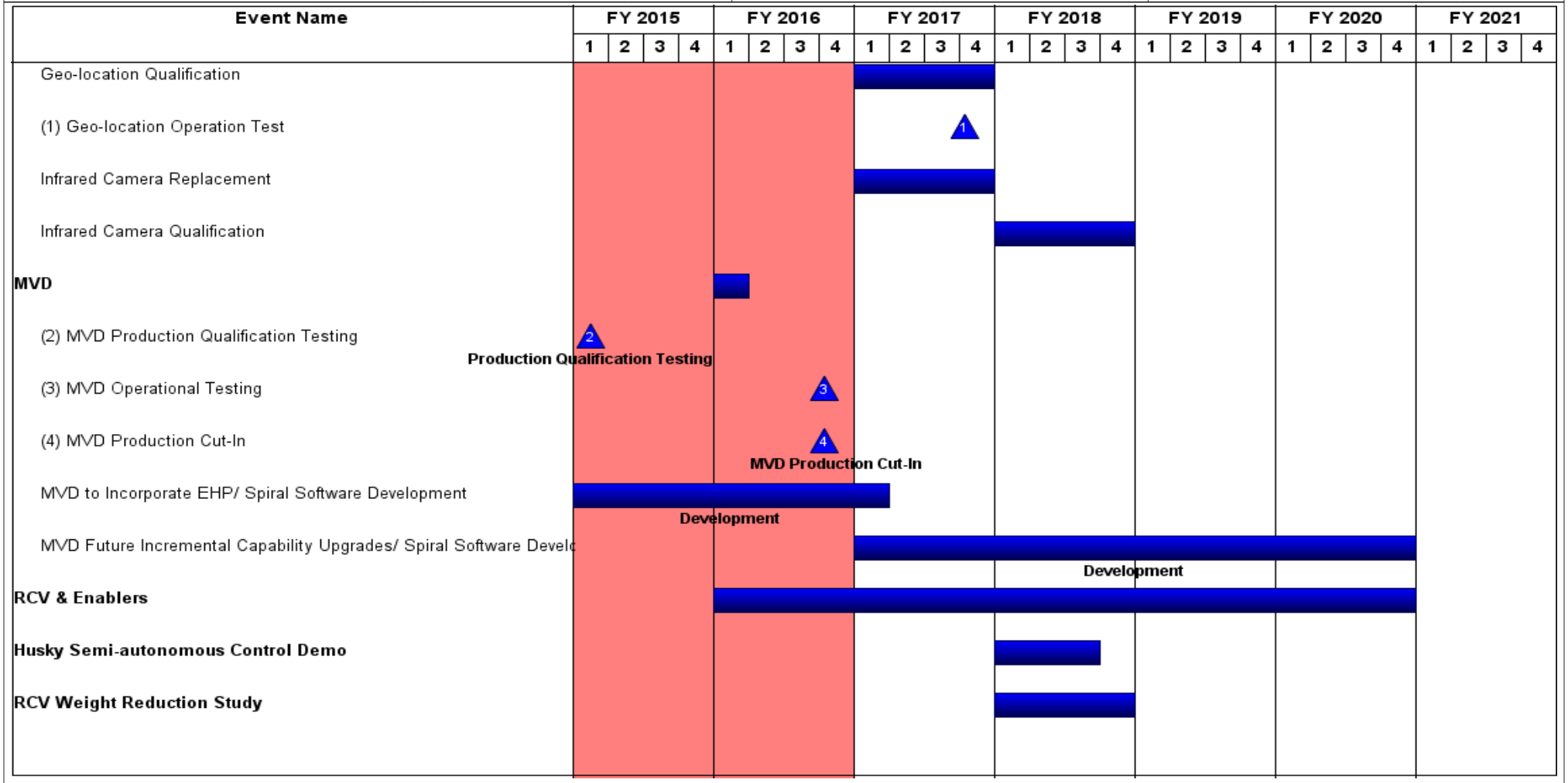

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

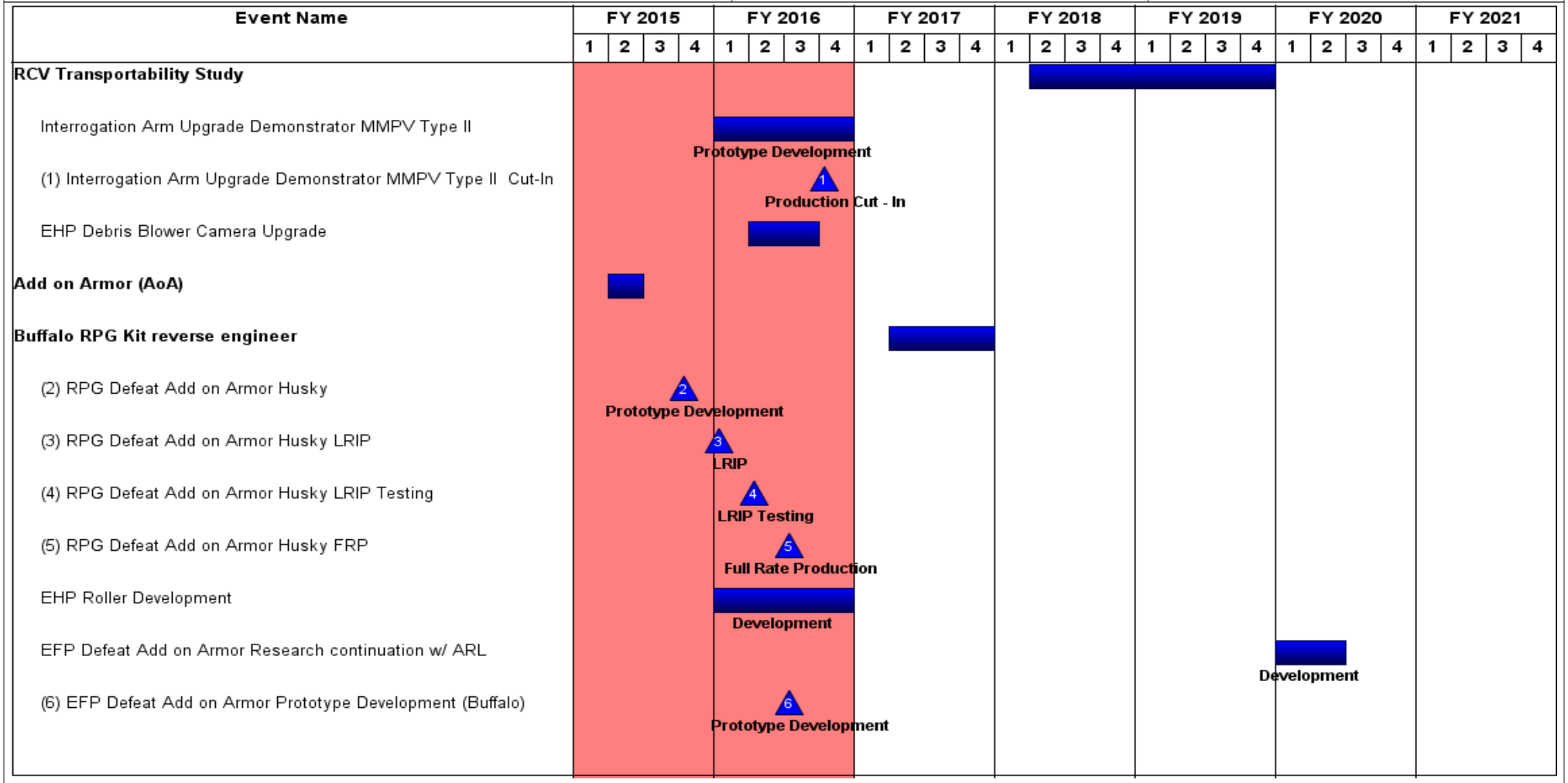

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

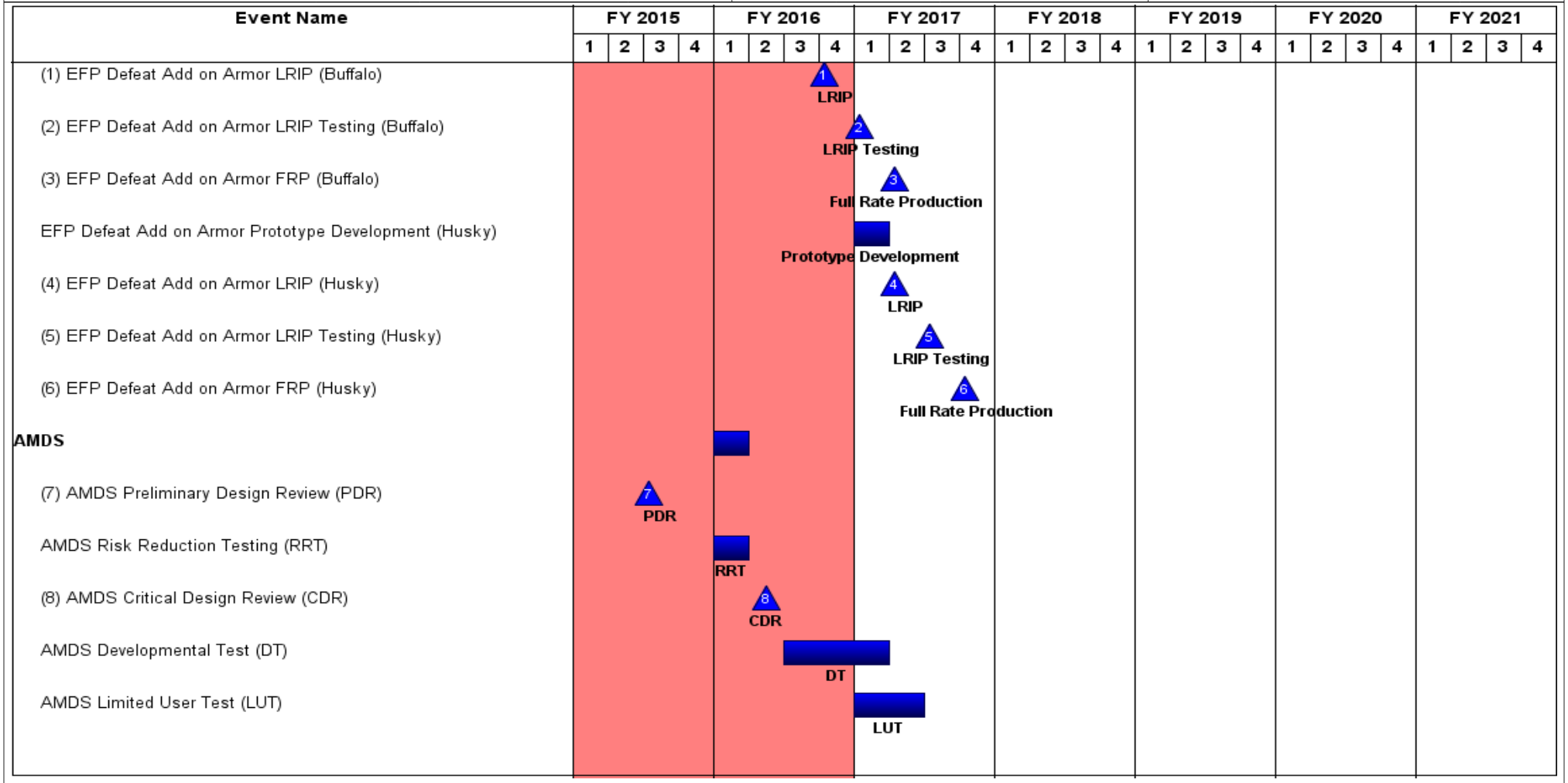

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

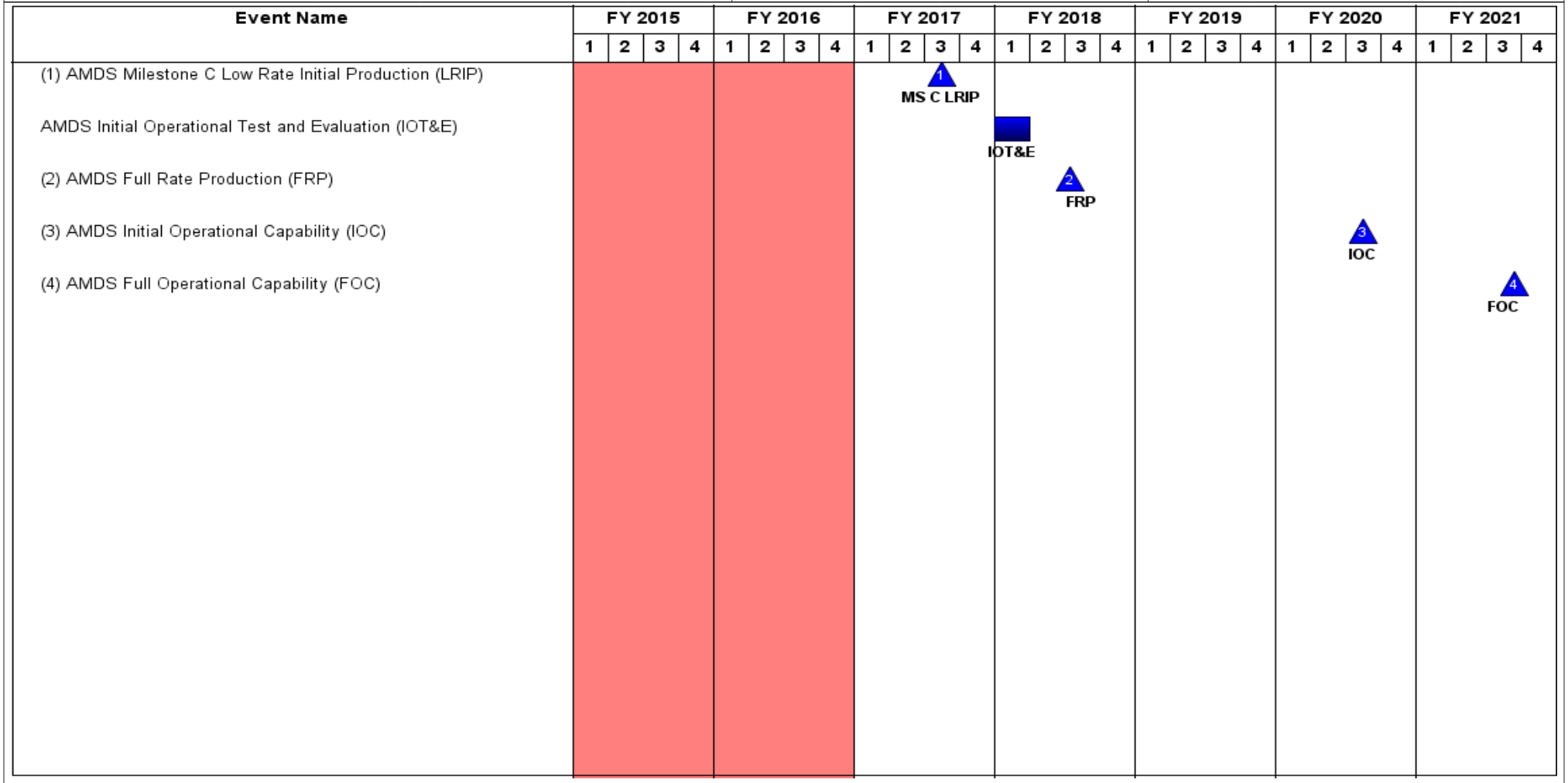

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
HMDS Increment A1 - MS C Review	4	2016	4	2016
HMDS Increment A1-TC/MR	2	2017	2	2017
HMDS Increment A1-FUE	2	2017	2	2017
HMDS Increment A1-IOC	3	2018	3	2018
HMDS Increment A1 V1 Trainer TC/MR	3	2017	3	2017
HMDS Increment A1 V1 Trainer FUE	3	2017	3	2017
HMDS Increment A1 Award ECP for WD	2	2017	2	2017
HMDS Incr A1 V1 w/WD TC/MR	2	2020	2	2020
HMDS Increment A1 w/WD FUE	2	2021	2	2021
HMDS Increment A1 V1 Trainer w/WD FUE	1	2021	1	2021
HMDS Increment A2 Award Modification	4	2016	4	2016
HMDS Incr A2 CDR for Element 1	2	2017	2	2017
HMDS Incr A2 Award CLIN for Element 2	1	2018	1	2018
HMDS Incr A2 CDR for Element 2	1	2019	1	2019
HMDS Incr A2 Award CLIN for Element 3	4	2019	4	2019
HMDS Incr A2 Award CLIN for Element 4	4	2019	4	2019
HMDS Incr A2 CDR for Element 4	3	2021	3	2021
HMDS Incr A2 Element 4 Test Articles	4	2021	4	2021
RCIS Type I and Type II	1	2015	1	2015
RCIS Type I MS B	2	2017	2	2017
RCIS Type 1 EMD Contract Award	2	2017	3	2017
RCIS Type I PDR	3	2017	3	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
RCIS Type I MS C	4	2019	4	2019
RCIS Type I Low Rate Initial Production (LRIP)	1	2020	1	2020
RCIS Type I Full Rate Production (FRP) Decision	4	2021	4	2021
MTRS	2	2015	2	2015
MTRS Inc II RFP	4	2016	4	2016
MTRS Inc II MS B/C	2	2017	3	2017
MTRS Inc II Contract Award	2	2017	3	2017
MTRS Inc II PDR	1	2018	1	2018
MTRS Inc II CDR	2	2018	2	2018
MTRS Inc II First Article Testing	2	2018	2	2019
MTRS Inc II IOT&E	4	2019	1	2020
MTRS Inc II Full Rate Production (FRP) Decision	1	2020	1	2020
MTRS Inc II LRIP	2	2019	2	2019
MTRS Inc II Fielding	4	2020	4	2020
VOSS	1	2016	1	2016
VOSS MS C	1	2015	1	2015
Geo-location Integration	1	2016	4	2016
Geo-location Qualification	1	2017	4	2017
Geo-location Operation Test	4	2017	4	2017
Infrared Camera Replacement	1	2017	4	2017
Infrared Camera Qualification	1	2018	4	2018
MVD	1	2016	1	2016
MVD Production Qualification Testing	1	2015	4	2015
MVD Operational Testing	4	2016	4	2016
MVD Production Cut-In	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MVD to Incorporate EHP/ Spiral Software Development	1	2015	1	2017
MVD Future Incremental Capability Upgrades/ Spiral Software Development	1	2017	4	2020
RCV & Enablers	1	2016	4	2020
Husky Semi-autonomous Control Demo	1	2018	3	2018
RCV Weight Reduction Study	1	2018	4	2018
RCV Transportability Study	2	2018	4	2019
Interrogation Arm Upgrade Demonstrator MMPV Type II	1	2016	4	2016
Interrogation Arm Upgrade Demonstrator MMPV Type II Cut-In	4	2016	4	2016
EHP Debris Blower Camera Upgrade	2	2016	3	2016
Add on Armor (AoA)	2	2015	2	2015
Buffalo RPG Kit reverse engineer	2	2017	4	2017
RPG Defeat Add on Armor Husky	4	2015	4	2015
RPG Defeat Add on Armor Husky LRIP	1	2016	1	2016
RPG Defeat Add on Armor Husky LRIP Testing	2	2016	2	2016
RPG Defeat Add on Armor Husky FRP	3	2016	3	2016
EHP Roller Development	1	2016	4	2016
EFP Defeat Add on Armor Research continuation w/ ARL	1	2020	2	2020
EFP Defeat Add on Armor Prototype Development (Buffalo)	3	2016	3	2016
EFP Defeat Add on Armor LRIP (Buffalo)	4	2016	4	2016
EFP Defeat Add on Armor LRIP Testing (Buffalo)	1	2017	1	2017
EFP Defeat Add on Armor FRP (Buffalo)	2	2017	2	2017
EFP Defeat Add on Armor Prototype Development (Husky)	1	2017	1	2017
EFP Defeat Add on Armor LRIP (Husky)	2	2017	2	2017
EFP Defeat Add on Armor LRIP Testing (Husky)	3	2017	3	2017
EFP Defeat Add on Armor FRP (Husky)	4	2017	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 415 / *Mine Neutral/Detection*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AMDS	1	2016	1	2016
AMDS Preliminary Design Review (PDR)	3	2015	3	2015
AMDS Risk Reduction Testing (RRT)	1	2016	1	2016
AMDS Critical Design Review (CDR)	2	2016	2	2016
AMDS Developmental Test (DT)	3	2016	1	2017
AMDS Limited User Test (LUT)	1	2017	2	2017
AMDS Milestone C Low Rate Initial Production (LRIP)	3	2017	3	2017
AMDS Initial Operational Test and Evaluation (IOT&E)	1	2018	1	2018
AMDS Full Rate Production (FRP)	3	2018	3	2018
AMDS Initial Operational Capability (IOC)	3	2020	3	2020
AMDS Full Operational Capability (FOC)	3	2021	3	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 434 / *Anti-Personnel Landmine Alternatives (NSD)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
434: *Anti-Personnel Landmine Alternatives (NSD)*	-	10.265	4.290	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.555
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Spider Increment 1A will build upon the existing M7 Spider system. The M7 Spider system is a hand-emplaced, remotely controlled (Man-In-The-Loop) system that provides highly responsive terrain-shaping and protection capabilities. M7 Spider replaces persistent anti-personnel landmines, is compliant with US National Landmine policy, and has been fielded to US forces in support of Operation Enduring Freedom and currently being fielded to Engineers within Brigade Combat Teams in the Active and Army National Guard components. Additional capabilities will be developed to enhance the Spider Remote Control Station and demonstrate the ability to employ legacy Government-Off-The-Shelf (GOTS) lethal and non-lethal anti-personnel (AP) munitions and counter mobility obstacles. Spider Increment 1A will utilize an open system architecture to facilitate future munition integration. Spider Increment 1A completed documentation efforts for the Non-Lethal Launcher (NLL) XM809 and XM810 contract activities in support of Type Classification.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Spider Increment 1A Contract	3.369	-	-
Description: Develop Spider Increment 1A Controller with the ability to employ/control and initiate AP & counter mobility obstacle munitions. Supported development efforts of the Spider NLL for use with the Spider Inc 1A system. ***FY 2015 Accomplishments:*** Additional MODs to Spider Increment 1A EMD development efforts is Platform PC Trainer and Safety Banner.			
Title: Engineering Support	5.149	1.504	-
Description: Perform engineering support. ***FY 2015 Accomplishments:*** Continue development of the Spider Inc 1A system. Provide engineering support, software development support, MANPRINT and HFE support to contractor Developmental Testing. ***FY 2016 Plans:*** Continue to support development of Spider Increment 1A system. Support Critical Design Review (CDR) and Post CDR assessment. Support Milestone C and government qualification testing.			
Title: Test and Evaluation	0.702	2.210	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 434 / *Anti-Personnel Landmine Alternatives (NSD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Provide support to Contractor/Government test activities. ***FY 2015 Accomplishments:*** Provide support to Contractor/Government test activities. Contractor will conduct software testing to include system Lab Integration/parking lot testing, Fuctional Qualification Test (FQT), and System Verification Test (SVT). Government will conduct government testing; User Jury, Government System Verification Test (G-SVT) if necessary. ***FY 2016 Plans:*** DIACAP/Cooperative Vulnerability and Penetration Assessment (CVPA) Information Assurance (IA)/Cybersecurity, Electromagnetic Environmental Effects (E3), Environmental, Live Munition Firing Test (LMFT), Interactive Electronic Training Manual (IETM), Validation/Logistics Demo, Force Development Test (FDT), Initial Operational Test (IOT), and Army Interoperability Certification (AIC).			
Title: Program Management and Oversight ***Description:*** Program Management and support of Spider Increment 1A. ***FY 2015 Accomplishments:*** Perform overall program management support for the execution of the Spider Inc 1A development effort. Oversee all contractor activities. ***FY 2016 Plans:*** Perform overall program management support for the execution of the Spider Inc 1A development effort and oversee Government Qualification Testing. Conduct all major Program Reviews to include Critical Design Design Review (CDR), oversee Government Qualification Testing. Prepare the Milestone C package to include the Capability Production Document (CPD) and other Acquisition Documents.	0.633	0.350	-
Title: FY 2014-2016 Reductions ***Description:*** Small Business Innovative Research/Small Business Technology Transfer Program (SBIR/STTR) and Federally Funded Research & Development Centers (FFRDC) Reductions. ***FY 2015 Accomplishments:*** Adjustment in FY15 were in Small Business Innovative Research (SBIR) $357,000, Small Business Technology Transfer Program (STTR) $49,000, and Federally Funded Research & Development Centers (FFRDC) $6,000.00. ***FY 2016 Plans:***	0.412	0.226	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 434 / *Anti-Personnel Landmine Alternatives (NSD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Approximately $226K projected adjustments in FY 2016.			
Accomplishments/Planned Programs Subtotals	10.265	4.290	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Spider - APLA Remote Control Unit: *OPA2 Spider Increment 1 Program B55501*	0.969	1.403	1.985	-	1.985	0.996	-	-	-	0.000	5.353
• Spider Family Of Networked Munition: *OPA2 Spider Increment 1A Program B54020*	-	9.199	10.796	-	10.796	10.655	9.402	8.423	8.936	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Engineering Manufacturing Development (EMD) contract was a competitively awarded Cost Plus Incentive Fee EMD contract with a one year Firm-Fixed Price (FFP) Low Rate Initial Production (LRIP) option. A Government Level 3 Technical Data Package (TDP) will be delivered as part of the EMD contract. The modified TDP at the end of LRIP will facilitate full and open competition of a FFP Full Rate Production contract.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 434 / *Anti-Personnel Landmine Alternatives (NSD)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spider - Program Mgmt	Various	PM-CCS, : Picatinny Arsenal, NJ	3.152	0.633		0.350		-		-		-	Continuing	Continuing	0
SBIR/STTR, FFRDC and Section 3001/3004 ATB Adjustments	Various	PM CCS, : Picatinny Arsenal, NJ	3.104	0.412		0.226		-		-		-	0	3.742	0
		Subtotal	6.256	1.045		0.576		-		-		-	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spider Non-Lethal Launcher (FY12)	SS/CPIF	Alliant Techsystems Operations, LLC : Plymouth, MN	0.667	-		-		-		-		-	0	0.667	0
Spider Inc 1A (FY13-15)	C/CPIF	Northrop Grumman Systems Corporation : Carson, CA	19.829	3.369	Dec 2015	-		-		-		-	Continuing	Continuing	0
Rifleman Radio Systems	Reqn	General Dynamics, C4 Systems : Scottsdale, AZ	0.057	-		-		-		-		-	0	0.057	0
		Subtotal	20.553	3.369		-		-		-		-	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spider - ARDEC Eng support	MIPR	ARDEC, : Picatinny Arsenal, NJ	10.403	3.623		0.704		-		-		-	Continuing	Continuing	0
Spider - ARDEC Non-Lethal Launcher Eng Spt	MIPR	ARDEC, : Picatinny Arsenal, NJ	1.561	-		-		-		-		-	0	1.561	0
Mitre provide C4 Support	FFRDC	Mitre, : McLean, VA	2.840	0.280		0.400		-		-		-	Continuing	Continuing	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 434 / *Anti-Personnel Landmine Alternatives (NSD)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Spider - Millennium Engineering Support	C/FFP	Millennium : Arlington, VA	1.951	-		0.400		-		-		-	Continuing	Continuing	0
Spider - CECOM Engineering Support MOD	C/CPFF	URS Federal Support Service : Lakehurst, NJ	0.390	-		-		-		-		-	0	0.390	0
Spider - CERDEC Engineering Support	C/CPFF	CACI Technologies, INC : Chantilly, VA	0.100	0.181	Feb 2015	-		-		-		-	0	0.281	0
Spider - CERDEC Eng support	MIPR	CERDEC - SPACE AND TERRESTRIAL COMMS DIR : APG, MD	0.098	0.232		-		-		-		-	Continuing	Continuing	0
Spider Increment 1A PEO STRI Training Support	MIPR	PEO STRI : Orlando, FL	0.050	0.100		-		-		-		-	0	0.150	0
ARL HRED MANPRINT/ HFE Support	MIPR	ARL HRED : Adelphi, MD	0.209	0.208		-		-		-		-	0	0.417	0
Night Vision Electronic Sensors Directorate	C/CPFF	Fibertek : Herndon, VA	0.000	0.163	Jan 2015	-		-		-		-	0	0.163	0
Spider 1A Maint & Engr SPT DOTC Contract	C/CPFF	Advanced Technology International (ATI) : North Charleston, SC	0.000	0.194	Mar 2015	-		-		-		-	0	0.194	0
Spider 1A Maint & Engr SPT IDIQ Contract	C/IDIQ	Advanced Technology International (ATI) : North Charleston, SC	0.000	0.168	Aug 2015	-		-		-		-	0	0.168	0
		Subtotal	17.602	5.149		1.504		-		-		-	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 434 / *Anti-Personnel Landmine Alternatives (NSD)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contractor/ Government Test Activities	MIPR	OTC, AMSAA, AEC, ATEC, NIE, TSMO, ARDEC : Various	0.234	0.702		2.210		-		-		-	Continuing	Continuing	0
		Subtotal	0.234	0.702		2.210		-		-		-	-	-	0.000

Remarks

Not Applicable

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.645	10.265		4.290		-		-		-	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 434 / *Anti-Personnel Landmine Alternatives (NSD)*

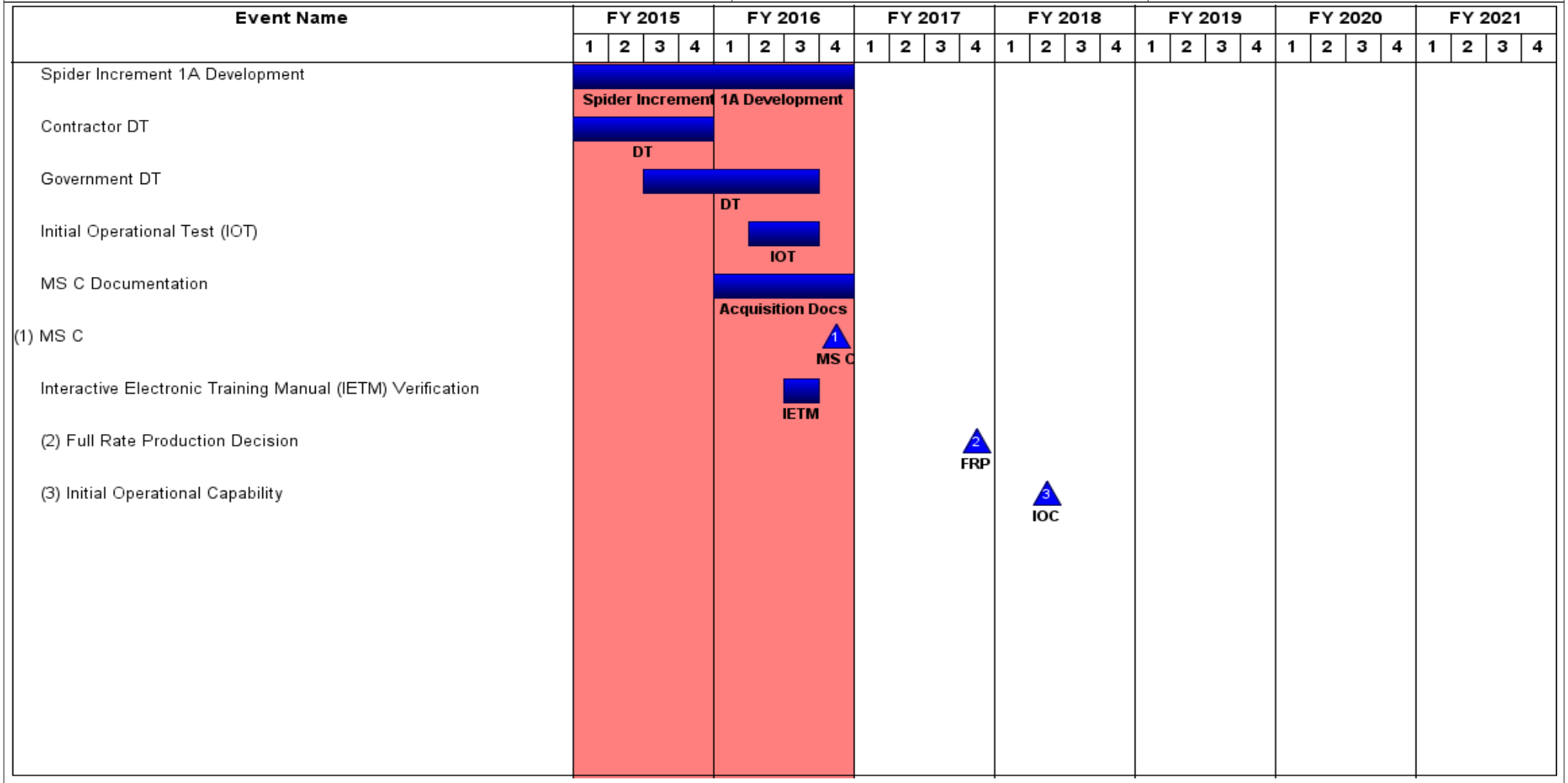

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 434 / *Anti-Personnel Landmine Alternatives (NSD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Spider Increment 1A Development	4	2013	4	2016
Contractor DT	3	2014	4	2015
Government DT	3	2015	3	2016
Initial Operational Test (IOT)	2	2016	3	2016
MS C Documentation	1	2016	4	2016
MS C	4	2016	4	2016
Interactive Electronic Training Manual (IETM) Verification	3	2016	3	2016
Full Rate Production Decision	4	2017	4	2017
Initial Operational Capability	2	2018	2	2018

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604818A *I Army Tactical Command & Control Hardware & Software*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	29.690	131.639	205.590	-	205.590	210.427	175.703	109.485	132.599	Continuing	Continuing
323: *Common Hardware Systems*	-	4.504	4.779	4.771	-	4.771	5.042	5.399	6.121	14.141	Continuing	Continuing
334: *Common Software*	-	8.144	18.384	3.303	-	3.303	0.850	1.001	0.334	0.167	Continuing	Continuing
C29: *Centralized Technical Support Facility (CTSF)*	-	7.874	3.203	2.617	-	2.617	1.347	0.000	0.000	0.000	0.000	15.041
C34: *Army Tac C2 Sys Eng*	-	9.168	8.842	8.881	-	8.881	9.094	9.151	9.259	9.497	Continuing	Continuing
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	0.000	70.483	82.091	-	82.091	98.078	63.689	5.906	15.004	Continuing	Continuing
EJ5: *MOUNTED COMPUTING ENVIRONMENT (MCE)*	-	0.000	12.370	15.271	-	15.271	18.606	16.814	7.668	8.683	0.000	79.412
EJ6: *TACTICAL ENHANCEMENT*	-	0.000	12.278	11.864	-	11.864	0.000	0.000	0.000	3.000	0.000	27.142
EJ7: *TACTICAL DIGITAL MEDIA*	-	0.000	1.300	2.467	-	2.467	0.000	0.000	0.000	0.000	0.000	3.767
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	0.000	0.000	39.264	-	39.264	66.588	68.751	69.129	70.755	0.000	314.487
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	0.000	0.000	10.563	-	10.563	10.822	10.898	11.068	11.352	Continuing	Continuing
EW3: *Unit Task Reorganization (UTR) Development*	-	0.000	0.000	24.498	-	24.498	0.000	0.000	0.000	0.000	0.000	24.498

Note

Project EQ8 is a realignment of effort previously funded in 0604827A.S75.

A. Mission Description and Budget Item Justification

The Common Hardware Systems (CHS) program acquires and sustains highly flexible, state-of-the-art, cost effective, common, and simplified non-developmental C5ISR solutions that improve interoperability and connectivity on the battlefield while garnering efficient competition to integrate the latest commercial technology onto the Army

tactical network. CHS provides technical support, common standardized testing and system design / configuration management across Army tactical programs to ensure interoperability and integration of hardware throughout the development of capabilities, to facilitate and simplify the selection of common hardware solutions across the operational battlefield and to create efficiencies through streamlined common hardware configurations across the Common Operating Environments (COE)s.

Common Software (CS) is the suite of systems through which the Army develops, integrates and tests common software products and/or components used for communication between Army Mission Command Systems and Joint and coalition Command and Control (C2) applications. The CS project provides state-of-the-art software technologies and functionality that is used by numerous Mission Command (MC) and joint systems to eliminate the need for service independent development and duplication of effort. The CS project also manages and performs technology demonstrations of emerging technologies for future use by Army C2 systems. The CS program is a cornerstone in the Army's COE modernization efforts.

This program element also includes the Central Technical Support Facility (CTSF) which is the Army's single strategic facility responsible for executing Army Interoperability Certification (AIC) system of system verification/validation checkout, testing, and configuration management for the Army's LandWarNet Baseline.

The Technical Management Division (TMD) effectively manages the System-of-Systems engineering, Enterprise and Integration efforts for the continuing evolution of the network within the Program Executive Office Command, Control, Communication and Tactical (PEO C3T) portfolio of technology across the capability enhancement packages to deliver efficient and effective cross-domain technical solutions.

The Mounted Computing Environment (MCE) is one of the six computing environments formalized by the AAE under the Common Operating Environment (COE) via the AAE Directive to Program Executive Offices dated 20 December 2011. MCE standardizes end-user environments and enables streamlined deployment of new warfighting applications. The Joint Battle Command - Platform (JBC-P) is the foundational element and core software platform of the MCE. Future development of the MCE will leverage JBC-P hardware and software to consolidate and integrate multiple warfighting systems in the Platform (Mounted) environment and will speed delivery of new Mission Command applications to the warfighter while improving the effectiveness and value of current systems.

The Command Post Computing Environment (CPCE), one of the computing environments under the Common Operating Environment (COE), provides a common foundation (Common Infrastructure / Common Services) for Warfighter Capabilities. The CPCE establishes a Common Core Software Baseline and Hardware Configuration upon which future Warfighter capabilities can be built. The CPCE targets Command and Control (C2) capability development at tactical echelons that span from the company to all Army Service Component Commands (ASCC). The CPCE will be the most critical computing environment developed to support the command posts and combat operations.

Tactical Digital Media (TDM) is comprised of photo, video and audio recording and editing equipment that will be assembled and issued as variant kits tailored to unit mission requirements. TDM kits address modernization gaps associated with all operational Combat Camera (COMCAM), Public Affairs (PA), and Military Information Support Operations (MISO) units. TDM provides essential imagery, multimedia products, and live interview capabilities that directly contribute to successful execution of a Commander's strategic engagement and communications strategy across the full range of military operations.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I Army Tactical Command & Control Hardware & Software*

Tactical Network Operations (NetOps) and Management (TNOM) is the program which will develop and integrate the Tactical NetOps software capabilities in support of NetOps Convergence, Army Objectives and emerging Cyber Center of Excellence (CCOE) requirements. The end state program is designed to synchronize LandWarNet NetOps efforts in an integrated and interoperable framework, spanning all echelons of command and supporting the full range of military operations for Army, Joint, and Coalition Forces in order to ensure converged NetOps. The initial mission is convergence of DoD Information Network (DoDIN) functions into a single integrated set of Tactical NetOps and Management software. This integrated solution provides NetOps capability to manage Tactical Networks from the Soldier to the Theater network entry point and supports the implementation of the Integrated Tactical NetOps (ITNO) Increment 1 Capability Production Document (CPD). TNOM will deliver a standardized visualization capability (integrating both Upper and Lower Tactical Internet NetOps) in order to reduce complexity and inform the military decision making processes. TNOM will also provide enhanced capability to detect, respond, and restore from cyber incidents.

Tactical Enhancement supports testing requirements for capabilities procured and fielded under the Signal Modernization Program. Signal Modernization will modernize legacy terrestrial communications links and increase capacity of the Expeditionary Signal Battalions. It will also provide transport convergence for Warfighter Information Network- Tactical (WIN-T) Increment 1 units, bringing Top Secret Intel, Medical, and Sustainment capabilities from their legacy stovepipe transport systems on to the WIN-T network.

Project EQ8, Mobile/Handheld Computing Environment supports the Nett Warrior (NW) Program (named in honor of Medal of Honor recipient Colonel Robert C. Nett), also known as the Ground Soldier System (GSS) Program. The program leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader.

As the ARMY's tactical network continues to evolve from a loose federation of stove-piped systems to a single, intergrated, service-oriented and standards-based environment, Unit Task Reorganization (UTR) development capabilites must also evolve in the same manner. Today, UTR is a complex, manually intensive, and time-consuming process. This is due, in part, to the large increase in network-enabled nodes within the tactical network. In addition, tools employed by the G/S-6 staff to conduct UTR are desgined, developed,and fielded by various program and product managers, each with discrete requirements, developmental schedules, and funding lines. This impredes the G/S-6 Staff's ability to conduct UTR in an integrated manner. To enhance UTR, we will address five fundamental challenes to improve UTR. Efficients data sharing is a fundamental charactersitic of mondern-day integrated systems. The ability to read, modify, and exchange data in a uniform and efficient manner is essential to achieve an integrated UTR System.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604818A *I Army Tactical Command & Control Hardware & Software*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	29.675	163.643	188.956	-	188.956
Current President's Budget	29.690	131.639	205.590	-	205.590
Total Adjustments	0.015	-32.004	16.634	-	16.634
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-31.744			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.190	-0.260			
• SBIR/STTR Transfer	-0.175	-			
• Adjustments to Budget Years	-	-	16.634	-	16.634

Change Summary Explanation

FY17 $16.634M Growth is a net change driven by:
323: -0.253M
334: -21.99M
C29: +2.617M
C34: -0.313M
EJ4: -1.282M
EJ5: -0.398M
EJ6: -0.160M
EJ7: -0.033M
EK9: +3.385M
EQ8: +10.563M - Not a new start;
EW3: Program funded with 24.498M.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 323 / *Common Hardware Systems*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
323: *Common Hardware Systems*	-	4.504	4.779	4.771	-	4.771	5.042	5.399	6.121	14.141	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Common Hardware Systems (CHS) program acquires and sustains highly flexible, customized, cost effective, common, and simplified non-developmental C5ISR solutions that improve interoperability and connectivity on the battlefield while garnering efficient competition to integrate the latest commercial technology onto the Army tactical network. CHS provides technical support, environmental testing and system design / configuration management across Army tactical programs to ensure interoperability and integration of hardware throughout the development of capabilities. CHS hardware evaluations facilitate and simplify the selection of common hardware solutions across the operational battlefield and create efficiencies through streamlined common hardware configurations across the Common Operating Environments (COE)s. CHS also provides worldwide 72-hour turnaround repair, maintenance, logistics, and technical support services through strategically located support centers for tactical military units and manages customizable warranty for program specific requirements.

FY 2017 funds support CHS to continue to manage the acquisition and delivery of CHS equipment and associated services in support of customer requirements. It will also provide technology insertions and the continued support for hardware and systems engineering, and evaluations. CHS will continue CHS-5 contract pre-award activities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Acquisition Management, System/ Configuration Management, and technical evaluation and testing of CHS equipment and services in support of program requirements	3.904	3.929	3.729
Description: Funding is provided for the following effort			
FY 2015 Accomplishments: Will continue the management of the acquisition/delivery, System/ Configuration Management, and technical evaluation and testing of CHS equipment in support of customer requirements.			
FY 2016 Plans: Will continue the management of the acquisition/delivery, System/ Configuration Management, and technical evaluation and testing of CHS equipment in support of customer requirements.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue the management of the acquisition/delivery, System/ Configuration Management, implementing Army initiatives, supporting sustainment of items procured, and technical evaluation and testing of CHS equipment in support of customer requirements.			
Title: CHS Technology Insertion in support of program capability requirements ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Continue CHS Technology Insertion in support of program capability requirements. ***FY 2016 Plans:*** Continue CHS Technology Insertion in support of program capability requirements. ***FY 2017 Plans:*** Continue CHS Technology Insertion in support of program capability requirements.	0.600	0.600	0.800
Title: Non Recurring Engineering (NRE) Costs for New CHS-5 Products ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:*** Non Recurring Engineering (NRE) Costs for New CHS-5 Products. ***FY 2017 Plans:*** Non Recurring Engineering (NRE) Costs for New CHS-5 Products.	-	0.250	0.242
Accomplishments/Planned Programs Subtotals	4.504	4.779	4.771

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The overall goal is to improve interoperability, compatibility and sustainability and lower life cycle costs by standardizing battlefield command and control automation and other warfighting systems (net centric, etc) through centralized buys of modified/ruggedized non-developmental items. This project provides a coherent migration strategy for acquisition of warfighting systems through the use of technology insertion.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

CHS also conducts common environmental testing of hardware items thereby reducing the testing requirements for individual Project Managers. An Indefinite Delivery/ Indefinite Quantity firm fixed priced, full and open competition contract was awarded to General Dynamics in May 2003, for ruggedization and production. In August 2011, CHS awarded, on a best value basis, the follow-on CHS-4 contract via full and open competition. CHS-5 is to be awarded in FY18 to provide flexibility for Tactical Programs of Record (PoR)s to meet hardware and associated services requirements through full and open competition and to provide an agile solution to support COE, network integration activities, capability set development, and transport needs.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 323 / *Common Hardware Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Costs	C/FP	Various : Various	77.646	2.130	Dec 2014	1.975	Dec 2015	1.875	Dec 2016	-		1.875	Continuing	Continuing	Continuing
Product Procurement	C/FP	Various : Various	86.790	1.774	Dec 2014	1.954	Dec 2015	1.854	Dec 2016	-		1.854	Continuing	Continuing	Continuing
Technology Insertion	C/FP	Various : Various	15.777	0.600	Dec 2014	0.600	Dec 2015	0.800	Dec 2016	-		0.800	Continuing	Continuing	Continuing
CHS-5 Non-Recurring Engineering	C/FP	Various : Various	0.000	-		0.250	Dec 2015	0.242	Dec 2016	-		0.242	Continuing	Continuing	Continuing
		Subtotal	180.213	4.504		4.779		4.771		-		4.771	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	180.213	4.504		4.779		4.771		-		4.771	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

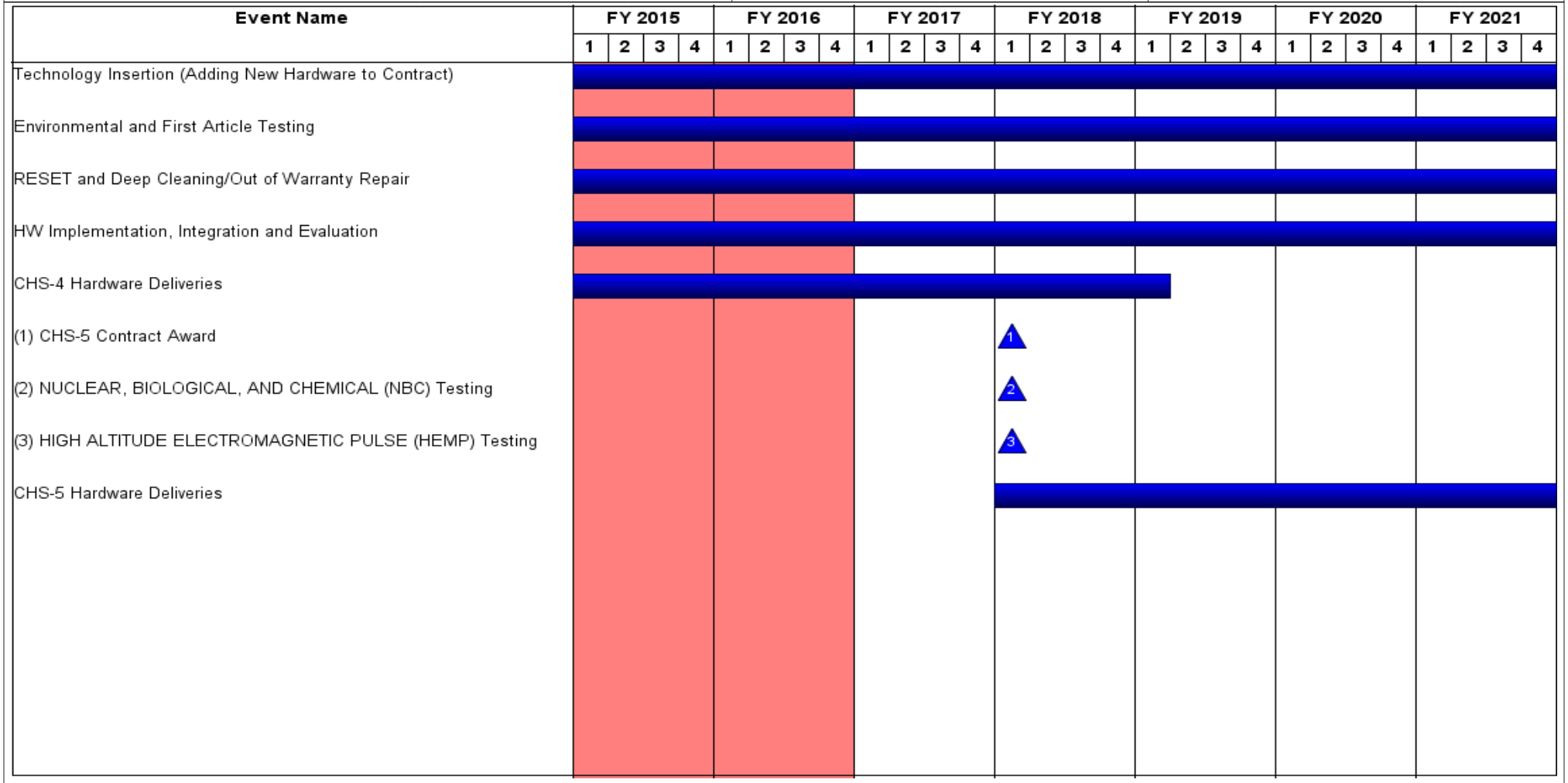

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technology Insertion (Adding New Hardware to Contract)	1	2007	4	2021
Environmental and First Article Testing	1	2006	4	2021
RESET and Deep Cleaning/Out of Warranty Repair	1	2006	4	2021
HW Implementation, Integration and Evaluation	1	2006	4	2021
CHS-4 Hardware Deliveries	1	2012	1	2019
CHS-5 Contract Award	1	2018	1	2018
NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) Testing	1	2018	1	2018
HIGH ALTITUDE ELECTROMAGNETIC PULSE (HEMP) Testing	1	2018	1	2018
CHS-5 Hardware Deliveries	1	2018	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 334 / *Common Software*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
334: *Common Software*	-	8.144	18.384	3.303	-	3.303	0.850	1.001	0.334	0.167	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 334 Common Software (CS): CS is the suite of systems through which the Army develops, integrates and tests common software products and/or components used for communication between Army Mission Command Systems and the greater C4ISR community. The CS project provides state-of-the-art software technologies and functionality that is used by numerous Mission Command (MC) and joint systems to eliminate the need for service independent development and duplication of effort. The CS program is a cornerstone in the Army's Common Operating Environment (COE) modernization efforts.

FY17 funding supports backwards compatibility with previous versions of Common Software products in addition to design efforts towards future Command Post Computing Environment (CP CE) implementations. Products include Data Dissemination Services (DDS) and C2 Infrastructure Virtual Machine as foundation for machine-to-machine (M2M) messaging, Cross Cutting Capabilities (CCC), Unit Task Organization, Universal Chat Bridge and Command and Control Registry hosted on Tactical Server Infrastructure (TSI).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Mission Command (MC) systems provide single common software enterprise infrastructure development in support of the C4ISR community ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Funding is provided for Common Software development efforts for infrastructure development, messaging standards integration, addressing development, remote configuration and management and widget services ***FY 2016 Plans:*** Funding is provided for Common Software development efforts for infrastructure development, messaging standards integration, addressing development, remote configuration and management and widget services ***FY 2017 Plans:*** Funding is provided for Common Software development efforts for backwards compatibility and design of future efforts with messaging standards integration, addressing development, remote configuration and management and widget services	2.133	4.259	1.955
Title: Joint and Coalition interoperability efforts ***Description:*** Provide software for interoperability of Joint and Coalition efforts	1.088	2.450	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 334 / *Common Software*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Provide software for interoperability of Joint and Coalition efforts including development, JITC Certification and Assessment, and exercise support ***FY 2016 Plans:*** Will continue to provide software for interoperability of Joint and Coalition efforts including development, JITC Certification and Assessment, and exercise support			
Title: Integration of previously developed and design of future required mission command software services and common software solutions into the Army CP CE versions ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Technical evaluation of previously developed software capabilities for integration with the computing environments of the Army Common Operating Environment (COE) architecture to include appropriate Mounted and Mobile/Handheld computing environments. Efforts will include assessment of software applicability to the core infrastructure, development/modification of software necessary to integrate, integration with common computing environments, and validation ***FY 2016 Plans:*** Technical evaluation of previously developed software capabilities for integration with the computing environments of the Army Common Operating Environment (COE) architecture to include appropriate Mounted and Mobile/Handheld computing environments. Efforts will include assessment of software applicability to the core infrastructure, development/modification of software necessary to integrate, integration with common computing environments, and validation	3.097	3.063	-
Title: Software Development - Tactical Server Infrastructure (TSI) ***Description:*** Tactical Server Infrastructure (TSI) provides an integrated Server hardware and locally hosted Enterprise Service Infrastructure for use in tactical Army command posts. C2 infrastructure and data services hosted on TSI providing a common core infrastructure component to the C4ISR architecture ***FY 2016 Plans:*** TSI software application and infrastructure development ***FY 2017 Plans:*** TSI software application and infrastructure development	-	5.262	0.713
Title: Test and Evaluation	0.288	1.562	0.300

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 334 / *Common Software*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Test and Evaluation efforts include the planning and conduct of Test, Evaluation, and Integration events in support of CPCE development. This includes participation in Network Integration Exercises (NIEs), User Juries, Assessments, Risk Reduction Events (RREs), vulnerability testing, and Army Interoperability Certification (AIC) testing. Testing can consist of stand-alone capability testing in a lab/sandbox environment or full interoperability testing with multiple systems in an operational environments ***FY 2015 Accomplishments:*** Test and Evaluation required for Common Software. Software testing documentation and training and AIC ***FY 2016 Plans:*** Test and Evaluation required for Common Software and Battle Command Common Services (BCCS). Software testing documentation and training and AIC ***FY 2017 Plans:*** Test and Evaluation required for Common Software and Battle Command Common Services (BCCS). Software testing documentation and training and AIC			
Title: Program Management ***Description:*** Program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning meetings and IPTs ***FY 2015 Accomplishments:*** Program Management - Includes Core, Matrix, and Contractor support ***FY 2016 Plans:*** Program Management - Includes Core, Matrix, and Contractor support ***FY 2017 Plans:*** Program Management - Includes Core, Matrix, and Contractor support	1.538	1.788	0.335
Accomplishments/Planned Programs Subtotals	8.144	18.384	3.303

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 334 / *Common Software*

D. Acquisition Strategy

The overall acquisition goal of the CS project is to provide common products that are used horizontally across programs, preventing duplication of effort by Army and Joint programs and facilitating life cycle cost efficiencies. All software development efforts will be competed among Capability Maturity Model Integration (CMMI) certified developers.

In accordance with the approved Net-enabled Mission Command Initial Capabilities Document (NeMC ICD), software capability will be developed in 3-year increments in support of Common Operating Environment (COE) Guidance designed to facilitate messaging, mediation and addressing for Army, Joint and Coalition Partners in synchronization with the maturity of the Common Operating Environment (COE) and Command Post Computing Environment (CP CE) architecture baselines. The product development funded under this R-Form is an integral part of the Mission Command systems, and a core communication component of the virtualized infrastructure and will be accomplished in part under a Project Manager, Mission Command (PM MC) General Services Administration (GSA) engineering services contract approach which will consist of multiple prime contractors competitively bidding on a single development solicitation. This strategy is designed to optimize opportunities for improved interoperability among the systems, to capture the benefits of competition, and to ensure the rapid integration of new capabilities into warfighter systems. This strategy is also designed to reduce the physical footprint, the logistics support requirements, and to increase operational efficiency by integration of additional system interoperability services which reduce duplication of effort and cost; and allows for development of communication standards across the DoD community.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 334 / *Common Software*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Management	Various	PM Mission Command : Aberdeen, MD	9.608	1.538	Nov 2014	1.788		0.335		-		0.335	Continuing	Continuing	0
		Subtotal	9.608	1.538		1.788		0.335		-		0.335	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Common Software Product Engineering/Software Development	C/CPFF	Various Contractors : Various Locations	0.000	-		4.259	Apr 2016	1.955	Apr 2017	-		1.955	Continuing	Continuing	0
Mission Command/Army System Engineering & Integration	C/CPFF	Future Skies : Wall Township, NJ	6.631	2.133	Mar 2015	-		-		-		-	0	8.764	6.679
Engineering & Integration for Joint and Coalition Interoperability	C/CPFF	Various Contractors : Various Locations	0.000	1.088	Mar 2015	2.450	Mar 2016	-		-		-	Continuing	Continuing	0
Evaluation, modification, validation & integration of developed SW	C/CPFF	Various Contractors : Various Locations	0.000	3.097	Mar 2015	3.063	Mar 2016	-		-		-	0	6.160	4.159
Tactical Server Infrastructure and Application Development	C/CPFF	CECOM Software Engineering Center : APG, MD	0.000	-		5.262	Dec 2015	0.713	Dec 2016	-		0.713	Continuing	Continuing	Continuing
		Subtotal	6.631	6.318		15.034		2.668		-		2.668	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test/ Operational Test	MIPR	Various : Various Locations	7.145	0.288	Mar 2015	1.562	Mar 2016	0.300	Mar 2017	-		0.300	Continuing	Continuing	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 334 / *Common Software*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	7.145	0.288		1.562		0.300		-		0.300	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.384	8.144		18.384		3.303		-		3.303	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 334 / *Common Software*

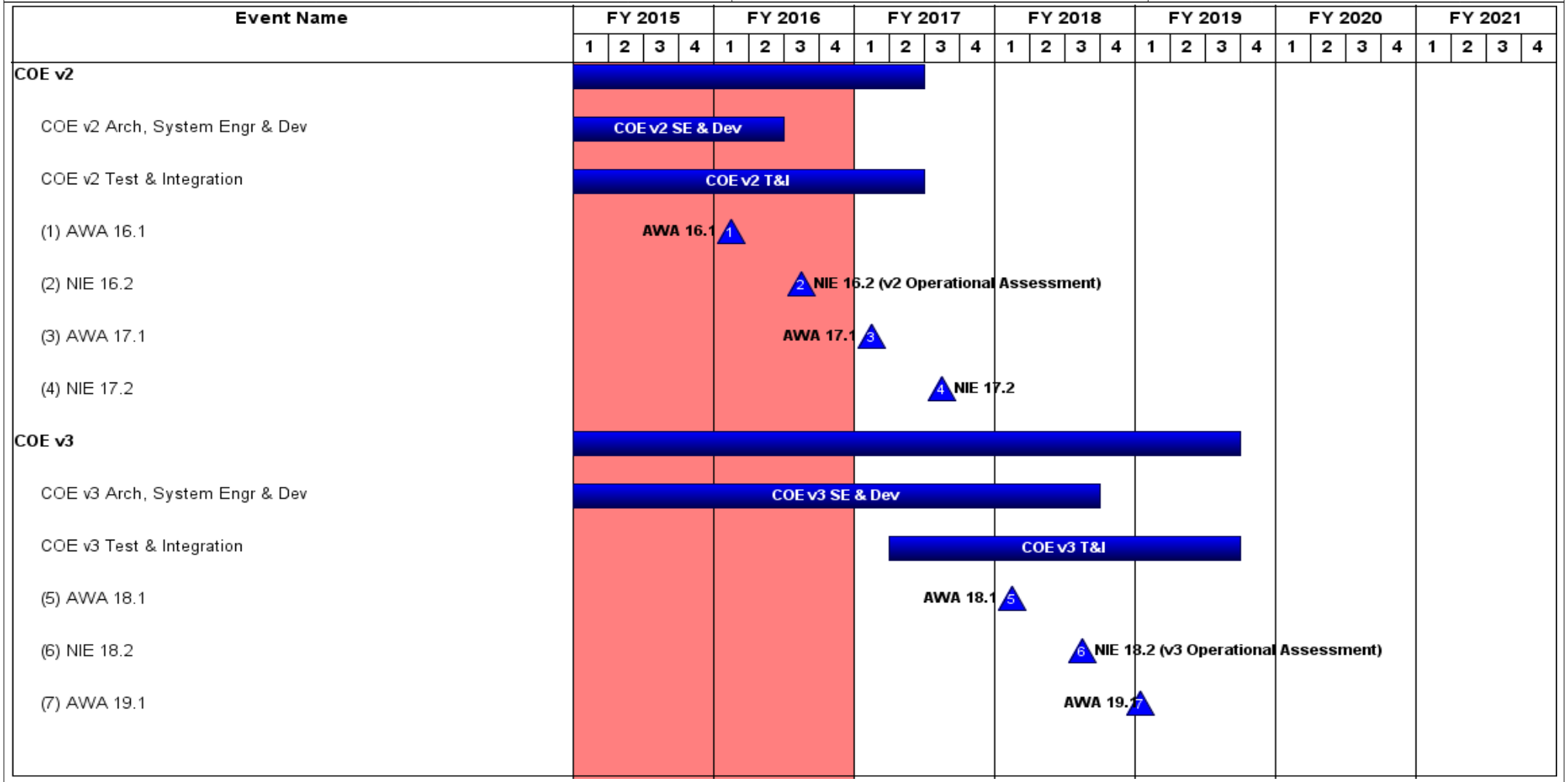

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 334 / *Common Software*

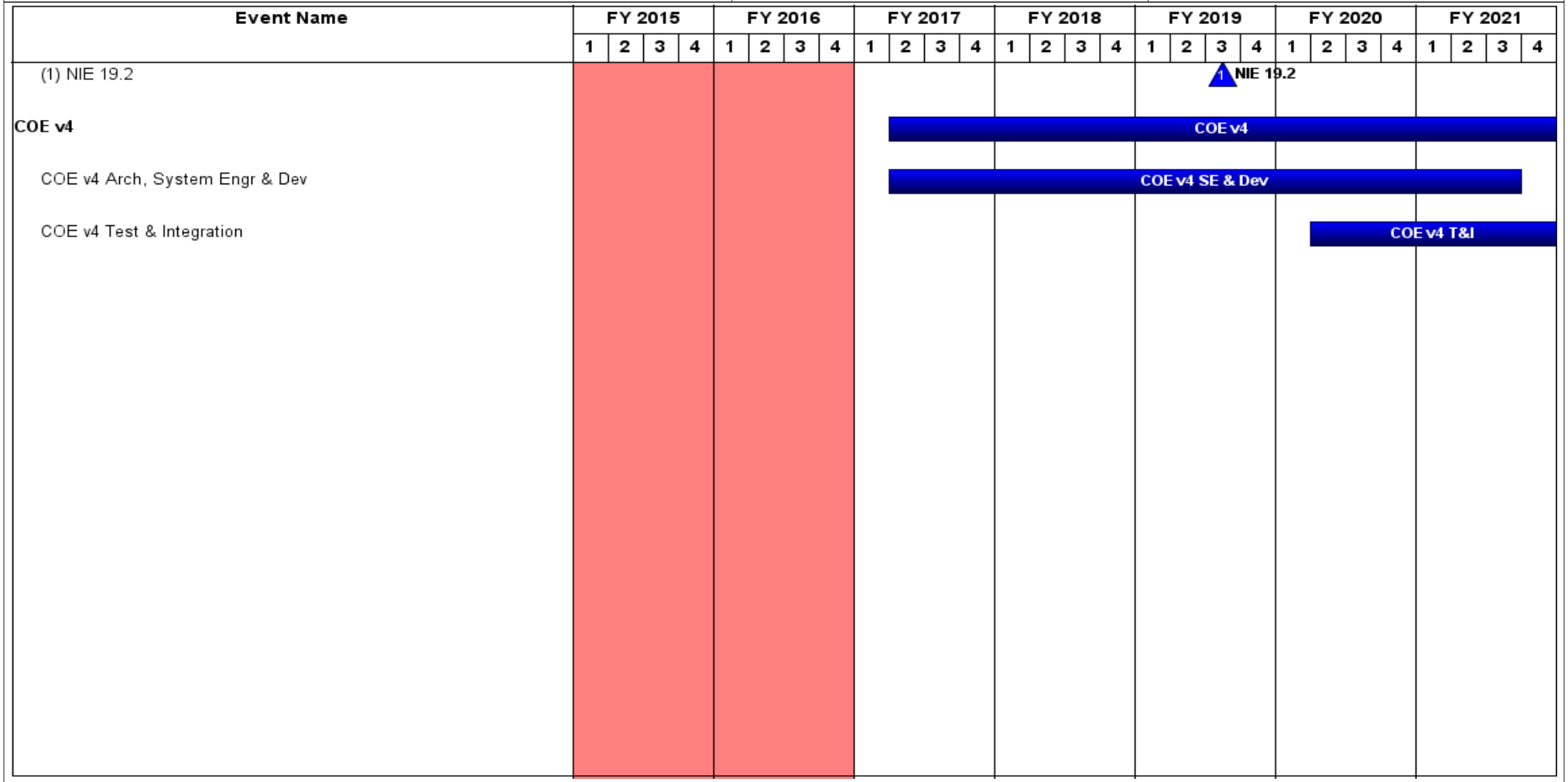

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 334 / *Common Software*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
COE v2	2	2012	2	2017
COE v2 Arch, System Engr & Dev	2	2012	2	2016
COE v2 Test & Integration	1	2015	2	2017
AWA 16.1	1	2016	1	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
NIE 17.2	3	2017	3	2017
COE v3	4	2014	3	2019
COE v3 Arch, System Engr & Dev	4	2014	3	2018
COE v3 Test & Integration	2	2017	3	2019
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE v4	2	2017	4	2021
COE v4 Arch, System Engr & Dev	2	2017	3	2021
COE v4 Test & Integration	2	2020	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C29 / *Centralized Technical Support Facility (CTSF)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
C29: *Centralized Technical Support Facility (CTSF)*	-	7.874	3.203	2.617	-	2.617	1.347	0.000	0.000	0.000	0.000	15.041
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project C29 - Centralized Technical Support Facility: The Central Technical Support Facility (CTSF) is the Army's premier test and certification facility for System of Systems interoperability, functioning as CIO/G6's designated independent test agent. CTSF is the Army's sole strategic facility responsible for conducting engineering support associated with test integration of Army LandWarNet/Mission Command (LWN/MC) architectures and baselines into the Army Interoperability Certification (AIC) system of systems environment, performing AIC testing and conducting configuration management for all operational and tactical level applications (individual systems, System of Systems, and Families of Systems) prior to fielding. The CTSF provides validated test data to the Department of the Army and Joint agencies to accredit interoperability certifications. The distributed test environment of the CTSF is accomplished through the Federation of Net-centric Sites (FaNS) construct. This FaNS construct addresses distributed integration development and testing using the core infrastructure of the CTSF to harness AMC, Army, and Joint expertise/ resources. Through these federated resources, the CTSF executes interoperability development and certification testing of the Warfighter mission areas, to include Network Evaluation spinouts, as they digitize and become part of the Army's LandWarNet.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Interoperability Certification (AIC) Testing	6.196	2.111	0.885
Description: Conduct Army Interoperability Certification (AIC), planning/coordination/scheduling/ and reporting of Common Operating Environment (COE) and software block testing (local and distributed). Provide stakeholders data collection/data analysis/data dissemination/simulation/stimulation verification/validation. Manage the set-up, configuration, integration, operations and maintenance of the LandWarNet/Mission Command systems within the CTSF test environments. Function as the CIO/G-6's Independent Test Agent for Program Managers of LWN/MC systems that have an Acquisition Life Cycle requirement for testing of software and associated hardware prior to fielding to the Warfighter. Report the results of Army Interoperability Certification Tests to the CIO/G-6, PM, and TRADOC communities to support updates to the G-3/5/7 managed baseline.			
FY 2015 Accomplishments: Executed integration support/testing/evaluation for SWB2, CS11-12, and COE v1.0 baselines and interoperability through test planning, test case development, information assurance software/compliance scans, and test tool verification. In support of the Assistant Secretary of the Army (Acquisition, Logistics, Technology) [ASA(ALT)], continued work on COE v1.0 and beyond, focusing on technical integration within the Computing Environment (CE) and Control Point (CP) construct, working to define control point specifications between CPs and testing methodology within CEs and between CEs as part of the Army transition to COE strategy. Assisted ASA(ALT) in refining COE architectures and services. Executed Army Interoperability Certification (AIC)			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Events T2.17, T11.12, T11.13. In support of the CIO/G-6 Interoperability and Cyber Integration Branches Network Vulnerability Assessment (NVA) Process Improvement effort, worked with Army Research Laboratory (ARL) Survivability/Lethality Analysis Division (SLAD) to define and document a repeatable cyber process that will provide Program Managers (PMs) the opportunity to mitigate cyber vulnerabilities identified during assessments. ***FY 2016 Plans:*** Continue SWB2, SWB11-12, and COE v1.X and beyond test planning, test case development, test environment architecture set-up, to include information assurance software compliance and software test tools. Upon completion of the ASA(ALT) Interoperability & Integration Event (I2E), conduct COE 1.X and beyond testing/evaluation and certification through execution of the COE v1.X AIC event. Continue to work to define CP specifications between CPs and testing methodology within CEs and between CEs as part of the Army transition to COE strategy, while working to incrementally implement and utilize distributed CP test processes and test architectures. Continue test case development and architecture set-up incorporating CP testing construct for the CE. ***FY 2017 Plans:*** Continue SWB2, SWB11-12, and COE v1.X and beyond test planning, test case development, test environment architecture set-up, to include information assurance software compliance, and software test tools. Continue to work to define CP specifications between CPs and testing methodology within CEs and between CEs as part of the Army transition to COE strategy, while working to incrementally implement and utilize distributed CP test processes and test architectures. Continue test case development and architecture set-up incorporating CP testing construct for the CE. Conduct COE v3.0 planning, test case development and architecture set-up incorporating CP testing construct for the CE.			
Title: Engineering Services ***Description:*** Provide network engineering support to establish and maintain tactical architectures on the CTSF test floors and to deploying/fielded units at training centers around the world (NIE, JRTC, NTC, JMRC). System engineering support provides hardware virtualization, advanced Host Based Security System (HBSS) support, system validation and integration support to numerous PMs on the integration and risk reduction labs, and assists Army programs with interoperability assessments and AIC rehearsal. Develop/Maintain Applications for CTSF in-house programs. ***FY 2015 Accomplishments:*** Supported AIC Integration and Testing. Conducted Network Integration Checkout prior to each AIC. Continued support to PMs for integration of future COE insertions. Continued support to backward compatibility testing between CS11-12/COE v1.0. Continued to identify and incorporate software tools to monitor performance and assist in issue resolution. Integrated and implemented HBSS technology. Assisted PMs in the development of HBSS policies. Assisted in defining integration and test architectures to include Program of Record (POR) and non-POR radio communications devices to provide PMs and	0.481	0.145	0.139

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Material Developers testing in realistic environments. Provided CTSF network and systems engineering for validation of end-to-end sensor and platform communications and interoperability. Provided software patch validation; provided network support for integration and test floors; provided network support to fielded units upon request; provided systems engineering and analysis support to system of systems integration activities. Provided PMs and CTSF Configuration Management (CM) with a Virtualization Suite and assisted in virtualizing software. Assisted Assistant Secretary of the Army (Acquisition, Logistics, Technology) (ASA(ALT)) in developing Control Point Testing for COE v3.0 and distributed testing between the Computing Environments (CEs). Assisted ASA(ALT) in defining the COE architectures and services. Assisted in Joint/Coalition Interoperability issues for multiple Combatant Commands. Conducted Enhanced Position Location and Reporting System (EPLRS) firmware and EPLRS Network Manager (ENM) Verification and Validation.			
FY 2016 Plans: Support AIC Integration and Testing. Continue Network Integration Checkout prior to each AIC. Continue support to PMs for integration of future COE insertions and for COE V3.0 integration. Support to backward compatibility testing between CS11-12/ COE V1.0/COE V3.0. Identify and incorporate software tools to monitor performance and assist in issue resolution. Integrate and implement HBSS technology. Assist PMs in the development of HBSS policies. Assist integration and test architectures to include POR and non-POR radio communications devices to provide PMs and Materiel Developers testing in realistic environments. Provide CTSF network and systems engineering for validation of end-to-end sensor and platform communications and interoperability. Provide software patch validation; network support for integration and test floors; network support to fielded units upon request; and systems engineering and analysis support to system of systems integration activities. Provide PMs and CTSF Configuration Management (CM) with a Virtualization Suite and assist in virtualizing software. Plan and conduct engineering evaluations for AIC testing and data collection in the Network Integration Evaluation (NIE)/Capability Integration Evaluation (CIE) to leverage the operational environment and NIE/CIE resources. Support Army Warfare Assessment (AWA), Joint Users Interoperability Communications Exercise (JUICE), and Bold Quest technology and interoperability demonstrations. Continue development and refinement of Control Point and distributed testing. Assist Assistant Secretary of the ASA(ALT) in developing and refining Control Point Testing for COE v3.0 and distributed testing between the CEs. Assist the CEs in Federation of Net-Centric Sites (FaNS) accreditation for distributed testing. Assist ASA(ALT) in defining the COE architectures and services. Assist in interoperability issues for multiple Combatant Commands. Conduct radio Verification and Validation.			
FY 2017 Plans: Support AIC Integration and Testing. Continue Network Integration Checkout prior to each AIC. Support to PMs for COE V3.0 and follow-on integration. Support to backward compatibility testing between CS11-12/COE V1.0/COE V3.0. Identify and incorporate software tools to monitor performance and assist in issue resolution. Integrate and implement HBSS technology. Assist PMs in the development of HBSS policies. Assist integration and test architectures to include POR and non-POR radio communications devices to provide PMs and Materiel Developers testing in realistic environments. Provide CTSF network and systems engineering for validation of end-to-end sensor and platform communications and interoperability. Provide software			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
patch validation; network support for integration and test floors; network support to fielded units upon request; and systems engineering and analysis support to system of systems integration activities. Provide PMs and CTSF Configuration Management (CM) with a Virtualization Suite and assist in virtualizing software. Plan and conduct engineering evaluations for AIC testing and data collection in the NIE/CIE to leverage the operational environment and NIE/CIE resources. Support Army Warfare Assessment (AWA), Joint Users Interoperability Communications Exercise (JUICE), and Bold Quest technology and coalition interoperability demonstrations. Continue development and refinement of Control Point and distributed testing. Assist ASA(ALT) in developing and refining Control Point Testing for COE v3.0 and distributed testing between the CEs. Assist the CEs in FaNS accreditation for distributed testing. Assist ASA(ALT) in defining the COE architectures and services. Assist in coalition partner interoperability issues for multiple Combatant Commands. Conduct radio Verification and Validation.			
Title: Configuration Management	0.176	0.139	0.358
Description: As Army Configuration Management Office (ACMO), establish and maintain oversight control of the Army Master Library for the Army Interoperability Certified Fielded Baseline (AICFB). Archive system software and data products, correlated with their associated documentation, for the LandWarNet Mission Command Baseline (ALWNMCB), a subset of the AICFB. Establish and maintain the configuration and change management to the AICFB and the ALWNMCB for Lifecycle Software Management (LCSM). Provide support to the Army Staff (ARSTAF), Material Developers (MATDEV), Project Managers (PM), and System Owners (SO) through the orderly management of product configuration information and product change management (ChM), which enables capability revisions, improved reliability and maintainability, extended life, and reduced cost. Maintain and improve the Configuration Management Tracking System v3 (CMTSIII), the Army's authoritative database management system (DBMS) for configuration management (CM) of the systems comprising Coalition Interoperability Assurance and Validation (CIAV), and the Warfighter Mission and Business Mission Areas of the Army Information Technology (IT) portfolio. Assist the CIO/G6 in conducting accreditation inspections & training for Federation of Net-centric Sites (FaNS) locations.			
FY 2015 Accomplishments: Performed CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provided baseline reconciliation to the four quarterly CIO/G6 AICFB reports, which identifies to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Performed formal inspection to the Program Executive Office Aviation FaNS location in support of CIO/G-6. Coordinated with CTSF Engineering Services to enhance the CMTSIII capabilities that provided services to CTSF Test & Evaluation (T&E) Management; added Test Incidence Report (TIR) Level 1 and Level 2 and Commander Reports; brought online the CMTSIII T&E Tool Suite consisting of six interoperable modules. Incorporated a CTSF Engineering Service Suite consisting of three interoperable modules within CMTSIII. Normalized data elements between the CMTSIII and the Army Portfolio Management System (APMS), in coordination with HQDA CIO/G-6			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Business Mission Area (BMA) Action Officer. Incorporated DA G-3/5/7 Army LandWarNet Mission Command Baseline and HQDA CIO/G-6 Army Interoperable Certified Fielded Baseline (AICFB) into the CMTSIII verification and validation process for the release of official baselines. Updated CMTSIII and added Observation Reporting (OR) to support ASA (ALT) Interoperability and Integration Evaluation (I2E), U.S. Army Coalition Interoperability Assurance & Validation (CIAV) Coalition Test and Evaluation Environment (CTE2) and Coalition Verification and Validation Environment (CV2E). Added U.S. Army CIAV capability and functionality to HQDA CIO/G-6 AICFB Change Management (ChM) module. Provided Configuration Management Tracking System III (CMTSIII) DBMS user training for newly assigned personnel.			
FY 2016 Plans: Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provided baseline reconciliation to the four quarterly CIO/G6 AICFB reports, which identifies to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the CIO/G6 in conducting accreditation inspections & training for Federation of net-centric Sites (FaNS) locations. Improve CMTSIII functionality by Implementing parent—child relationships within CMTSIII Data Products and Data Sets, and developing authoritative reports of relationships. Perform data normalization within CMTSIII and incorporate the Family of Systems (FoS) into submissions and reporting functions. Build separate CMTSIII modules for enhanced traceability of ASA(ALT) Integration and Interoperability Events (I2E), Observation Reporting, and HQDA CIO/G-6 monitoring and reporting of CMTSIII AIC Events. Revamp/revise CMTSIII Cybersecurity Security module, incorporating new Network Vulnerability Assessment, Host Based System Security, Information Assurance Vulnerability Assessment, and internal CTSF requirements. Build CMTSIII Resource Management (RM) Module in support of CTSF RM.			
FY 2017 Plans: Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provided baseline reconciliation to the four quarterly CIO/G6 AICFB reports, which identifies to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the CIO/G6 in conducting accreditation inspections & training for Federation of net-centric Sites (FaNS) locations. Continue CMTSIII evolutionary developments: Streamline the Reproduction Distribution Installation Training (RDIT) support from four discrete modules into a single Software Management Module, adding capability and accountability. Automate the ASA (ALT) Configuration Control Board slides and certification requirements into CMTSIII; expand reporting outputs. Collaborate to obtain system accreditation for, and implement, the Configuration Management Tracking System Virtual Console (CMTSVC). Initiate changes to enable CMTSIII to			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
maintain currency/compatibility with Common Operating Environment evolutionary developments. Define and establish the CM Continuity of Operations Plan (COOP) requirements.			
Title: Management Operations/Program Office ***Description:*** Provide management operations consisting of planning, programming and executing funds; planning and programming for required personnel; planning, programming and executing contracts supporting AIC testing processes; and identifying reimbursable tests and collecting/allocating appropriate funds. ***FY 2015 Accomplishments:*** Programmed and executed funds/manpower/contracting requirements; tracked testing schedule, prepared/coordinated/tracked reimbursements for tests (COE V1.0 Follow-On; CS 11-12 Bi-Annual testing events T11.12 and T11.13; Software Block 2 Bi-Annual testing events T2.17 and T2.19; Joint systems tests; and future systems test events). Provided field support coordination for unit training and exercises. Maintained facility and test infrastructure. ***FY 2016 Plans:*** Implement CMTSIII Resource Management Module and Reporting in programming and execution of funds/manpower/contracting requirements. Track testing schedules, prepare/coordinate/track reimbursements for tests [e.g. COE V1.X and Beyond tests and Bi-Annual Army Interoperability Certification (AIC) test events, CS 11-12 Tri-Annual AIC test events, SWB2 AIC test events, Joint, Coalition], and future systems test events. Provide field support coordination for unit training and exercises. Maintain facility and test infrastructure. ***FY 2017 Plans:*** Program and execute funds/manpower/contracting requirements; track testing schedule, prepare/coordinate/track reimbursements for tests (e.g. COE V1.0 and Beyond tests, CS 11-12 Bi-Annual testing, Joint, Coalition), and future systems test events. Provide field support coordination for unit training and exercises. Maintain facility and test infrastructure.	1.021	0.808	1.235
Accomplishments/Planned Programs Subtotals	7.874	3.203	2.617

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Execute system of systems interoperability testing and certification through the use of Government and Systems Engineering and Technical Analysis (SETA) contract personnel experienced in product development and interoperability testing. Testing and certification occurs in a cyclical fashion, with an expectation of an annual Software Block/Capability Set test followed with cyclical test events (Bi-Annual Tests) to ensure integrity of software baselines to the Warfighter. Engineering

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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Services provides strategic integration of software into a system of systems/family of systems environment to support interoperability testing. Establish and maintain Configuration Management and version control of the Army's Interoperable Battle Command LandWarNet Baseline. Distributed testing capability uses local assets and leverages other federated test facilities to create synergy and realize efficiencies, to include system of system test efforts, where possible at 2/1 AD/WSMR (NIE).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MITRE Corp	FFRDC	Engineering Services : Fort Hood, TX	16.873	0.305	Oct 2014	-		-		-		-	Continuing	Continuing	0
In-House	Allot	Engineering Services : Fort Hood, TX	2.372	0.176		-		-		-		-	Continuing	Continuing	0
		Subtotal	19.245	0.481		-		-		-		-	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM Matrix	Allot	Program and Budget Analysis Support : Fort Hood, TX/ Aberdeen Proving Grounds, MD	3.554	0.180	Oct 2014	0.202		0.183	Oct 2016	-		0.183	Continuing	Continuing	Continuing
In-House Support	Allot	Management Operations, Logistics Support : Fort Hood, TX	8.568	0.814	Oct 2014	0.546		0.924	Oct 2016	-		0.924	Continuing	Continuing	Continuing
ISSA/Training/TDY	Allot	Site Support Activities : Fort Hood, TX	0.000	-		-		0.062	Oct 2016	-		0.062	Continuing	Continuing	Continuing
Supplies	C/UCA	Management Operations, Logistics Support : Fort Hood, TX	1.222	0.027		0.060		0.066	Oct 2016	-		0.066	Continuing	Continuing	Continuing
		Subtotal	13.344	1.021		0.808		1.235		-		1.235	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM R2 3G	C/CPFF	Test, Configuration Management : Fort Hood, TX	6.544	2.703	Sep 2014	0.150		0.001	Sep 2016	-		0.001	Continuing	Continuing	Continuing
CECOM S3	C/CPFF	Facilities, Maintenance, Security : Fort Hood, TX	5.673	1.200	Mar 2015	0.150		0.358	Dec 2015	-		0.358	Continuing	Continuing	Continuing
ISSA	MIPR	Utilities & NEC Support : Fort Hood, TX	4.454	0.311		0.180		0.184	Oct 2016	-		0.184	Continuing	Continuing	Continuing
EPG Matrix	MIPR	Test : Fort Hood, TX	4.853	1.175	Oct 2014	1.116		0.155	Oct 2016	-		0.155	Continuing	Continuing	Continuing
In-House Support	Allot	Test : Fort Hood,TX	2.067	0.682	Oct 2014	0.695		0.684	Oct 2016	-		0.684	Continuing	Continuing	Continuing
Instrumentation	C/UCA	Test Equipment Infrastructure : Fort Hood, TX	1.587	0.301	Oct 2014	0.104		-		-		-	Continuing	Continuing	Continuing
		Subtotal	25.178	6.372		2.395		1.382		-		1.382	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	57.767	7.874		3.203		2.617		-		2.617	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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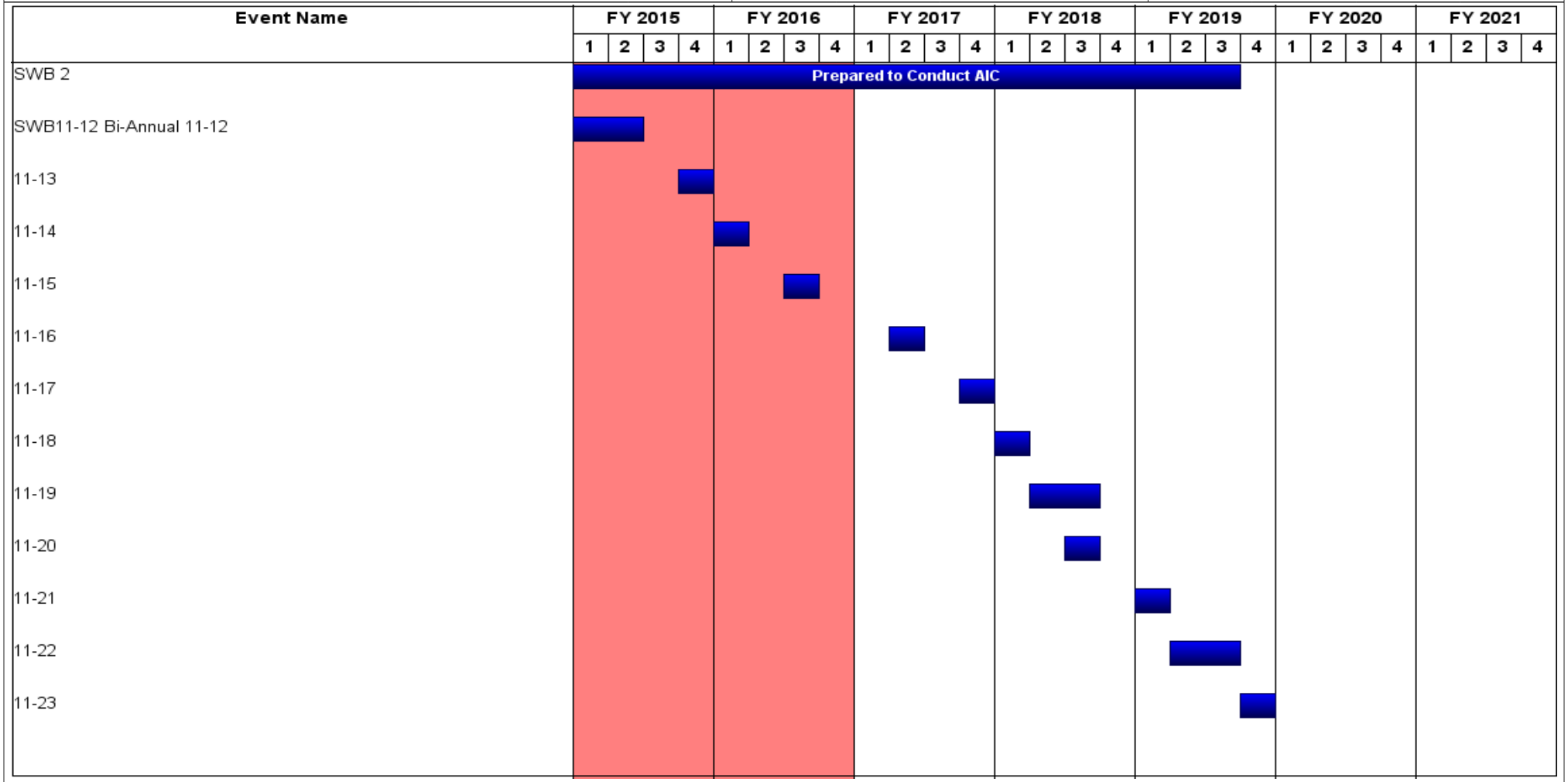

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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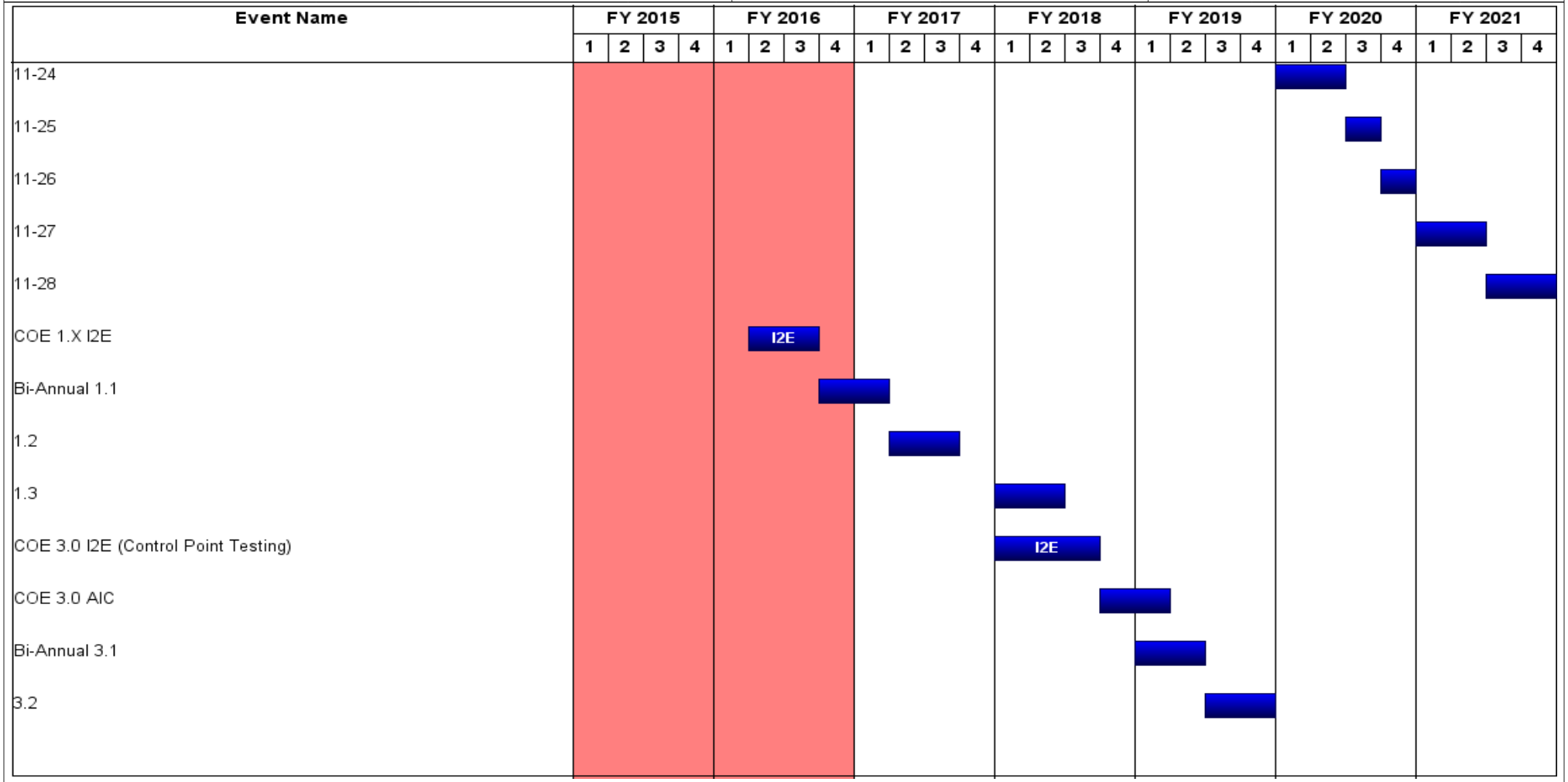

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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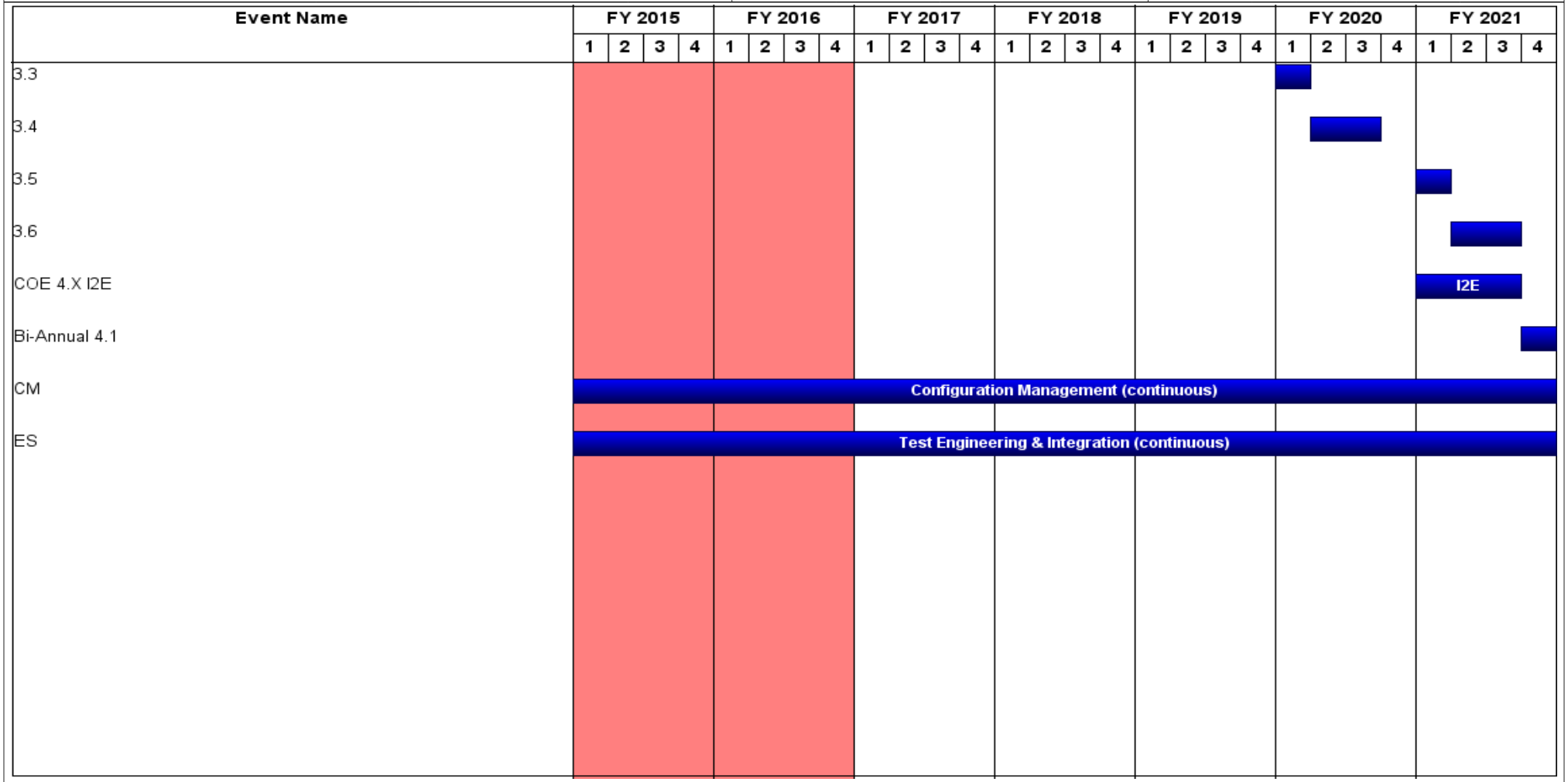

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SWB 2	1	2015	3	2019
SWB11-12 Bi-Annual 11-12	1	2015	2	2015
11-13	4	2015	4	2015
11-14	1	2016	1	2016
11-15	3	2016	3	2016
11-16	2	2017	2	2017
11-17	4	2017	4	2017
11-18	1	2018	1	2018
11-19	2	2018	3	2018
11-20	3	2018	3	2018
11-21	1	2019	1	2019
11-22	2	2019	3	2019
11-23	4	2019	4	2019
11-24	1	2020	2	2020
11-25	3	2020	3	2020
11-26	4	2020	4	2020
11-27	1	2021	2	2021
11-28	3	2021	4	2021
COE 1.X I2E	2	2016	3	2016
Bi-Annual 1.1	4	2016	1	2017
1.2	2	2017	3	2017
1.3	1	2018	2	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
COE 3.0 I2E (Control Point Testing)	1	2018	3	2018
COE 3.0 AIC	4	2018	1	2019
Bi-Annual 3.1	1	2019	2	2019
3.2	3	2019	4	2019
3.3	1	2020	1	2020
3.4	2	2020	3	2020
3.5	1	2021	1	2021
3.6	2	2021	3	2021
COE 4.X I2E	1	2021	3	2021
Bi-Annual 4.1	4	2021	4	2021
CM	2	2007	4	2022
ES	2	2007	4	2022

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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
C34: *Army Tac C2 Sys Eng*	-	9.168	8.842	8.881	-	8.881	9.094	9.151	9.259	9.497	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Project C34, Army Tactical Command and Control Systems Engineering: This project funds the PEO Command, Control, Communications-Tactical (PEO C3T) Technical Management Division (TMD) systems engineering and integration, experimentation, acquisition management, testing, fielding and sustainment support to ensure interoperability and affordability among the PEO C3T suite for Army Capability Sets (CS). The TMD focuses on System-of-Systems (SoS) Engineering and Integration for the C3T network with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies. Fiscal Year 2017 will focus on the continued development, implementation and integration of the Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR) network architectures. This will include development of a technology enhancement roadmap for SoS capability evolution across the PEO C3T portfolio; network integration support and design products for CS validation at Network Integration Evaluations (NIE); integration of tactical Networked capabilities for all CS, initiative fieldings, and integration events; integration of tactical information assurance solutions and security measures for consistent cyber protection; and execution of SoS developmental testing across the PEO portfolio in support of capability set fieldings.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Continue Army Tactical Battle Command and Network Synchronization and Integration Support	0.141	0.136	0.137
Description: .			
FY 2015 Accomplishments: Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Common Operating Environment.			
FY 2016 Plans: Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Common Operating Environment.			
FY 2017 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Common Operating Environment.			
Title: Continue Developmental Testing & Integration Testing between Programs of Record (PORs) and platforms / Command Posts (CPs) to execute System-of-Systems (SoS) and Interoperability ***Description:*** . ***FY 2015 Accomplishments:*** Continue to conduct integration testing and systems engineering for C3T non-program of record and program of record systems, products, technical insertions, and systems under evaluation to ensure integration of capabilities across the network. Provide training and continued development of current engineers. ***FY 2016 Plans:*** Continue to conduct integration testing and systems engineering for C3T non-program of record and program of record systems, products, technical insertions, and systems under evaluation to ensure integration of capabilities across the network. Provide training and continued development of current engineers. ***FY 2017 Plans:*** Continue to conduct integration testing and systems engineering for C3T non-program of record and program of record systems, products, technical insertions, and systems under evaluation to ensure integration of capabilities across the network. Provide training and continued development of current engineers.	1.372	1.324	1.329
Title: Continue Tactical Network Engineering ***Description:*** . ***FY 2015 Accomplishments:*** Develop effective engineering strategies to integrate tactical applications for use across the C3T enterprise network. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies. ***FY 2016 Plans:*** Develop effective engineering strategies to integrate tactical applications for use across the C3T enterprise network. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies. ***FY 2017 Plans:***	0.787	0.759	0.762

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Develop effective engineering strategies to integrate tactical applications for use across the C3T enterprise network. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies.			
Title: Conduct and Support System Interoperability Engineering and Development of System-of-Systems (SoS) Architectural Products ***Description:*** . ***FY 2015 Accomplishments:*** Within the PEO C3T portfolio, continue to assess Emerging Technologies, identify critical integrated test points, conduct developmental testing at integration points, develop architectural data process/tool kits, and facilitate the transition of Network capabilities to the warfighter. ***FY 2016 Plans:*** Within the PEO C3T portfolio, continue to assess Emerging Technologies, identify critical integrated test points, conduct developmental testing at integration points, develop architectural data process/tool kits, and facilitate the transition of Network capabilities to the warfighter. ***FY 2017 Plans:*** Within the PEO C3T portfolio, continue to assess Emerging Technologies, identify critical integrated test points, conduct developmental testing at integration points, develop architectural data process/tool kits, and facilitate the transition of Network capabilities to the warfighter.	1.767	1.704	1.711
Title: Continue Development and Implementation of Tactical Information Assurance (IA) ***Description:*** . ***FY 2015 Accomplishments:*** Implement CIO/G6 and CYBERCOM guidance for execution of Information Assurance policies and procedures at the tactical level. Continue to document the current tactical IA network architecture with the goal of developing recommendations to eliminate inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Continue to plan and design security measures and IA requirements across the tactical network for future capabilities. ***FY 2016 Plans:*** Implement CIO/G6 and CYBERCOM guidance for execution of Information Assurance policies and procedures at the tactical level. Continue to document the current tactical IA network architecture with the goal of developing recommendations to eliminate	0.267	0.257	0.259

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Continue to plan and design security measures and IA requirements across the tactical network for future capabilities. ***FY 2017 Plans:*** Implement CIO/G6 and CYBERCOM guidance for execution of Information Assurance policies and procedures at the tactical level. Continue to document the current tactical IA network architecture with the goal of developing recommendations to eliminate inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Continue to plan and design security measures and IA requirements across the tactical network for future capabilities.			
Title: Continue System of Systems Development ***Description:*** . ***FY 2015 Accomplishments:*** Continue to effectively manage overall System-of-Systems Engineering, Enterprise, and Integration efforts for the PEO C3T portfolio of technology and capability enhancement programs. ***FY 2016 Plans:*** Continue to effectively manage overall System-of-Systems Engineering, Enterprise, and Integration efforts for the PEO C3T portfolio of technology and capability enhancement programs. ***FY 2017 Plans:*** Continue to effectively manage overall System-of-Systems Engineering, Enterprise, and Integration efforts for the PEO C3T portfolio of technology and capability enhancement programs.	3.145	3.033	3.047
Title: System of Systems (SoS) Engineering and Integration Evolution of the Network ***Description:*** . ***FY 2015 Accomplishments:*** Continue to develop streamlined processes to support ASA(ALT) SoSE&I and implement Value Engineering (VE) and Lean Six Sigma initiatives across all PEO C3T capabilities to include the Joint Coalition partners. Also continue to implement cross PEO System of Systems Engineering and Integration processes to ensure successful development Engineering and Testing. ***FY 2016 Plans:***	1.689	1.629	1.636

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue to develop streamlined processes to support ASA(ALT) SoSE&I and implement Value Engineering (VE) and Lean Six Sigma initiatives across all PEO C3T capabilities to include the Joint Coalition partners. Also continue to implement cross PEO System of Systems Engineering and Integration processes to ensure successful development Engineering and Testing. ***FY 2017 Plans:*** Continue to develop streamlined processes to support ASA(ALT) SoSE&I and implement Value Engineering (VE) and Lean Six Sigma initiatives across all PEO C3T capabilities to include the Joint Coalition partners. Also continue to implement cross PEO System of Systems Engineering and Integration processes to ensure successful development Engineering and Testing.			
Accomplishments/Planned Programs Subtotals	9.168	8.842	8.881

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Not applicable for this item.

D. Acquisition Strategy

This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, interoperability, support to fielding and sustainment. It will focus on System-of-Systems (SoS) Systems Engineering and Integration for the tactical network with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies, through the G3 LandWarNet Capability Set Development and Integration. The Technical Management Division (TMD) will ensure that the Program Executive Office Command, Control, Communications-Tactical (PEO C3T) capability portfolio is effectively SoS engineered and integrated to meet the tactical Warfighter's evolving mission needs.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Emerging Technologies	SS/FP	CACI : Aberdeen Proving Ground, MD	21.092	-		-		-		-		-	0	21.092	0
Emerging Technologies	SS/FP	Southwest Research Installation : Aberdeen Proving Ground, MD	0.175	-		-		-		-		-	0	0.175	0
System Of System Engineering and Integration, Current and Strategic Initiatives	C/T&M	CSC Aberdeen Proving Ground /Fort Hood, TX : APG	57.690	-		-		-		-		-	0	57.690	0
System of System Engineering & Integration, Current & Strategic Initiative, Architecture Integration	SS/CPFF	Bowhead : Aberdeen Proving Ground, MD	3.412	2.674		2.566		2.577		-		2.577	Continuing	Continuing	Continuing
Architecture Integration	C/T&M	CSC : various	9.005	-		-		-		-		-	0	9.005	0
Systems Engineering Support	SS/FP	LOCKHEED MARTIN : Eatontown, NJ	7.799	-		-		-		-		-	0	7.799	0
Systems Engineering Support	C/CPFF	Northrop Grumman : Arlington, VA	5.282	-		-		-		-		-	0	5.282	0
Systems Engineering Support	C/CPFF	TBD- Various : tbd	1.786	0.917		0.372		0.374		-		0.374	0	3.449	0
System of System Architectures, Engineering, and Integration	SS/FP	MITRE : Aberdeen Proving Ground, MD/ Eatontown, NJ	84.123	2.706		4.340		4.359		-		4.359	Continuing	Continuing	Continuing
Tactical Network Initialization	SS/FP	Future Skys Inc. : Neptune, NJ	0.600	-		-		-		-		-	0	0.600	0
System of System Engineering and Integration	C/T&M	CSC : Huntsville, AL	0.000	0.183		-		-		-		-	0	0.183	0
System of System Engineering and Integration	C/T&M	Viatech : NJ	0.000	0.367		-		-		-		-	0	0.367	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	190.964	6.847		7.278		7.310		-		7.310	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IN-HOUSE SUPPORT	Various	PEO C3T : APG, MD	28.687	1.839		1.125		1.130		-		1.130	Continuing	Continuing	Continuing
MATRIX	Various	Various : Aberdeen Proving Ground, MD	11.890	0.482		0.439		0.441		-		0.441	Continuing	Continuing	Continuing
OTHER GOVERNMENT SUPPORT	Various	Various : Various	7.377	-		-		-		-		-	0	7.377	0
		Subtotal	47.954	2.321		1.564		1.571		-		1.571	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	238.918	9.168		8.842		8.881		-		8.881	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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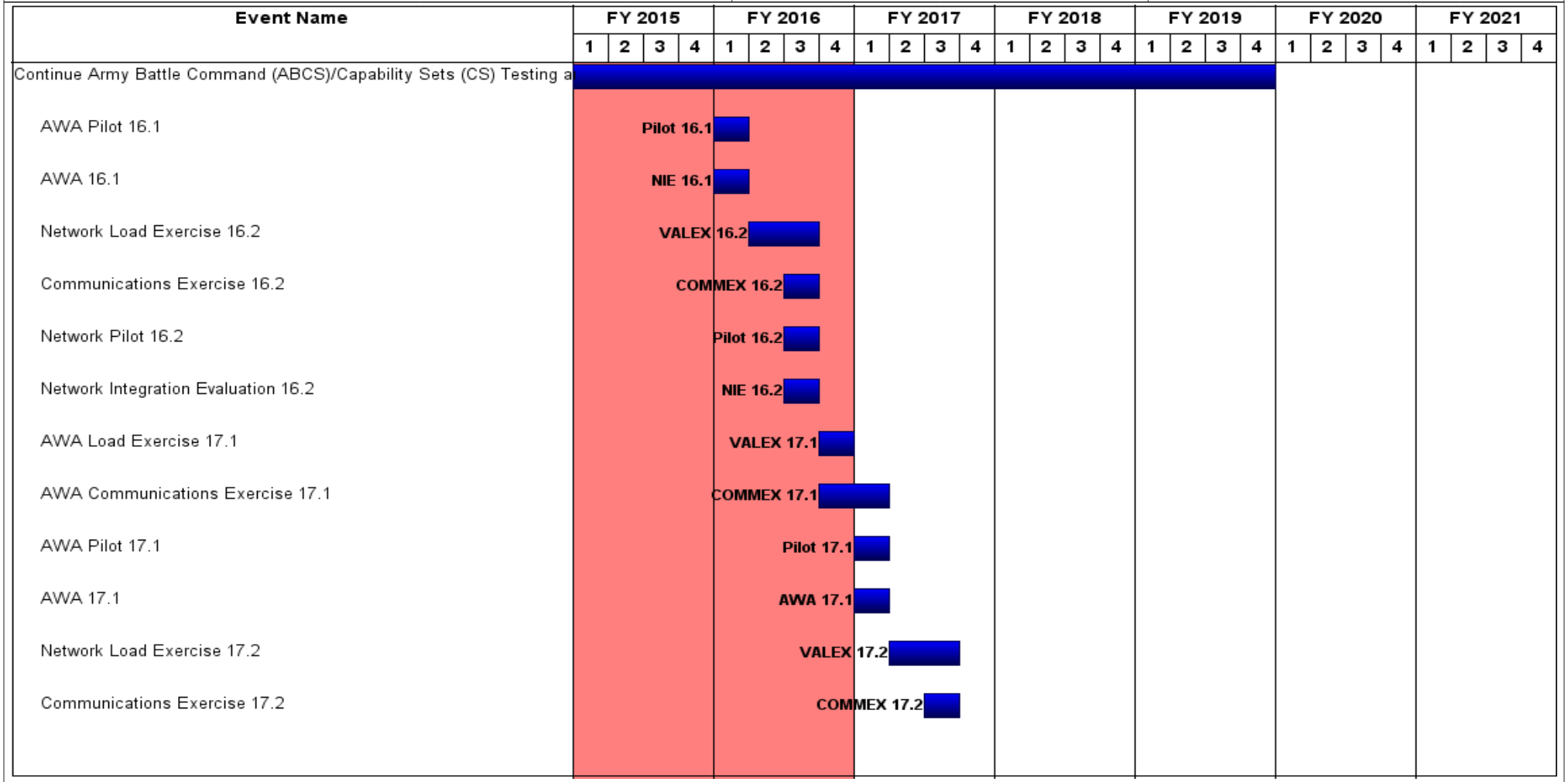

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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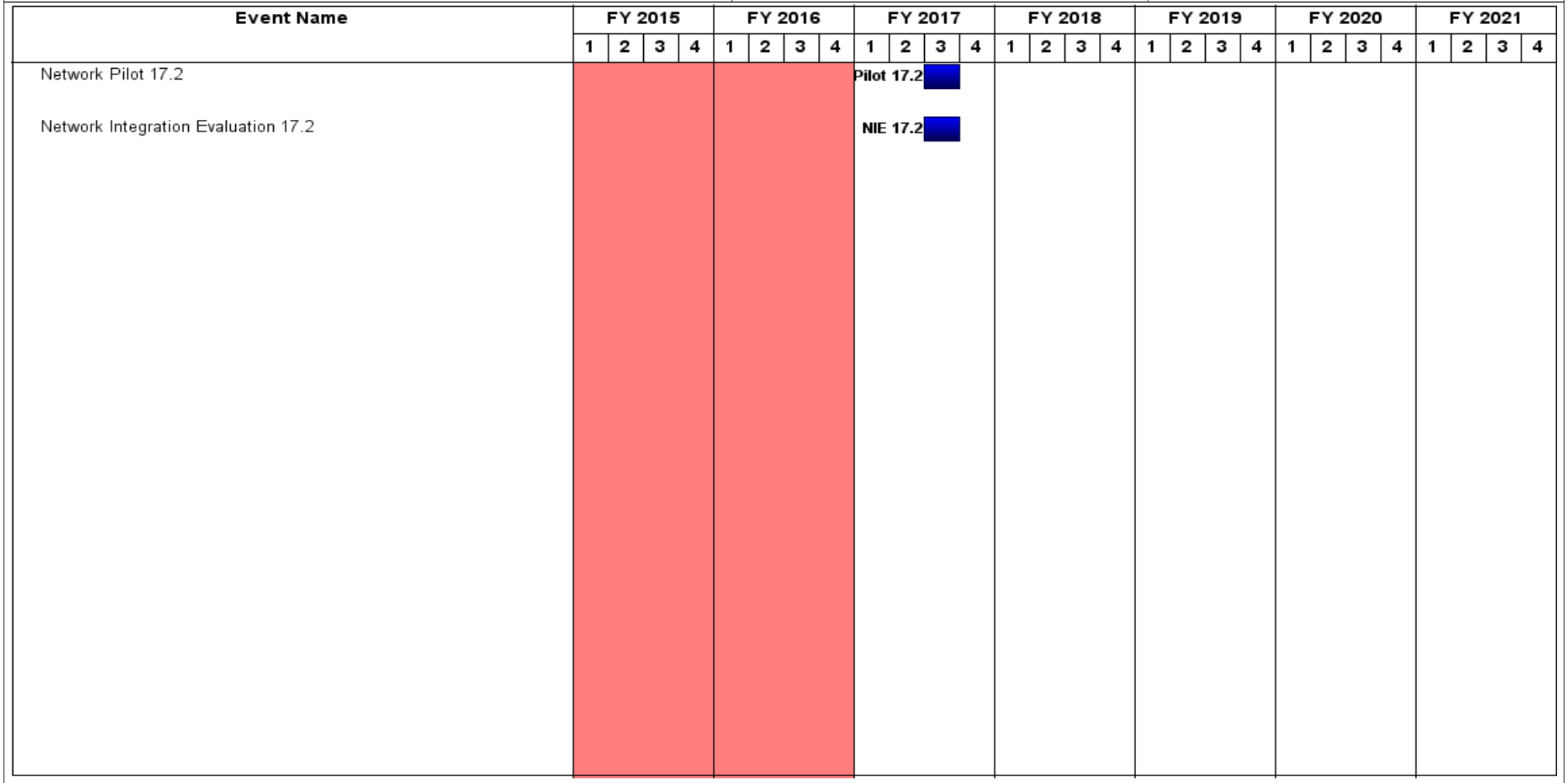

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Continue Army Battle Command (ABCS)/Capability Sets (CS) Testing and Eval	1	2008	4	2019
AWA Pilot 16.1	1	2016	1	2016
AWA 16.1	1	2016	1	2016
Network Load Exercise 16.2	2	2016	3	2016
Communications Exercise 16.2	3	2016	3	2016
Network Pilot 16.2	3	2016	3	2016
Network Integration Evaluation 16.2	3	2016	3	2016
AWA Load Exercise 17.1	4	2016	4	2016
AWA Communications Exercise 17.1	4	2016	1	2017
AWA Pilot 17.1	1	2017	1	2017
AWA 17.1	1	2017	1	2017
Network Load Exercise 17.2	2	2017	3	2017
Communications Exercise 17.2	3	2017	3	2017
Network Pilot 17.2	3	2017	3	2017
Network Integration Evaluation 17.2	3	2017	3	2017

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	0.000	70.483	82.091	-	82.091	98.078	63.689	5.906	15.004	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Command Post Computing Environment (CPCE), one of the six computing environments under the Common Operating Environment (COE) initiative, provides a Common Infrastructure and Common Services for Warfighter capabilities. The resulting operating environment will allow twenty-six (26) products/systems to leverage the CPCE's Common Core Software Baseline and Hardware Configuration, simplifying future development efforts and enhancing interoperability and data sharing. The CPCE enables Command and Control (C2) capability development at tactical echelons that span from the company to all Army Service Component Commands (ASCC) and thus, is the most employed and critical computing environment developed to support the command posts and combat operations.

Operationally, Army formations encounter a variety of complex environments where boundaries between tactical and strategic levels of war have merged. This requires a computing environment capability that will simplify operations, enhance the Common Operational Picture (COP), provide integrated applications and data, enhance communications in disconnected, intermittent, and limited bandwidth (DIL) environments, and automate software updates. Additional CPCE goals include: Multi-Echelon reach (ASCC thru Battalion), Cross Cutting Capabilities (CCCs), C2 on the Move (C2OTM), Strategic and Tactical Operational and intelligence data sharing, Unified Data on a Common Map, and Sharing Data to Other Computing Environments (Mobile Handheld, Mounted, Sensors, etc.).

Acquisition Goals of the CPCE include: Acquisition Agility, Open Architectures, Reduced Life Cycle Costs, and a Cyber-Hardened Foundation for applications and services.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: SW Dev - Infrastructure (Collaboration)	-	17.040	13.995
Description: Collaboration is the ability to share and communicate information for the purpose of achieving common and shared understanding of the military situation for all participants across all warfighting functions and operational nodes. Includes efforts on chat, voice, file sharing, map boarding, shared workspace, video & disconnected intermittent latent environment support ***FY 2016 Plans:*** Conduct the common architecting and design of initial collaboration in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of collaboration.			
Title: SW Dev - Infrastructure (Display/Share Relevant Tactical Information)	-	1.830	2.486

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Common graphical user interface, shared data and tools such as decision making, planning. Common widgets and style guides to include common map and common query of data. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Display/Share Relevant Tactical Information in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Display/Share Relevant Tactical Information.			
Title: SW Dev - Infrastructure (C2 on the Move) ***Description:*** Provides key leaders and staffs the ability to maintain situational understanding and access to information when transitioning between operational nodes (dismounted, mounted, and within a command post) ***FY 2016 Plans:*** Conduct the common architecting and design of initial Command and Control on the Move in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Command and Control on the Move.	-	0.470	1.737
Title: SW Dev - Infrastructure (Application Marketplace) ***Description:*** Provide users the ability to discover and access variety of CP CE web applications available without having all applications predefined or preinstalled on end user device. Provide users with applications that utilize common software functions (ie security) ***FY 2016 Plans:*** Conduct the common architecting and design of initial Application Marketplace in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Application Marketplace.	-	1.570	2.905
Title: SW Dev - Infrastructure (Training Support)	-	0.630	1.260

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Create a training environment for the soldiers; provide the soldier the same look and feel as applications/widgets that are used to perform their mission. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Training Support in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Training Support.			
Title: SW Dev - Infrastructure (Joint & Coalition Interoperability) ***Description:*** Provide the capability and interoperability services for improved exchange of information, collaboration, and full interaction with Joint, Interagency, Intergovernmental, and Multinational stakeholders comprising Unified Action Partners. ***FY 2016 Plans:*** Conduct the common architecting and design of initial JIIM Interoperability in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of JIIM Interoperability.	-	11.250	8.027
Title: SW Dev - Infrastructure (Execute Running Estimates) ***Description:*** Provides implementation of MC Planning Services and tools that support all Commanders and their staffs executing the MDMP for all mission types. Includes onthe ability to generate and save plans as data so plans can be intelligently compared to current operations as plans are executed. When the current situation differs from the plan, alerts and recommendations for plan changes are provided to the Commander. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Execute Running Estimates in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Execute Running Estimates.	-	0.830	0.300
Title: SW Dev - Infrastructure (Unified Data Synch) ***Description:*** As part of Command Post Infrastructure Services; Provides users the capability to search for and access information that spans multiple warfighting functions when available from a consolidated set of data stores that make information available at the point of need. Data created in garrison made available en route to and while executing military operations.	-	3.300	5.980

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2016 Plans: Conduct the common architecting and design of initial Unified Data Synch in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Unified Data Synch.			
Title: SW Dev - Infrastructure (Create/Communicate/Rehearse Orders) ***Description:*** Provides implementation of tools to support consolidation of products and information produced during the planning process and then supports automatic generation of orders with ability to disseminate those orders across the command. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Create/Communicate/Rehearse Orders in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Create/ Communicate/Rehearse Orders.	-	3.360	2.316
Title: SW Dev - Infrastructure (Execute Tactical NetOps) ***Description:*** Improved Tactical NetOps increases deployment flexibility, simplifies application management processes, and improves application & network defenses on NIPR, SIPR, and MPE security domains. Tactical NetOps ensures distributed network control and facilitated net-centric sharing of network configuration, status, security, performance, utilization, and mission impact data for authorized users. ***FY 2016 Plans:*** Conduct the common architecting and design of initial Execute Tactical NetOps in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Execute Tactical NetOps.	-	1.150	3.768
Title: SW Dev - Infrastructure (Quality of Service) ***Description:*** Quality of Service is the marking of network packets so that WIN-T (i.e. the network) can route them according their priority. ***FY 2016 Plans:***	-	5.500	3.294

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Conduct the common architecting and design of initial Quality of Service in support of CPCE v3 capabilities. ***FY 2017 Plans:*** Continue design efforts, to include integration and lab based developmental and system of system testing of Quality of Service.			
Title: Software Development - Applications ***Description:*** Software Development efforts in support of the implementation of the Command Post Computing Environment (CPCE) include the migration of current Program of Record capability, coordination of software version baselines, design and development of next generation Mission Command capabilities that simplify the User Experience and enhance Situational Understanding, and design/coding of Software Development Kits (SDKs). ***FY 2016 Plans:*** Funding supports system engineering and software development efforts to build applications for CP CE version 3. The Primary applications development efforts include, but are not limited to: 1) C2 On-The-Move: Provides key leaders and staffs the ability to maintain situational understanding and access to information when transitioning between operational nodes (dismounted, mounted, and within a command post); 2) Application Marketplace: Provides users the ability to discover and access variety of CP CE web applications available without having all applications predefined or preinstalled on end user device. Provide users with applications that utilize common software functions (i.e. security); 3) JIIM Interoperability: Provides the capability and interoperability services for improved exchange of information, collaboration, and full interaction with Joint, Interagency, Intergovernmental, and Multinational stakeholders comprising Unified Action Partners. The CPCE applications efforts will enable migration of the logistics and maneuver critical capabilities to CP CE, create a single map for Commander, and simplify the user interface. This effort will lead to a CP CE Application Critical Design Review (CDR). ***FY 2017 Plans:*** Funding supports system engineering and software development efforts to build applications for CP CE version 3. The Primary applications development efforts include, but are not limited to: 1) C2 On-The-Move: Provides key leaders and staffs the ability to maintain situational understanding and access to information when transitioning between operational nodes (dismounted, mounted, and within a command post); 2) Application Marketplace: Provides users the ability to discover and access variety of CP CE web applications available without having all applications predefined or preinstalled on end user device. Provide users with applications that utilize common software functions (i.e. security); 3) JIIM Interoperability: Provides the capability and interoperability services for improved exchange of information, collaboration, and full interaction with Joint, Interagency, Intergovernmental, and Multinational stakeholders comprising Unified Action Partners.	-	2.711	17.167

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
The CPCE applications efforts will enable migration of the logistics and maneuver critical capabilities to CP CE, create a single map for Commander, and simplify the user interface. This effort will lead to a CP CE Application Critical Design Review (CDR).			
Title: Test and Evaluation ***Description:*** Test and Evaluation efforts include the planning and conduct of Mission Command Test, Evaluation, and Integration events in support of CPCE development. Testing can consists of stand-alone capability testing in a lab/sandbox environment or full interoperability testing with multiple systems in an operational environment. ***FY 2016 Plans:*** Test software capability of the core Mission Command CP CE infrastructure, as well as establish tools and processes for 3rd party application testing and accreditation. Test and Evaluation efforts include the planning and conduct of Mission Command Test, Evaluation, and Integration events in support of CP CE development. This includes participation in Network Integration Exercises (NIEs), User Juries, Assessments, Risk Reduction Events (RREs), Vulnerability testing, and Army Interoperability Certification (AIC) testing. ***FY 2017 Plans:*** Test software capability of the core Mission Command CP CE infrastructure, as well as establish tools and processes for 3rd party application testing and accreditation. Test and Evaluation efforts include the planning and conduct of Mission Command Test, Evaluation, and Integration events in support of CP CE development. This includes participation in Network Integration Exercises (NIEs), User Juries, Assessments, Risk Reduction Events (RREs), Vulnerability testing, Army Interoperability Certification (AIC) testing, and in FY 17 Operational Test (OT).	-	12.663	10.408
Title: Program Management ***Description:*** Program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning meetings and IPTs. ***FY 2016 Plans:*** During this timeframe, will provide overall management and oversight of the implementation of CPCE. Technical Area support of this effort includes System Development (Hardware, Software, and Network), System Analysis of Program of Record (PoR) systems and Future Systems, Technical Readiness Assessments, and Stakeholder Technical Interchange Meetings/Events. Business Area support of this effort will require the coordination of multiple contracts, vendors, contract vehicles, and funding. This support includes the creation and implementation of Functional Support Agreements between PM Mission Command and various Government support agencies such as the CECOM Research Development and Engineering Command (CERDEC), and	-	8.179	8.448

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
other PEOs (e.g. PEO IEW&S). Program Management efforts in the FY16 timeframe will also include business area support to ensure funding and contracts are planned and available for all SW development, system engineering, and T&E efforts. ***FY 2017 Plans:*** During this timeframe, will provide overall management and oversight of the implementation of CPCE. Technical Area support of this effort includes System Development (Hardware, Software, and Network), System Analysis of Program of Record (PoR) systems and Future Systems, Technical Readiness Assessments, and Stakeholder Technical Interchange Meetings/Events. Business Area support of this effort will require the coordination of multiple contracts, vendors, contract vehicles, and funding. This support includes the creation and implementation of Functional Support Agreements between PM Mission Command and various Government support agencies such as the CECOM Research Development and Engineering Command (CERDEC), and other PEOs (e.g. PEO IEW&S). Program Management efforts in the FY17 timeframe will also include business area support to ensure funding and contracts are planned and available for all SW development, system engineering, and T&E efforts.			
Accomplishments/Planned Programs Subtotals	-	70.483	82.091

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Department of the Army, Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA/ALT) directed the migration to the Command Post Computing Environment (CPCE), one of the six Computing Environments within the Common Operating Environment (COE), in December 2011.

To meet the CPCE goals of a common infrastructure, services and data layers that all Warfighting Function application providers can leverage, PEO C3T and PEO IEW&S (as co-leads for CPCE) will architect, design, integrate, test and field the hardware, software, network solutions and capabilities required to meet the normalized requirements from the participating Programs of Record while maintaining compliance with COE standards and intent.

Efforts are being accomplished through a mixture of organic Government and industry partners. GOGO partners include the U.S. Army Armament Research, Development and Engineering Center (ARDEC) Weapons Software Engineering Center (WSEC), CECOM Software Engineering Center (SEC), Aviation and Missiles RDEC (AMRDEC) Software Engineering Directorate (SED) and Communications-Electronics Research, Development and Engineering Center (CERDEC) and are allocated efforts through individual Task Orders. Commercial suppliers are assigned efforts through GSA Mission Command Engineering Services vehicles and Multiple Award Task Order (MATO) contracts.

Hardware and core software and associated licenses to support converged system architecture is Commercial-off-the-Shelf (COTS) and procured through existing vehicles from Common Hardware Systems (CHS) and the Army Computer Hardware Enterprise Software and Solutions (CHESS).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

CPCE is not a Program of Record (PoR).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Gov't-Core)	Sub Allot	PM Mission Command : APG, MD	0.000	-		1.970	Oct 2015	2.250	Oct 2016	-		2.250	0	4.220	0
PM Support (Gov't-Matrix)	IA	Various Matrix Orgs incl CECOM SEC, LRC, G8, G2, PRD, et al) : APG, MD	0.000	-		1.970	Oct 2015	1.400	Oct 2016	-		1.400	0	3.370	0
PM Support (SETA Contractor)	C/CPFF	Multiple incl CSC and others : APG, MD	0.000	-		4.239	Dec 2015	4.798	Dec 2016	-		4.798	0	9.037	0
		Subtotal	0.000	-		8.179		8.448		-		8.448	0.000	16.627	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - Infrastructure	Various	SW Dev Contractors and Multiple Matrix Orgs : Various Locations	0.000	-		46.930	Dec 2015	46.068	Dec 2016	-		46.068	0	92.998	0
Software Development - Applications	Various	SW Dev Contractors and Multiple Matrix Orgs : Various Locations	0.000	-		2.711	Dec 2015	17.167	Dec 2016	-		17.167	0	19.878	0
		Subtotal	0.000	-		49.641		63.235		-		63.235	0.000	112.876	0.000

Remarks

Software Development efforts will be managed through a combination of PM Mission Command technical staff, Matrix Organizations (CERDEC, AMRDEC) and software development contractor firms (contracts and task orders to be determined and competed as necessary).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop and Conduct Tests and Assessments	MIPR	Multiple Test Agencies : Multiple Locations (Primary APG)	0.000	-		12.663	Dec 2015	10.408	Dec 2016	-		10.408	0	23.071	0
		Subtotal	0.000	-		12.663		10.408		-		10.408	0.000	23.071	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		70.483		82.091		-		82.091	0.000	152.574	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

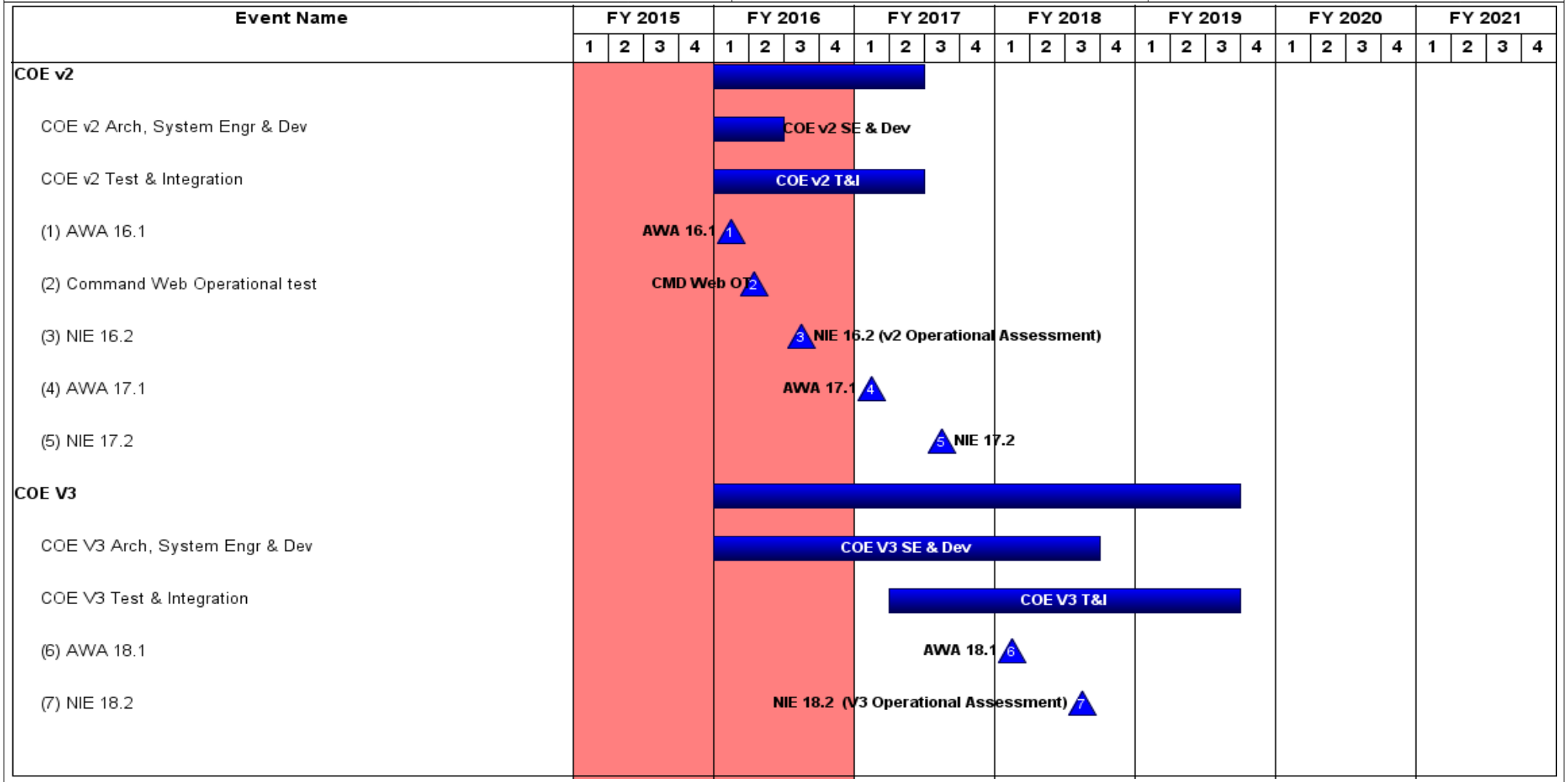

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

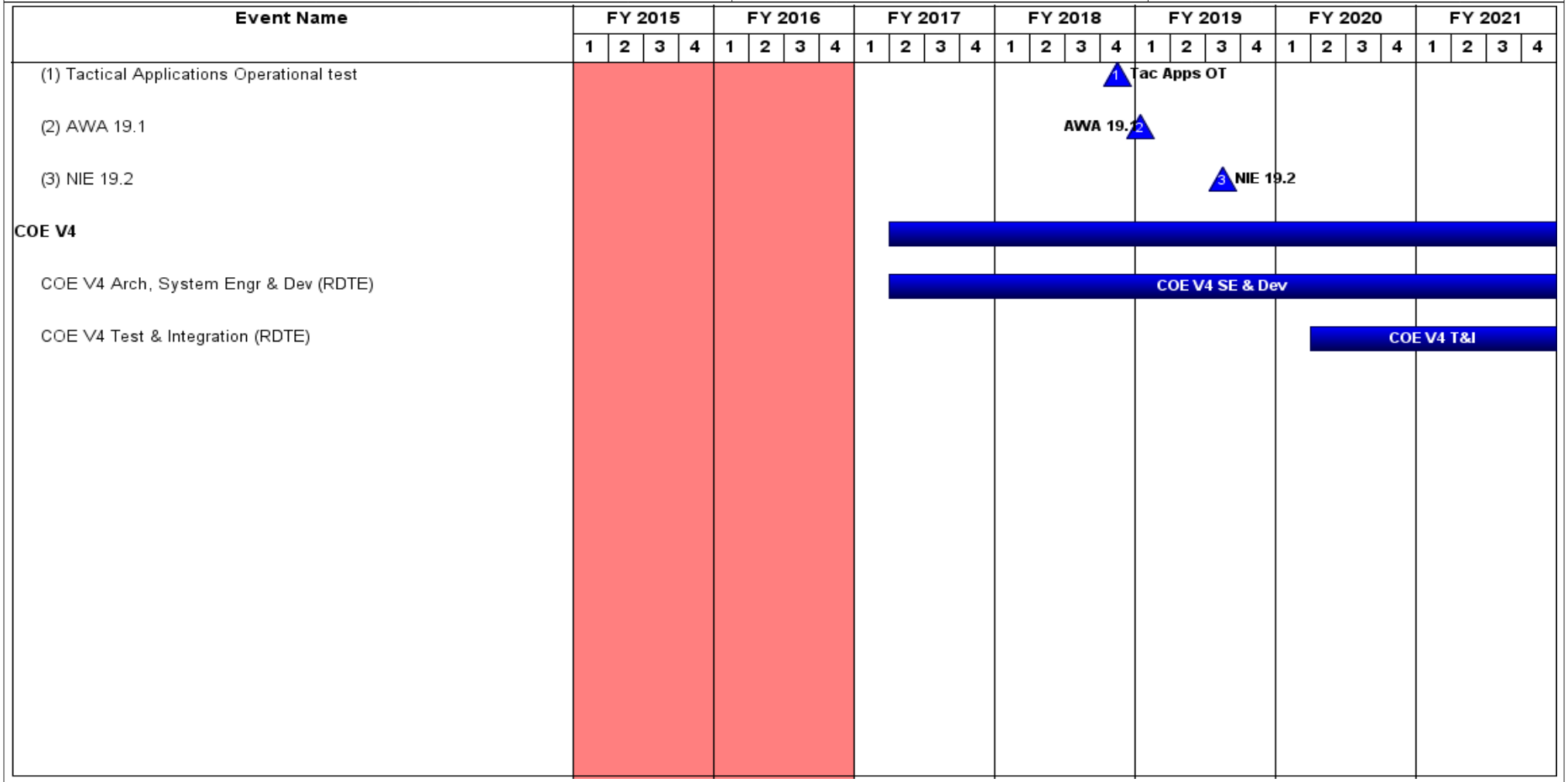

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
COE v2	1	2016	2	2017
COE v2 Arch, System Engr & Dev	1	2016	2	2016
COE v2 Test & Integration	1	2016	2	2017
AWA 16.1	1	2016	1	2016
Command Web Operational test	2	2016	2	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
NIE 17.2	3	2017	3	2017
COE V3	1	2016	3	2019
COE V3 Arch, System Engr & Dev	1	2016	3	2018
COE V3 Test & Integration	2	2017	3	2019
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
Tactical Applications Operational test	4	2018	4	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE V4	2	2017	4	2021
COE V4 Arch, System Engr & Dev (RDTE)	2	2017	4	2021
COE V4 Test & Integration (RDTE)	2	2020	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ5: *MOUNTED COMPUTING ENVIRONMENT (MCE)*	-	0.000	12.370	15.271	-	15.271	18.606	16.814	7.668	8.683	0.000	79.412
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Mounted Computing Environment (MCE) efforts began under Proj/PE 0604805A/593 – Joint Battle Command – Platform (JBC-P), in support of the Common Operating Environment (COE) directive from the AAE to the Program Executive Offices, dated 20 December 2011. Effective FY2016, the Army established MCE, Proj/PE 604818.EJ5 as a separate funding line to segregate the costs of MCE from JBC-P.

A. Mission Description and Budget Item Justification

The COE is a set of standardized computing technologies that facilitates secure and interoperable applications to be rapidly developed and executed across a variety of computing environments. The MCE, one of the six computing environments (CEs) formalized by the AAE under the COE directive, standardizes end-user environments while enabling streamlined deployment of new warfighting applications.

The JBC-P is the foundational element and core software platform of the MCE. Development of the MCE continues to leverage JBC-P hardware and software to consolidate and integrate multiple warfighting systems in the Platform (mounted) environment. This integrated MCE, with its open standards, enhanced interoperability, and simplified end-user interface will speed delivery of new Mission Command applications to the warfighter while improving the effectiveness and value of current systems. Requirements for the MCE are established in the AAE Directive Memo, the JBC-P Capability Development Document (CDD), and in the Mounted Computing Environment Information System Initial Capabilities Document (MCE IS ICD) (DRAFT).

FY 2017 funding provides the means to continue to manage and develop MCE, which has a larger horizontal scope than the foundational element (JBC-P), as it aids in achieving CE and COE goals.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Software Development	-	3.711	4.458
Description: Develop capabilities, product applications, platform interoperability, and system services for the Mounted Computing Environment (MCE), part of the Common Operating Environment (COE). Effort includes the development of unique software and integration capabilities. Develop multi-level security domains for network, users, and information.			
FY 2016 Plans: Follow on efforts, begun under the foundational element (JBC-P), to mature the MCE infrastructure based on emerging standards including continued development of automated tools to support compliance with COE standards, development of MCE/COE			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
services (e.g., Single Sign On), and bridging services to other CEs. Develop and integrate approved Cross Cutting Capabilities (CCC) (i.e.: Common Geospatial, Service Discovery over Networks, and Security Services). ***FY 2017 Plans:*** Begin the application of integrating mission command capabilities on the platform using the Hybrid Application Operating system. Mature the MCE infrastructure based on emerging standards including continued development of automated tools to support compliance with COE standards, development of MCE/COE services (e.g., Single Sign On), and bridging services to other CEs. Develop and integrate approved Cross Cutting Capabilities (CCC) (i.e.: Common Geospatial, Service Discovery over Networks, and Security Services).			
Title: Software/Systems Engineering ***Description:*** Perform Software/Systems Engineering in support of the development of MCE capabilities, applications, and services, to include, but not limited to, conducting engineering studies, software architecture development, system analyses, technical readiness assessments, technical interchange meetings/events, and development of related reports and other deliverables. ***FY 2016 Plans:*** Development of software architecture constructs to sustain and integrate existing capability and enable new capability development. System engineering expertise and efforts for the core software platform (infrastructure), JBC-P, specifically in support of COE baselines, focusing on hardware/software integration, engineering, and development of common services across platforms. Includes planning and engineering of future MCE capabilities using COTS, i.e.: Common Authentication; performance characterization on different HW/SW configurations using the Mounted Family of Computer Systems (MFoCS); and coordination of interoperability between external CEs. ***FY 2017 Plans:*** Development of software architecture constructs to sustain and integrate existing capability and enable new capability development. System engineering expertise and efforts for the core software platform (infrastructure), JBC-P, specifically in support of COE baselines, focusing on hardware/software integration, engineering, and development of common services across platforms. Includes planning and engineering of future MCE capabilities using COTS, i.e.: Common Authentication; performance characterization on different HW/SW configurations using the Mounted Family of Computer Systems (MFoCS); and coordination of interoperability between external CEs.	-	4.701	5.803
Title: Test, Evaluation and Integration	-	2.474	3.178

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Plan and conduct Integration Events (i.e.: Tests and Assessments) in support of new MCE capabilities, to include participation in Army Warfighter Assessments (AWA) and Network Integration Exercises (NIEs), User Juries, Risk Reduction Events, Vulnerability testing, and Army Interoperability Certification (AIC) testing. ***FY 2016 Plans:*** Test software capability of the core MCE infrastructure, as well as establish tools and processes for 3rd party application testing and accreditation. Test and Evaluation efforts include the planning and conduct of Test, Evaluation, and Integration events in support of MCE development. This includes participation in NIEs, User Juries, Assessments, Risk Reduction Events (RREs), Vulnerability testing, and AIC testing. ***FY 2017 Plans:*** Test software capability of the core MCE infrastructure, as well as establish tools and processes for 3rd party application testing and accreditation. Test and Evaluation efforts include the planning and conduct of Test, Evaluation, and Integration events in support of MCE development. This includes participation in NIEs, User Juries, Assessments, Risk Reduction Events (RREs), Vulnerability testing, and AIC testing.			
Title: Program Management ***Description:*** MCE program management comprises overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning meetings and IPTs. ***FY 2016 Plans:*** Provide technical, logistics and business oversight for MCE software development, system engineering and test activities. Provide governance for externally developed applications including administering the process of application development and testing, and acquisition with external government and non-government entities. Program management functions include funds execution, contract management, and logistical support to MCE RDT&E activities, as well as participation in the overarching COE management infrastructure. ***FY 2017 Plans:*** Provide technical, logistics and business oversight for MCE software development, system engineering and test activities. Provide governance for externally developed applications including administering the process of application development and testing, and acquisition with external government and non-government entities. Program management functions include funds execution, contract management, and logistical support to MCE RDT&E activities, as well as participation in the overarching COE management infrastructure.	-	1.484	1.832
Accomplishments/Planned Programs Subtotals	-	12.370	15.271

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

There is no other Mounted Computing Environment (MCE) related funding. However, there are efforts ongoing in other PM Mission Command Programs of Record (e.g.: Joint Battle Command - Platform (JBC-P), the foundational element of MCE that directly support the implementation of the MCE.

D. Acquisition Strategy

MCE is not a Program of Record (PoR), it is executed by PM Mission Command (PM MC) PdM JBC-P, which coordinates requirements and efforts with all stakeholders for associated capabilities that are part of this MCE.

The Department of the Army, Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA/ALT) directed the creation of the MCE as part of the overall Common Operating Environment (COE) Directive for Program Executive Offices (PEOs) in December 2011.

To accomplish the goals of the MCE, PEO C3T PM Mission Command architects, designs, and develops the hardware, software, network solutions and capabilities required to achieve compliance with the COE. Primary systems architecture engineering is conducted by in-house Government engineering staff with support from CERDEC matrix elements and MITRE Corp, a Fully Funded Research and Development Centers. Primary software development efforts are conducted by the CECOM Software Engineering Center (SEC) and the Aviation and Missiles RDEC (AMRDEC) Software Engineering Directorate (SED).

Test and Evaluation support is provided by in-house PM MC TMD staff, with support from contractor firms, for preparation and conduct of specific risk reduction events and test events. Developmental testing is being conducted by the software development teams with Government oversight and coordination.

Hardware to support system architecture and software development is comprised of standardized equipment and is procured using existing contract vehicles such as the Mounted Family of Computer Systems (MFoCS).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Mixed support: Gov't-Core and Matrix; SETA Contractor)	Various	PM Mission Command : Aberdeen Proving Ground, MD	0.000	-		1.484		1.832		-		1.832	0	3.316	0
		Subtotal	0.000	-		1.484		1.832		-		1.832	0.000	3.316	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	PM Mission Cmd, Multiple Matrix Orgs and SW Dev Contractors : Aberdeen Proving Ground, MD	0.000	-		3.711		4.458		-		4.458	0	8.169	0
Software/Systems Engineering	Various	PM Mission Cmd, Multiple Matrix Orgs and SW Dev Contractors : Aberdeen Proving Ground, MD	0.000	-		4.701		5.803		-		5.803	0	10.504	0
		Subtotal	0.000	-		8.412		10.261		-		10.261	0.000	18.673	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test, Evaluation and Integration	MIPR	Multiple Test Agencies; Multiple Locations : Aberdeen Proving Ground, MD	0.000	-		2.474		3.178		-		3.178	0	5.652	0
		Subtotal	0.000	-		2.474		3.178		-		3.178	0.000	5.652	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		12.370		15.271		-		15.271	0.000	27.641	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

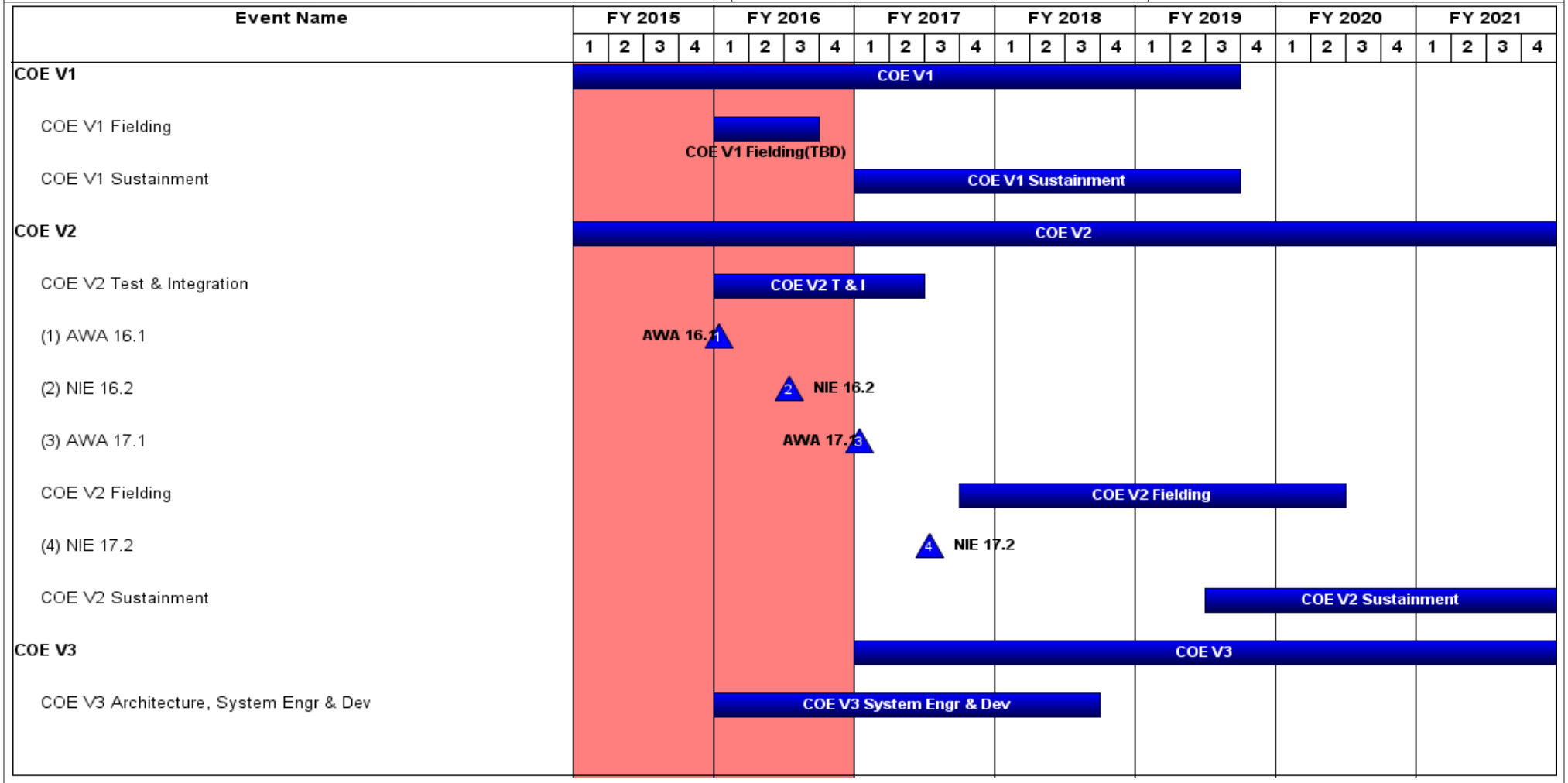

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

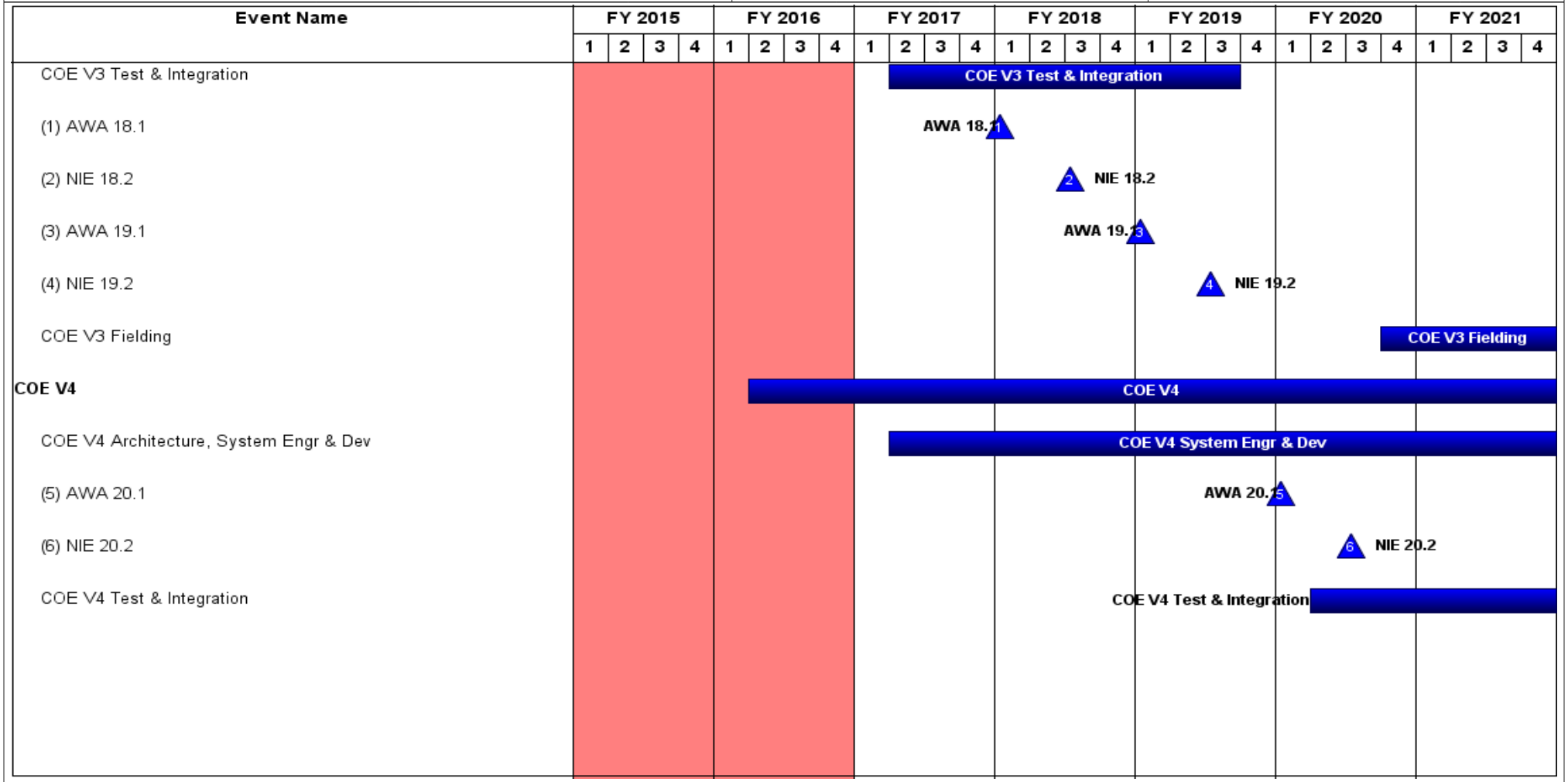

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
COE V1	1	2014	3	2019
COE V1 Fielding	1	2016	3	2016
COE V1 Sustainment	1	2017	3	2019
COE V2	1	2014	4	2022
COE V2 Test & Integration	1	2016	2	2017
AWA 16.1	1	2016	1	2016
NIE 16.2	3	2016	3	2016
AWA 17.1	1	2017	1	2017
COE V2 Fielding	4	2017	2	2020
NIE 17.2	3	2017	3	2017
COE V2 Sustainment	3	2019	4	2021
COE V3	1	2017	4	2021
COE V3 Architecture, System Engr & Dev	1	2016	3	2018
COE V3 Test & Integration	2	2017	3	2019
AWA 18.1	1	2018	1	2018
NIE 18.2	3	2018	3	2018
AWA 19.1	1	2019	1	2019
NIE 19.2	3	2019	3	2019
COE V3 Fielding	4	2020	2	2022
COE V4	2	2016	4	2026
COE V4 Architecture, System Engr & Dev	2	2017	2	2022
AWA 20.1	1	2020	3	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ5 / *MOUNTED COMPUTING ENVIRONMENT (MCE)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NIE 20.2	3	2020	4	2020
COE V4 Test & Integration	2	2020	2	2022

Note

MCE schedule represents the overarching COE Integrated Master Schedule. Each of the six computing environments follow the COE directed timelines.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ6: *TACTICAL ENHANCEMENT*	-	0.000	12.278	11.864	-	11.864	0.000	0.000	0.000	3.000	0.000	27.142
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Tactical Enhancement supports the evaluation and testing requirements for Modular Communications Node - Advanced Equipment (MCN-AE), Terrestrial Transmission (TRILOS) and Troposcatter (TROPO) capabilities procured and fielded under the Signal Modernization funding line, B00010. These systems will provide increased capabilities and improve intermodal and subscriber access communications links in the Warfighter Information Network-Tactical (WIN-T) network. It will also provide Top Secret transport convergence for Warfighter Information Network-Tactical units, augmenting legacy TROJAN Spirit terminals by providing a Top Secret Enclave through the WIN-T network.

FY17 funding will be used for Initial Operational Test & Evaluation (IOT&E) for TRILOS and System under Test (SUT) for MCN-AE during the scheduled Network Integration Evaluation (NIE) 17.2 event.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: System under Evaluation (SUE) for TS-SCI Security Enclave and TRILOS test support ***Description:*** Testing requirement ***FY 2016 Plans:*** BCT SUE for TS-SCI (NIE 16.2); TRLIOS testing support	-	12.278	-
Title: IOT&E for TRILOS systems and BCT SUT for TS-SCI ***Description:*** IOT&E for terrestrial communications TRILOS Systems ***FY 2017 Plans:*** IOT&E for terrestrial communications TRILOS Systems; BCT SUT for MCN-AE	-	-	11.864
Accomplishments/Planned Programs Subtotals	-	12.278	11.864

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B00010: *Signal Modernization*	27.757	49.898	58.250	-	58.250	102.254	128.068	149.088	135.734	0.000	651.049

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

These funds will be used to conduct System Evaluation and Formal Testing of the various Signal Mod capabilities, specifically the MCN-AE, TROPO and Terrestrial Transmission (TRILOS) systems. This is in order to facilitate integration into the WIN-T tactical ground networks. Testing and evaluation efforts will leverage the upcoming Network Integration Evaluation (NIE) events, specifically NIE 16. 2 (MCN-AE), NIE 17.2 (TRILOS) and NIE 18.2 (TROPO) events. These test events will meet all mandatory testing requirements with full ATEC oversight. This Acquisition Strategy will integrate proven Commercial-Off-The-Shelf (COTS) capabilities into existing WIN-T nodes to expand and enhance network capacity and user access. The TROPO and TRILOS capabilities will be acquired as ACAT III programs to replace legacy equipment in the field while utilizing DoDI 5000.02 standard acquisition approaches, starting with Milestone C Determination for TRILOS (2QFY17) and TROPO (4QFY18).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	ATEC : Aberdeen Proving Ground, MD	0.000	-		12.278		11.864		-		11.864	0	24.142	0
		Subtotal	0.000	-		12.278		11.864		-		11.864	0.000	24.142	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		12.278		11.864		-		11.864	0.000	24.142	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

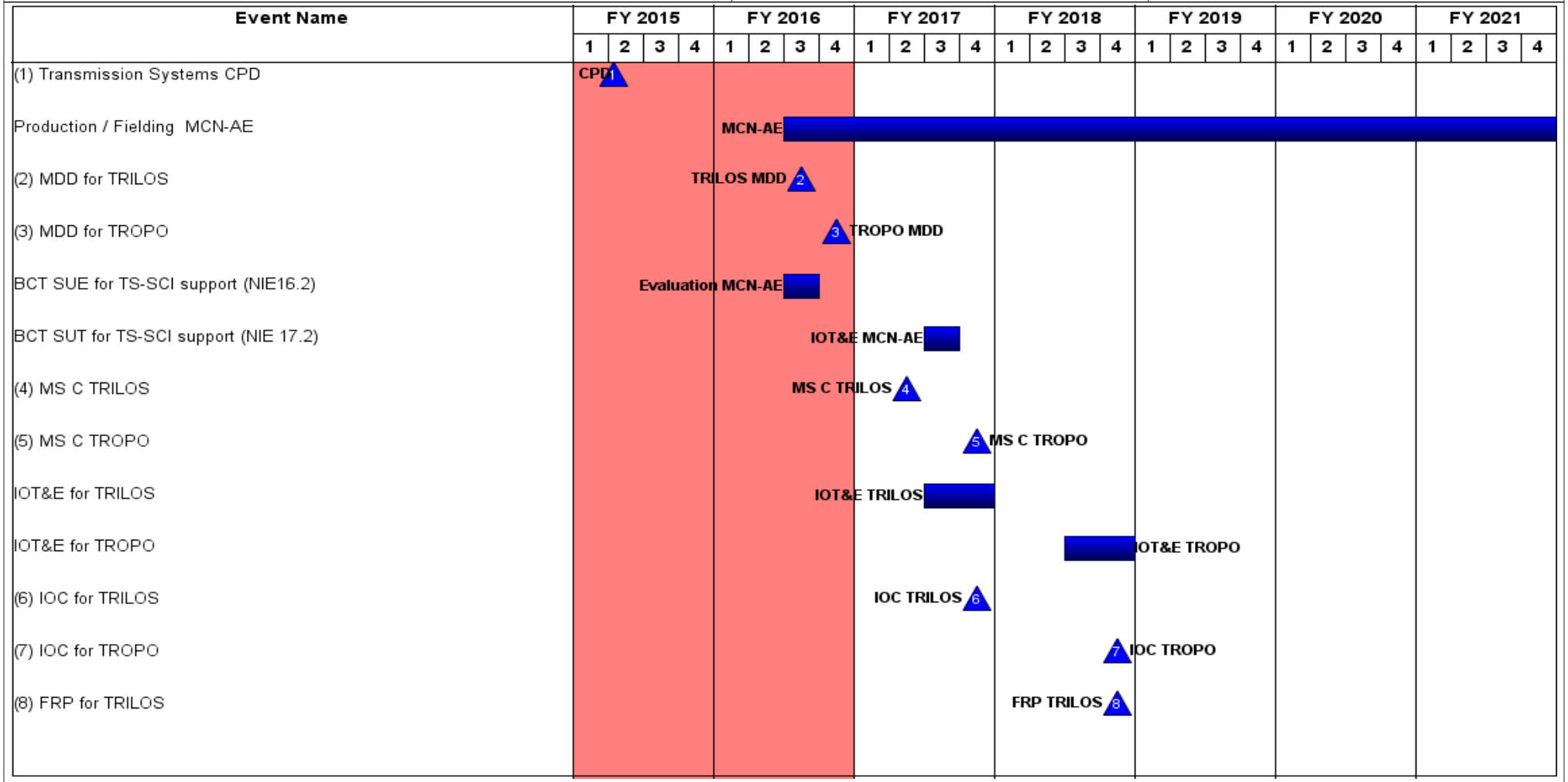

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

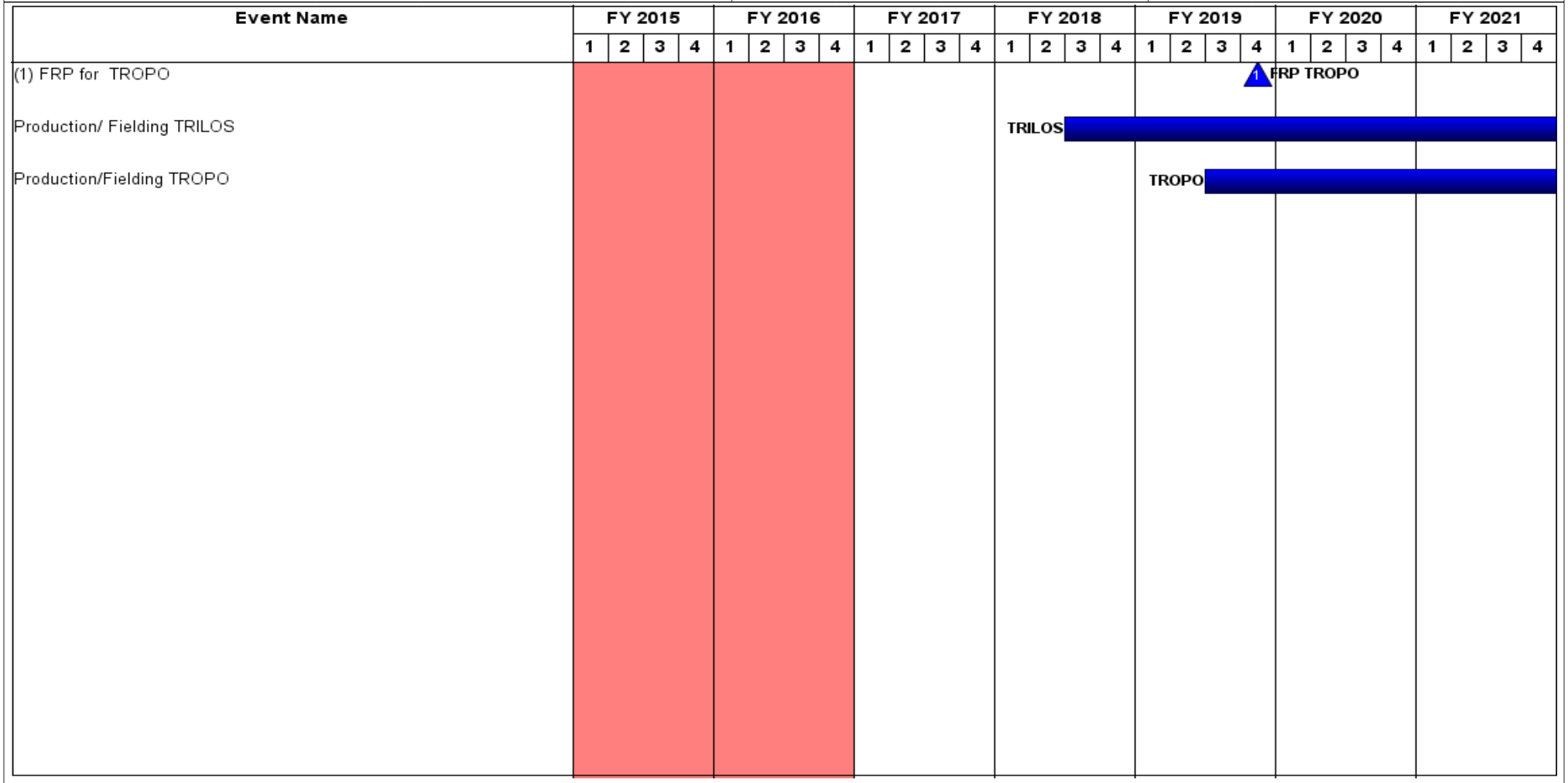

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Transmission Systems CPD	2	2015	2	2015
Production / Fielding MCN-AE	3	2016	4	2021
MDD for TRILOS	3	2016	3	2016
MDD for TROPO	4	2016	4	2016
BCT SUE for TS-SCI support (NIE16.2)	3	2016	3	2016
BCT SUT for TS-SCI support (NIE 17.2)	3	2017	3	2017
MS C TRILOS	2	2017	2	2017
MS C TROPO	4	2017	4	2017
IOT&E for TRILOS	3	2017	4	2017
IOT&E for TROPO	3	2018	4	2018
IOC for TRILOS	4	2017	4	2017
IOC for TROPO	4	2018	4	2018
FRP for TRILOS	4	2018	4	2018
FRP for TROPO	4	2019	4	2019
Production/ Fielding TRILOS	3	2018	4	2021
Production/Fielding TROPO	3	2019	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ7 / *TACTICAL DIGITAL MEDIA*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EJ7: *TACTICAL DIGITAL MEDIA*	-	0.000	1.300	2.467	-	2.467	0.000	0.000	0.000	0.000	0.000	3.767
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Tactical Digital Media (TDM) is comprised of photo, video and audio recording and editing equipment that will be assembled and issued as variant kits tailored to unit mission requirements. TDM kits address modernization gaps associated with all operational Combat Camera (COMCAM), Public Affairs (PA), and Military Information Support Operations (MISO) units. TDM provides essential imagery, multimedia products, and live interview capabilities that directly contribute to successful execution of a Commander's strategic engagement and communications strategy across the full range of military operations. TDM also provides specific imagery, video, and multimedia support to commanders through the National Command Authority (NCA) level to assist with operational planning, decision-making, combat adversary misinformation/disinformation, alter perceptions regarding coalition efforts, and provide accurate and timely information to national and international audiences. Proposed TDM equipment is entirely commercial off the shelf (COTS) which is currently in use by military organizations and commercial industry.

FY17 Base funding in the amount of $2.467 million will be used to procure and evaluate representative candidate COTS camera and video equipment for effectiveness, suitability, and reliability under combat conditions to support material solutions for procurement. FY17 efforts will also include planned full rate production decision, material release, and award of a production contract or task order to support future procurements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Program Management ***Description:*** Program Management comprises overall mangement of program execution, major events, reporting, funds execution, and contract management. Includes participation in program planning meetings and IPTs. ***FY 2016 Plans:*** Provide technical, logistics, and business oversight for TDM evaluation and testing activities. Program management functions include oversight, planning, funds execution and contract mangement support to TDM RDT&E activities. ***FY 2017 Plans:*** Provide technical, logistics, and business oversight for TDM evaluation and testing activities. Program management functions include oversight, planning, funds execution and contract mangement support to TDM RDT&E activities.	-	0.154	0.295
Title: Test and Evaluation ***Description:*** Test and evaluation of capabilities/equipment in order to assess emerging technologies before they are released for Army use; testing will be performed on hardware and/or software.	-	1.146	1.431

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ7 / *TACTICAL DIGITAL MEDIA*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2016 Plans: Photo, video, audio recording and editing equipment will be evaluated and tested in order to assess components of variant kits that support multiple mission requirements across multiple visual information (VI) disciplines. ***FY 2017 Plans:*** Photo, video, audio recording and editing equipment will be evaluated and tested in order to assess components of variant kits that support multiple mission requirements across multiple visual information (VI) disciplines.			
Title: Procurement of Test Articles ***Description:*** Photo, video, audio recording and editing equipment will be identified and procured in limited quantities for purposes of evaluation and testing in order to assess components of variant kits that support multiple mission requirements across multiple visual information (VI) disciplines. ***FY 2017 Plans:*** Test article procurement (limited quantities to support evaluation and testing).	-	-	0.741
Accomplishments/Planned Programs Subtotals	-	1.300	2.467

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B68501 Tactical Digital Media (OPA): *B68501 Tactical Digital Media (OPA)*	-	-	1.191	-	1.191	4.441	4.958	5.055	5.156	0.000	20.801

Remarks

D. Acquisition Strategy

In accordance with the approved Tactical Digital Media (TDM) Capabilities Production Document (CPD), the Army will be purchasing state-of-the-art COTS equipment to field media variant kits tailored to unit mission requirements. The equipment will purchased on competitively awarded contracts through Common Hardware Systems (CHS) or Global Tactical Advanced Communication Systems (GTACS) and will include warranties.

The program strategy for reaching full capability is to identify and field a modern standardized set of digital media capabilities that enables the Army user community to acquire and process digital media/visual information products able to be disseminated within a fully integrated Army tactical network operations environment which includes commercial networks and interfaces. The TDM program will replace legacy analog devices by providing state-of-the art COTS equipment supporting acquire

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ7 / *TACTICAL DIGITAL MEDIA*

and process operations that is centrally managed and resourced. New technologies and improvements of COTS equipment will be inserted as part of unit reset, New Equipment Fieldings or upgrades as necessary to provide users with state-of-art capabilities.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ7 / *TACTICAL DIGITAL MEDIA*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support(Gov't-Core)	Sub Allot	PM Mission Command : PM Mission Command	0.000	-		0.154		0.295		-		0.295	0	0.449	0
		Subtotal	0.000	-		0.154		0.295		-		0.295	0.000	0.449	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Articles	C/IDIQ	TBD (CHS, GTACS, or similar) : TBD	0.000	-		-		0.741		-		0.741	0	0.741	0
		Subtotal	0.000	-		-		0.741		-		0.741	0.000	0.741	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	IA	Multiple Govt Agencies : Locations TBD	0.000	-		1.146		1.431		-		1.431	0	2.577	0
		Subtotal	0.000	-		1.146		1.431		-		1.431	0.000	2.577	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		1.300		2.467		-		2.467	0.000	3.767	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ7 / *TACTICAL DIGITAL MEDIA*

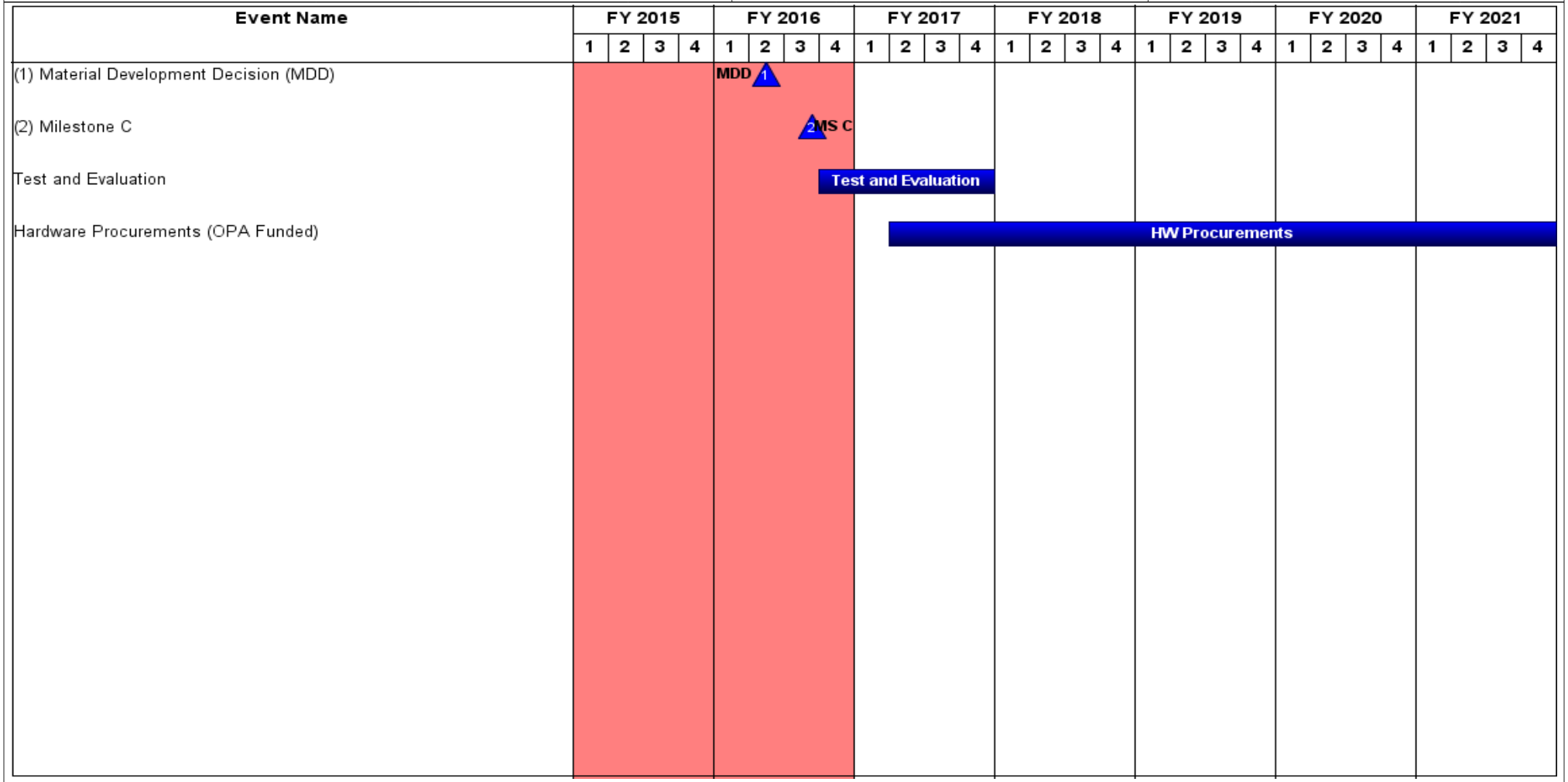

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ7 / *TACTICAL DIGITAL MEDIA*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Material Development Decision (MDD)	2	2016	2	2016
Milestone C	3	2016	3	2016
Test and Evaluation	4	2016	4	2017
Hardware Procurements (OPA Funded)	2	2017	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	0.000	0.000	39.264	-	39.264	66.588	68.751	69.129	70.755	0.000	314.487
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Tactical Network Operations (NetOps) and Management (TNOM) is the program which will develop and integrate the Tactical NetOps software capabilities in support of NetOps Convergence, Army Objectives and emerging Cyber Center of Excellence (CCOE) requirements. The end state program is designed to synchronize LandWarNet NetOps efforts in an integrated and interoperable framework, spanning all echelons of command and supporting the full range of military operations for Army, Joint, and Coalition Forces in order to ensure converged NetOps. The initial mission is convergence of DoD Information Network (DoDIN) functions into a single integrated set of Tactical NetOps and Management software. This integrated solution provides NetOps capability to manage Tactical Networks from the Soldier to the Theater network entry point and supports the implementation of the Integrated Tactical NetOps (ITNO) Increment 1 Capability Production Document (CPD). TNOM will deliver a standardized visualization capability (integrating both Upper and Lower Tactical Internet NetOps) in order to reduce complexity and inform the military decision making processes. TNOM will also provide enhanced capability to detect, respond, and restore from cyber incidents.

FY17 funding initiates the Engineering Design and Development of Network Operations software in support of the ITNO Increment 1 CPD, enhancing Network Visualization and Monitoring of the tactical network, standardizing data definition and storage to support Common Operational Picture, and simplify planning and configuration process for multiple network devices and radio. FY17 funding supports Test and Evaluation planning and updates to the Test and Evaluation Master Plan.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Product Development	-	-	30.895
Description: Network Operations Development ***FY 2017 Plans:*** FY17 initiates the Engineering Design and Development of Network Operations software in support of the Integrated Tactical Network Operations (ITNO) Increment 1 Capability Production Document which enhances Network Visualization and Monitoring of the tactical network, standardizes the data definitions and storage to support Common Operational Picture, and simplifies the planning and configuration process for multiple network devices and radios. FY17 will deliver high level design and specification documents that guide subsequent development and test planning.			
Title: Test and Evaluation	-	-	4.442
Description: Testing and Evaluating NetOps			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2017 Plans: FY17 funds T&E planning, updates to Test and Evaluation Master Plan, and integration and oversight by Government Test Organization with ongoing Contractor test events.			
Title: Management Services ***Description:*** Program Management Support ***FY 2017 Plans:*** Program Management Support and System Engineering for NetOps	-	-	3.927
Accomplishments/Planned Programs Subtotals	-	-	39.264

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Tactical Network Operations Management (TNOM) Increment 1, the first of multiple programs starting in FY17, is built to deliver the capabilities described in the Integrated Tactical Network Operations (ITNO) Increment 1 Capability Production Document (CPD). The ITNO CPD approval is expected in FY16. This effort picks up where individual programs have left off with Network Operations (NetOps) development, and integrates the various tools. The program also develops new tools in order to enhance the functionality while simplifying the user experience as a cohesive suite for the Signal and Cyber staff from Battalion through Corps. The program will utilize an Incrementally Deployed Software Intensive Program model (in accordance with Department of Defense Instruction 5000.02, Defense Acquisition Program Model 3) to rapidly develop and deliver capability to fielded units within existing network infrastructure. TNOM will enter at Milestone B, scheduled in early FY17. The program office conducted a Pre-Materiel Development Decision brief to Program Executive Office Command Control Communications Tactical in December 2015 and a Request for Information to Industry (RFI) in January 2016. The Program is on track for a Materiel Development Decision in 3rd Quarter 2016 to initiate the program with a Draft Request for Proposal release planned immediately thereafter. The Request for Proposal will be released upon CPD approval. TNOM will conduct a Milestone B decision in early FY17 immediately followed by a contract award. The program will develop and deliver capability in successive software builds, conduct developmental and operational tests, followed by Limited Fielding Decisions until full capability outlined in the ITNO CPD is delivered. The ITNO CPD outlines requirements for both new capability and integration of existing NetOps capabilities that will simplify Soldier interaction with the Network and provide enhanced ability to plan, configure, manage, monitor, control and secure/defend the tactical internet infrastructure. TNOM will integrate capabilities previously developed by WIN-T and the Joint Enterprise Network Manager (JENM), while aligning NetOps tools with the Common Operating Environment.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNOM Program Management Support	C/TBD	Various : Various	0.000	-		-		3.927		-		3.927	0	3.927	0
		Subtotal	0.000	-		-		3.927		-		3.927	0.000	3.927	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNOM Development	C/TBD	TBD : TBD	0.000	-		-		30.895		-		30.895	0	30.895	0
		Subtotal	0.000	-		-		30.895		-		30.895	0.000	30.895	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Planning	C/TBD	Various : Various	0.000	-		-		4.442		-		4.442	0	4.442	0
		Subtotal	0.000	-		-		4.442		-		4.442	0.000	4.442	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		39.264		-		39.264	0.000	39.264	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

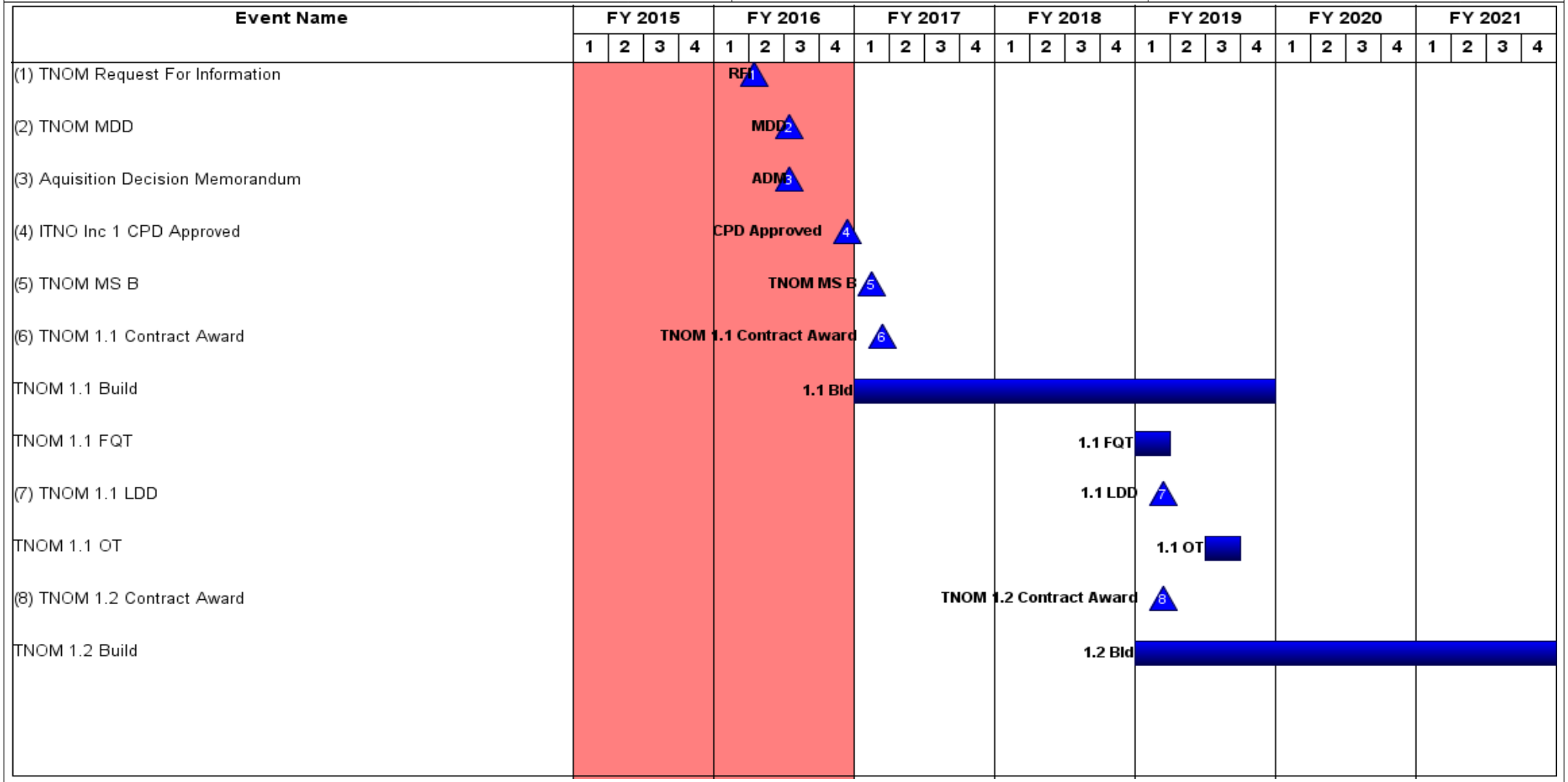

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TNOM Request For Information	2	2016	2	2016
TNOM MDD	3	2016	3	2016
Aquisition Decision Memorandum	3	2016	3	2016
ITNO Inc 1 CPD Approved	4	2016	4	2016
TNOM MS B	1	2017	1	2017
TNOM 1.1 Contract Award	1	2017	1	2017
TNOM 1.1 Build	1	2017	4	2019
TNOM 1.1 FQT	1	2019	1	2019
TNOM 1.1 LDD	1	2019	1	2019
TNOM 1.1 OT	3	2019	3	2019
TNOM 1.2 Contract Award	1	2019	1	2019
TNOM 1.2 Build	1	2019	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	0.000	0.000	10.563	-	10.563	10.822	10.898	11.068	11.352	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Nett Warrior (NW) Program (named in honor of Medal of Honor recipient Colonel Robert C. Nett), also known as the Ground Soldier System (GSS) Program, leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW system also provides the same integrated mission command capability to the tactical vehicle-mounted leaders so that when dismounted, the leader still maintains the common operating picture (COP) and has continuous situational awareness. This capability provides unparalleled situational awareness and enhanced communications to the dismounted leader allowing for faster, more accurate decisions and reduced fratricide in the tactical fight. Includes integration and interface of products on Soldiers.

The continued development and integration of the NW program also integrates applications from other programs aimed at considerably reducing the weight and bulk of the dismounted Soldier's load by using a single End User Device. The NW program harnesses Soldiers' experience in combat operations and employs combat veterans for Soldier feedback enhancing human factors design and fightability of the system. This project funds the following: 1) Incorporation of additional new hardware applications and capabilities into Nett Warrior, 2) Yearly developmental and operational tests of the NW with continually advancing commercial smart device technology inserted, 3) Software development for planned updates, 4) Integration of new End User Devices with the existing and re-competed Army Tactical Radios, including vehicle power integration, 5) Government led integration and system engineering and program management, and 6) Conduct NW Operational Test and Evaluation with Mechanized and Infantry units in FY16/17.

Note: FY16 and prior funding for Nett Warrior resided in 0604827A (Soldier Systems - Warrior Dem/Val) Project S75 (Ground Soldier Ensemble).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Test and Evaluation	-	-	2.119
Description: Test and Evaluation including twice a year Network Integration Evaluation (NIE) and Army Warfighting Assessment (AWA) to gain Soldier feedback.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Conduct NW test and 3rd party applications evaluation for technical verification at developmental test events and user verification through a planned Follow-on Test and Evaluation (FOT&E) operational assessment to support FY17 Full Rate Production (FRP) decision. Support NW as a baseline NIE and AWA system including: Brigade level support, equipping, training, and spares for NW; conduct yearly Army Interoperability Certification; environmental testing; and Information Assurance penetration prevention testing for new commercial smart devices, software and accessories.			
Title: Hardware and Software Integration and Evaluation for Capability Improvements ***Description:*** Hardware and Software Integration and Evaluation for Capability Improvements ***FY 2017 Plans:*** Evolve the NW system architecture and evaluate next End User Devices (EUD) and associated hardware components to stay aligned with commercial and Army evolving requirements. Provide NW software / hardware updates to support incorporation of 3rd party applications onto NW EUD platform, Army Interoperability Certification (AIC) and cyber security testing.	-	-	4.323
Title: Software Development & Integration ***Description:*** Funding is provided for the following efforts. ***FY 2017 Plans:*** Add additional Variable Message Format (VMF) messages to NW software. Evaluate next generation NW map engine and Operating System (OS) trade studies. Initiate assured Position, Navigation and Timing (PNT) software development efforts with NW. Update NW Software Development Kit (SDK) with new functionality. Establish a full/open competitive source for NW software development and integration support team. Start incorporating the Army's Common Operating Environment (COE) 3.0 Cross-Cutting Capabilities into NW software.	-	-	1.333
Title: Conduct SEPM Support to NW ***Description:*** Conduct Systems Engineering and Program Management Support to Nett Warrior ***FY 2017 Plans:*** Conduct government systems engineering and program management support for NW program including documentation preparation for a planned Full Rate Production decision in FY17. Manage the integration of the latest commercial smart devices, software applications and technology for test and evaluation. Collect input from Soldiers at semi-annual NIE events that improve NW size, weight, power, fightability, safety and effectiveness via surveys and electronic data monitoring from Developmental and Operational Testing (DT/OT) events. Facilitates NW compliance to M/HH CE standards.	-	-	2.788
Accomplishments/Planned Programs Subtotals	-	-	10.563

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• RDT&E, PE 0604827A S75,: *Ground Soldier Ensemble*	5.055	12.431	-	-	-	-	-	-	-	0	17.486
• OPA 3, R80501: *OPA 3, R80501, Ground Soldier System*	71.761	49.798	32.814	-	32.814	36.553	36.886	37.833	37.926	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Nett Warrior (NW) program provides unparalleled situational awareness and mission command to dismounted combat leaders through a secure commercial smart device, power source, cables and tactical radio. The NW is focused on Team Leader and higher echelons and provides an integrated secure information-centric Commercial-Off-The Shelf (COTS) mobile application-based computation platform with data collection, enhanced SA, mission planning, and navigational aid functions overlaid on geo-referenced maps and high resolution imagery throughout a brigade. The NW enables real-time ground tactical-level knowledge sharing and command and control (C2), directly impacting combat effectiveness and decision-making. The NW also improves lower echelon intelligence production and analysis capabilities which are central to efficient and effective counter-insurgency warfare. NW program completed LRIP/MS C in 2012 followed by two LRIP decisions in 2013-14 in preparation for IOT&E under DOT&E oversight in 4QFY14-1QFY15. This IOT&E event lead to an additional NW Low Rate Initial Production (LRIP) decision in 2015 and a Full Rate Production Decision is planned for mid FY17. From this decision NW will complete annual production and fielding events based on yearly development, integration and testing of emerging advanced smart devices to lower cost, weigh and power. To capitalize on commercial industry's investment in advanced smart device technology as well as innovation and changes within Army, NW requires annual RDT&E funding for integration and evaluation. Through this process and at low cost, the Army is able to integrate and evaluate for combat utility the hundreds of millions spent in product development by the major commercial device manufactures.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering & Program Management Support	Various	Various : Various	0.000	-		-		2.787		-		2.787	Continuing	Continuing	0
		Subtotal	0.000	-		-		2.787		-		2.787	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware/Software Integration & Evaluation	Various	Various : Various	0.000	-		-		4.323		-		4.323	Continuing	Continuing	0
		Subtotal	0.000	-		-		4.323		-		4.323	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Integration	Various	Various : Various	0.000	-		-		1.334		-		1.334	Continuing	Continuing	0
		Subtotal	0.000	-		-		1.334		-		1.334	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various Testing Organizations	Various	Various : Various	0.000	-		-		2.119		-		2.119	Continuing	Continuing	0
		Subtotal	0.000	-		-		2.119		-		2.119	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		10.563		-		10.563	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

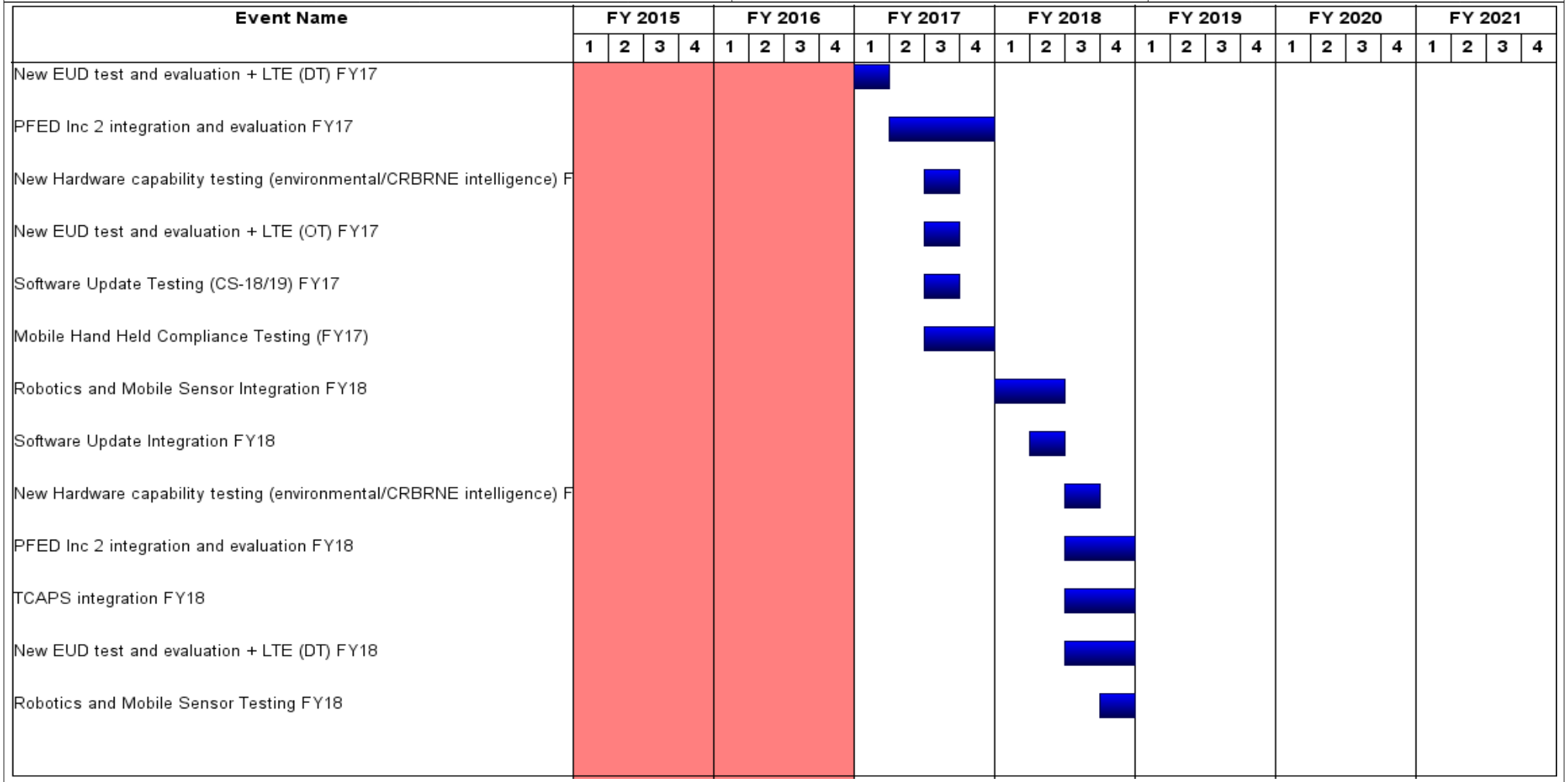

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

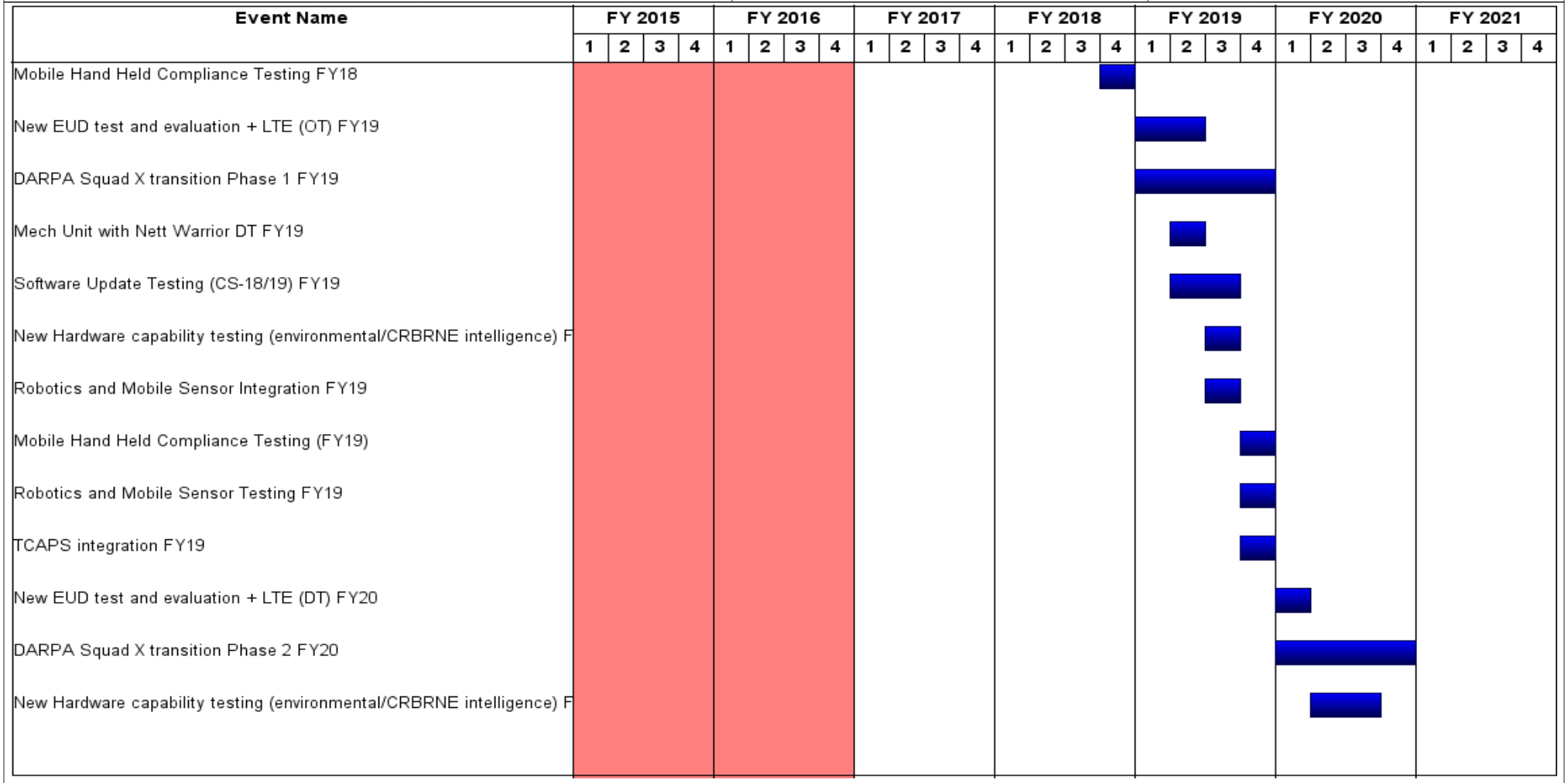

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

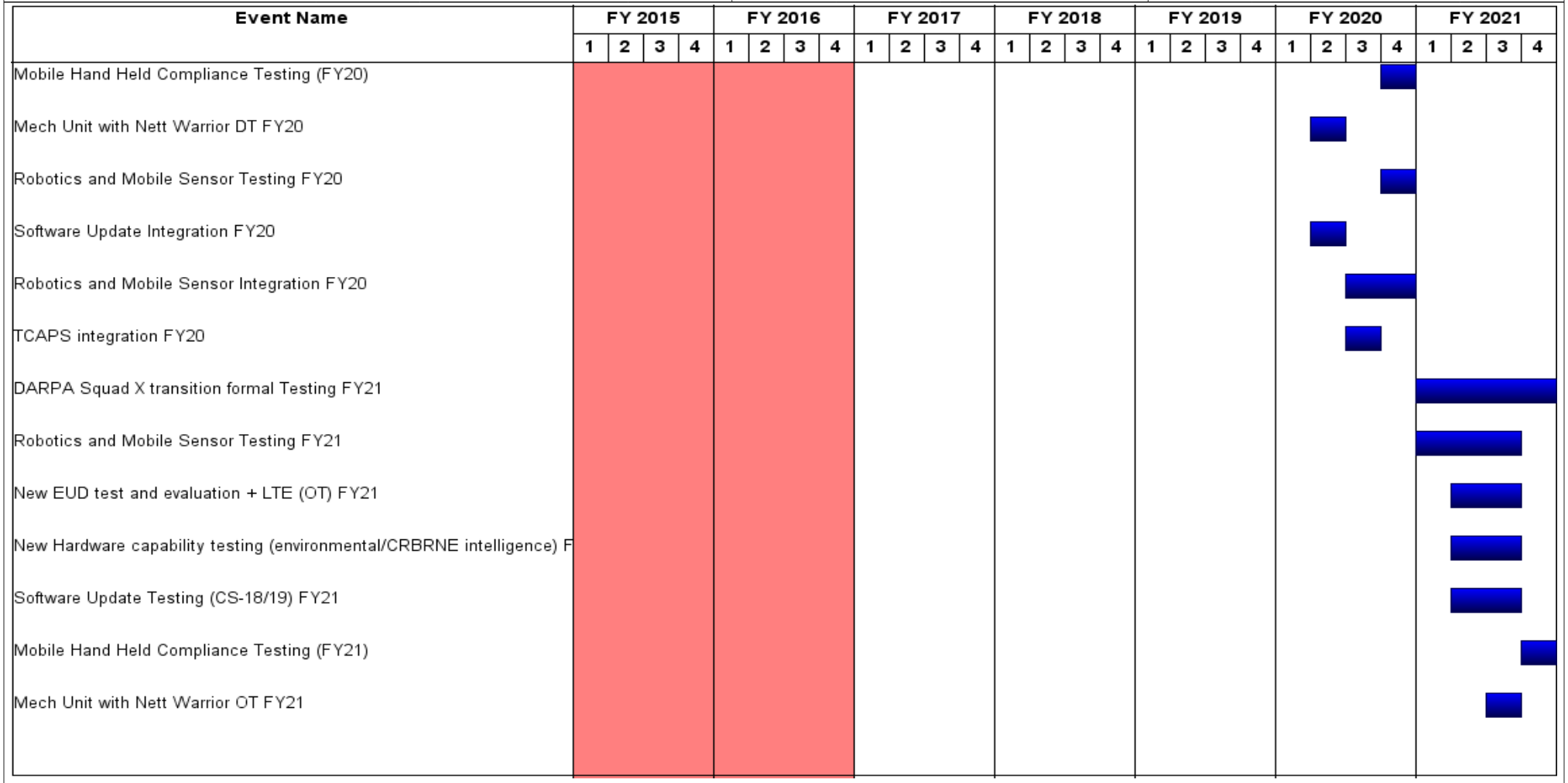

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

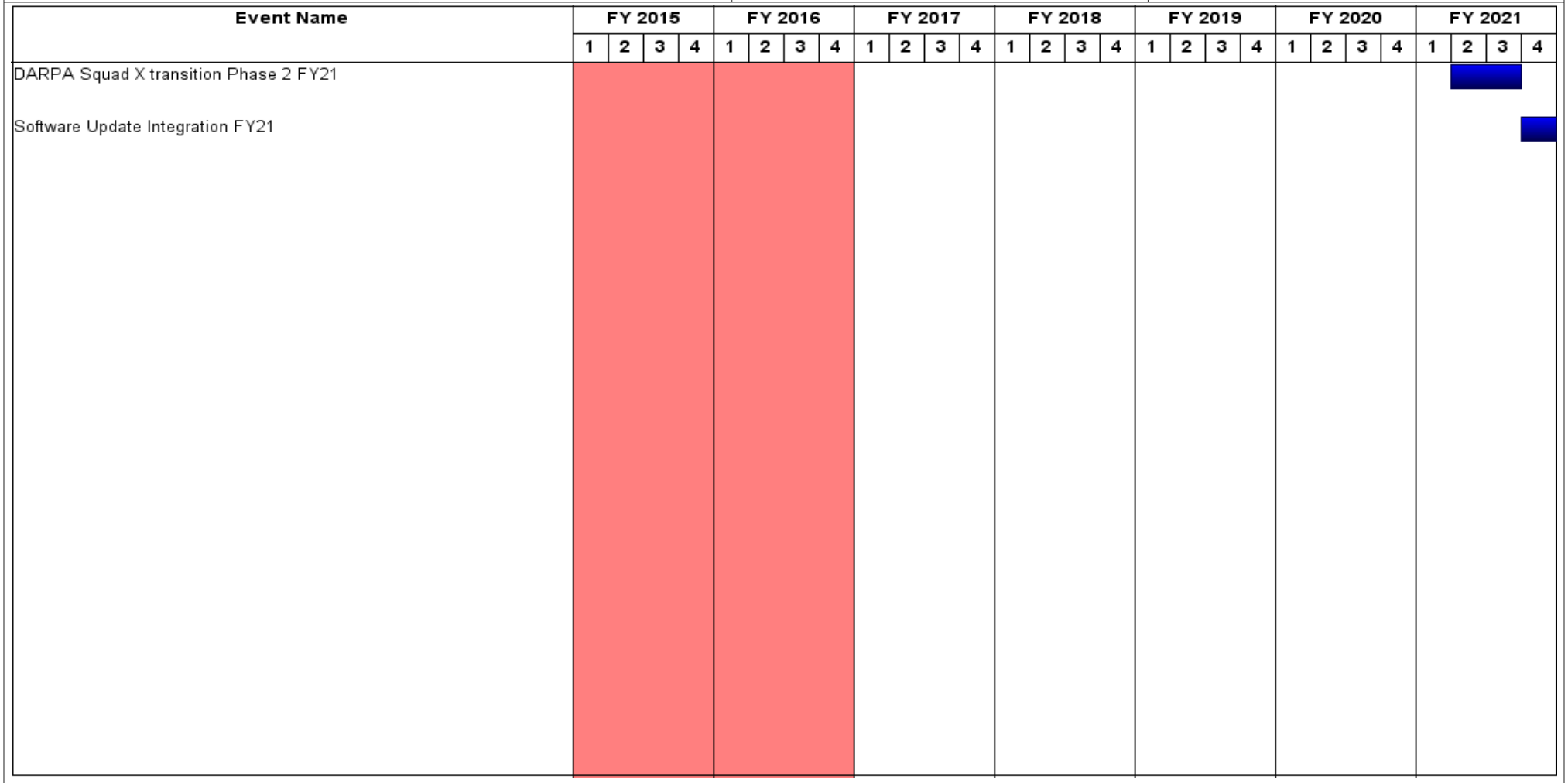

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
New EUD test and evaluation + LTE (DT) FY17	1	2017	1	2017
PFED Inc 2 integration and evaluation FY17	2	2017	4	2017
New Hardware capability testing (environmental/CRBRNE intelligence) FY17	3	2017	3	2017
New EUD test and evaluation + LTE (OT) FY17	3	2017	3	2017
Software Update Testing (CS-18/19) FY17	3	2017	3	2017
Mobile Hand Held Compliance Testing (FY17)	3	2017	4	2017
Robotics and Mobile Sensor Integration FY18	1	2018	2	2018
Software Update Integration FY18	2	2018	2	2018
New Hardware capability testing (environmental/CRBRNE intelligence) FY18	3	2018	3	2018
PFED Inc 2 integration and evaluation FY18	3	2018	4	2018
TCAPS integration FY18	3	2018	4	2018
New EUD test and evaluation + LTE (DT) FY18	3	2018	4	2018
Robotics and Mobile Sensor Testing FY18	4	2018	4	2018
Mobile Hand Held Compliance Testing FY18	4	2018	4	2018
New EUD test and evaluation + LTE (OT) FY19	1	2019	2	2019
DARPA Squad X transition Phase 1 FY19	1	2019	4	2019
Mech Unit with Nett Warrior DT FY19	2	2019	2	2019
Software Update Testing (CS-18/19) FY19	2	2019	3	2019
New Hardware capability testing (environmental/CRBRNE intelligence) FY19	3	2019	3	2019
Robotics and Mobile Sensor Integration FY19	3	2019	3	2019
Mobile Hand Held Compliance Testing (FY19)	4	2019	4	2019
Robotics and Mobile Sensor Testing FY19	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TCAPS integration FY19	4	2019	4	2019
New EUD test and evaluation + LTE (DT) FY20	1	2020	1	2020
DARPA Squad X transition Phase 2 FY20	1	2020	4	2020
New Hardware capability testing (environmental/CRBRNE intelligence) FY20	2	2020	3	2020
Mobile Hand Held Compliance Testing (FY20)	4	2020	4	2020
Mech Unit with Nett Warrior DT FY20	2	2020	2	2020
Robotics and Mobile Sensor Testing FY20	4	2020	4	2020
Software Update Integration FY20	2	2020	2	2020
Robotics and Mobile Sensor Integration FY20	3	2020	4	2020
TCAPS integration FY20	3	2020	3	2020
DARPA Squad X transition formal Testing FY21	1	2021	4	2021
Robotics and Mobile Sensor Testing FY21	1	2021	3	2021
New EUD test and evaluation + LTE (OT) FY21	2	2021	3	2021
New Hardware capability testing (environmental/CRBRNE intelligence) FY21	2	2021	3	2021
Software Update Testing (CS-18/19) FY21	2	2021	3	2021
Mobile Hand Held Compliance Testing (FY21)	4	2021	4	2021
Mech Unit with Nett Warrior OT FY21	3	2021	3	2021
DARPA Squad X transition Phase 2 FY21	2	2021	3	2021
Software Update Integration FY21	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EW3: *Unit Task Reorganization (UTR) Development*	-	0.000	0.000	24.498	-	24.498	0.000	0.000	0.000	0.000	0.000	24.498
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As the Army's tactical network continues to evolve from a loose federation of stove-piped systems, to a single, integrated, service-oriented, and standards-based environment, Unit Task Reorganization (UTR) capabilities must also evolve in the same manner. The ability to read, modify, and exchange data in a uniform and efficient manner is essential to achieving an integrated UTR solution. Efficient data sharing is a fundamental characteristic of modern-day integrated systems. Today, UTR is a complex, manually intensive, and time-consuming process. This is due, in part, to the large increase in network-enabled nodes within the tactical network. In addition, tools employed by the G/S-6 staff to conduct UTR are designed, developed, and fielded by various program and product managers each with discrete requirements, development schedules, and funding lines. This impedes the G/S-6 staffs' ability to conduct UTR in an integrated manner. To enhance UTR, we will address four fundamental challenges to improve UTR.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: UTR Common Data Model ***Description:*** Design and develop a UTR Common Data Model (CDM) capable of representing tactical C4ISR systems and their runtime and planned initialization data. The UTR CDM shall provide a common, structured, machine-readable, and self-describing format. It shall be an extensible and object-oriented data model facilitating data sharing among existing and future tactical C4ISR systems and UTR tools. ***FY 2017 Plans:*** Design and develop a UTR Common Data Model (CDM) capable of representing tactical C4ISR systems and their runtime and planned initialization data. The UTR CDM shall provide a common, structured, machine-readable, and self-describing format. It shall be an extensible and object-oriented data model facilitating data sharing among existing and future tactical C4ISR systems and UTR tools.	-	-	11.731
Title: UTR Data Repositories ***Description:*** UTR Data Repository is that of a distributed, authoritative database architecture capable of storing, synchronizing, and presenting existing, planned, and archived initialization data. The repositories shall be distributed and connected across each echelon of the tactical network. ***FY 2017 Plans:***	-	-	6.285

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
UTR Data Repository is that of a distributed, authoritative database architecture capable of storing, synchronizing, and presenting existing, planned, and archived initialization data. The repositories shall be distributed and connected across each echelon of the tactical network.			
Title: UTR Data Dissemination Service ***Description:*** Design and develop a UTR Data Dissemination Service (UTR DDS). It is a data distribution methodology for disseminating existing and planned initialization data through the tactical network (both within and between tactical echelons), as required. ***FY 2017 Plans:*** Design and develop a UTR Data Dissemination Service (UTR DDS). It is a data distribution methodology for disseminating existing and planned initialization data through the tactical network (both within and between tactical echelons), as required.	-	-	3.897
Title: UTR Automated Initialization Service ***Description:*** Design and develop the UTR Automated Initialization Service (AIS). It is envisioned as a mechanism that automates the manual workflows for initializing tactical C4ISR systems. In addition, it aims to decouple the planning and initialization functions, so that each function can be performed at the appropriate tactical echelon. ***FY 2017 Plans:*** Design and develop the UTR Automated Initialization Service (AIS). It is envisioned as a mechanism that automates the manual workflows for initializing tactical C4ISR systems. In addition, it aims to decouple the planning and initialization functions, so that each function can be performed at the appropriate tactical echelon.	-	-	1.115
Title: PMO ***Description:*** The PMO cost is oversight and management of the design and development efforts. These people will lead, manage, and provide direction to the development teams. ***FY 2017 Plans:*** The PMO cost is oversight and management of the design and development efforts. These people will lead, manage, and provide direction to the development teams.	-	-	1.470
Accomplishments/Planned Programs Subtotals	-	-	24.498

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

As the Army's tactical network continues to evolve from a loose federation of stove-piped systems, to a single, integrated, service-oriented, and standards-based environment, UTR capabilities must also evolve in the same manner. Today, UTR is a complex, manually intensive, and time-consuming process. This is due in part, to the large increase in network-enabled nodes within the tactical network. In addition, tools employed by the G/S-6 staff to conduct UTR are designed, developed, and fielded by various program and product managers each with discrete requirements, development schedules, and funding lines. This impedes the G/S-6 staffs' ability to conduct UTR in an integrated manner.To enhance UTR we will address five fundamental challenges to improve UTR. Efficient data sharing is a fundamental characteristic of modern-day integrated systems. The ability to read, modify, and exchange data in a uniform and efficient manner is essential to achieving an integrated UTR solution.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UTR Common Data Model	TBD	TBD : TBD	0.000	-		-		11.731		-		11.731	0	11.731	0
UTR Data Repositories	TBD	TBD : TBD	0.000	-		-		6.285		-		6.285	0	6.285	0
UTR Data Dissemination Service	TBD	TBD : TBD	0.000	-		-		3.897		-		3.897	0	3.897	0
UTR Automated Initialization Service	TBD	TBD : TBD	0.000	-		-		1.115		-		1.115	0	1.115	0
		Subtotal	0.000	-		-		23.028		-		23.028	0.000	23.028	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	TBD	TBD : TBD	0.000	-		-		1.470		-		1.470	0	1.470	0
		Subtotal	0.000	-		-		1.470		-		1.470	0.000	1.470	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		24.498		-		24.498	0.000	24.498	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

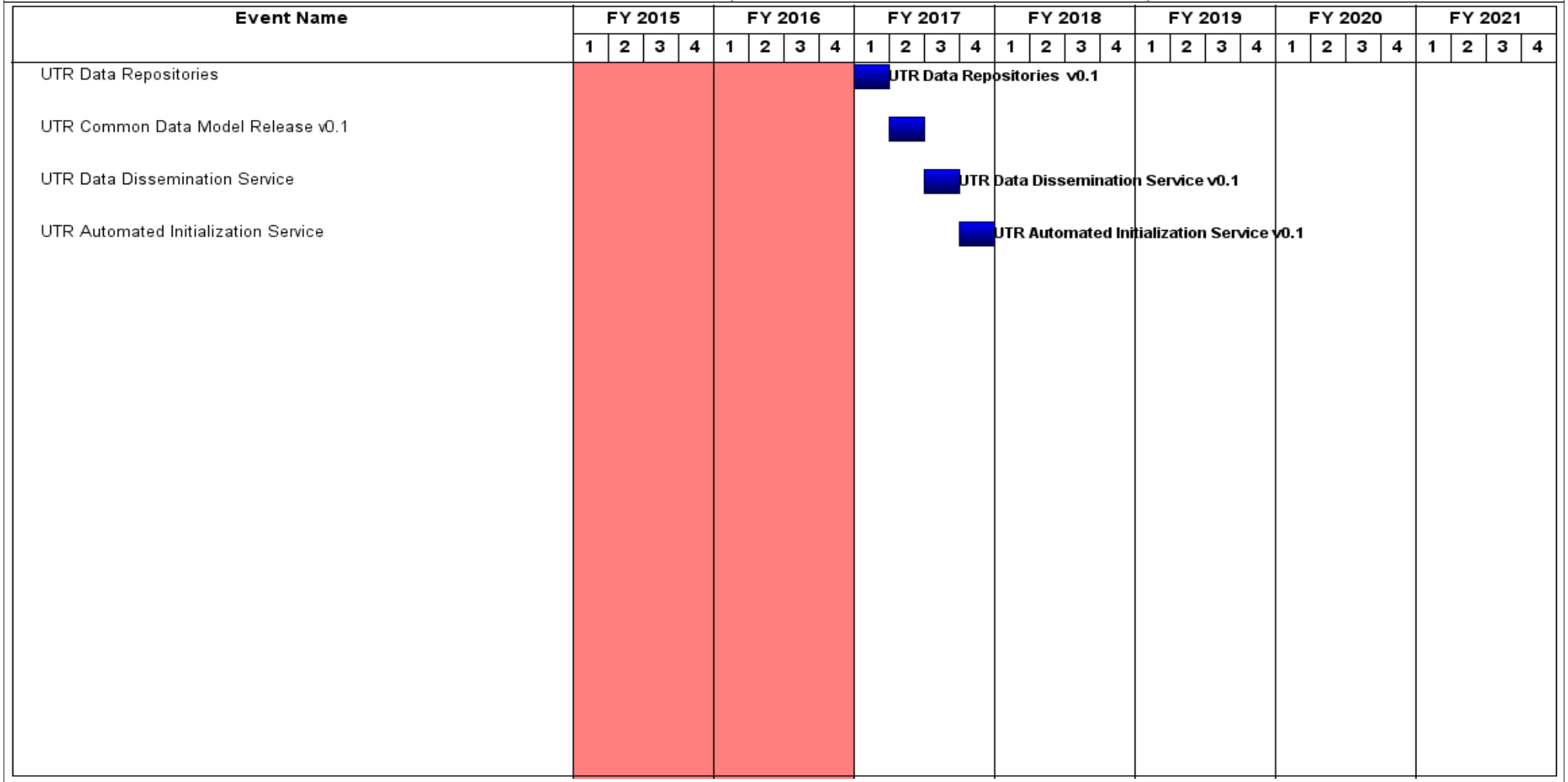

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UTR Data Repositories	1	2017	1	2017
UTR Common Data Model Release v0.1	2	2017	2	2017
UTR Data Dissemination Service	3	2017	3	2017
UTR Automated Initialization Service	4	2017	4	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.022	12.309	15.983	-	15.983	20.844	20.612	30.106	41.402	Continuing	Continuing
E10: *Sentinel*	-	5.022	12.309	15.983	-	15.983	20.844	20.612	30.106	41.402	Continuing	Continuing

A. Mission Description and Budget Item Justification

This system is a supporting program 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. The Sentinel system is used with the Forward Area Air Defense Command and Control (FAAD C2) element and is a key component to the Integrated Air and Missile Defense (IAMD) architecture via the IAMD Battle Command System (IBCS) to provide critical air surveillance of the forward areas.

The Sentinel currently consists of two primary variants: the AN/MPQ-64A1 system mounted on a High Mobility Multi-purpose Wheeled Vehicle (HMMWV), and an enhanced radar variant, the AN/MPQ-64A3 mounted on a 2.5 ton trailer and towed by an armored Family of Medium Tactical Vehicle (FMTV) platform. Sentinel also consists of Identification Friend or Foe (IFF), and Forward Area Air Defense (FAAD) Command, Control and Intelligence (C2I) interfaces. The radar is deployed in both an air defense role and a force protection role for Counter-Rocket, Artillery, and Mortar (C-RAM) missions. The sensor is an advanced three-dimensional battlefield X-Band air defense phased-array radar with an instrumented range of 75 kilometers. Sentinel is capable of operating day or night, in adverse weather conditions, in the battlefield environments of dust, smoke, aerosols and enemy countermeasures. It provides 360-degree azimuth coverage for acquisition tracking. Sentinel contributes to the digital battlefield by automatically detecting, classifying, identifying and reporting targets (cruise missiles, unmanned aerial systems, rotary wing and fixed wing aircraft). Sentinel acquires targets sufficiently forward of the battle area to allow weapons reaction time and engagement at optimum ranges. Sentinel's integrated IFF reduces the potential for fratricide of US and Coalition aircraft.

The Research and Development funding supports Sentinel modernization/upgrades, hardware/software issue resolution, resolution of obsolescence issues, engineering studies, and cost reduction initiatives. The funding for Fiscal Year (FY) 2015 through FY 2021 development activities addresses the following Sentinel system capability gaps and obsolescence issues identified by the User: 1) Target Detection gap; 2) Target Tracking gap; 3) Net Readiness gap; 4) Electronic Counter Measures (ECM) gap; 5) Unmanned Aerial Systems (UAS) Defense gap; and 5) Rockets, Artillery & Mortars (RAM) gap.

Battle Space Improvement addresses the Target Detection gap that currently exists with the Sentinel system. This development effort modifies the radar signal processor algorithms and will increase target acquisition and tracking range capability against the threat set within the instrumented range band. This effort also develops modifications to the radar hardware by utilizing an upgraded common signal processing card to the radar signal processor to provide a common hardware and software processing configuration across the Sentinel radar fleet.

Stop, Stare and Track addresses the Target Tracking Gap. This development effort provides direct Fire Control Radar (FCR) support in an integrated air and missile defense architecture. In addition this provides significantly improved Non-Cooperative Target Recognition (NCTR) timeline and performance against all targets to include UAS, Cruise Missiles, Rotary Wing and Fixed Wing aircraft. This upgrade also enables rapid classification of cued Rockets, Artillery and Mortars (RAM), UAS, Rotary

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604820A *I Radar Development*

Wing and Fixed Wing aircraft, as well as very accurate Point of Origin (POO) and Point of Impact (POI) of RAM targets and enables a robust kill assessment capability of engaged targets.

Cross Domain Solution (CDS) Network Interface addresses net readiness and system security concerns. This effort develops a CDS interface to isolate the Sentinel radar from connected networks of lower classification levels. Allows for ongoing cyber security initiatives to be reviewed and addressed as they arise. Ensures that Information Assurance/Cyber security is part of Sentinel operations, missions and functions. Makes certain that practices necessary to ensure the protection of information and personnel are instituted.

Electronic Attack/Electronic Protect (EA/EP) addresses the electronic countermeasures (ECM) gap. This effort conducts additional design and testing to verify initial EA/EP results and updates the database and associated software and hardware with more extensive EA/EP signatures to address evolving threats.

Signal Data Processor (SDP)/North Finding Module (NFM) addresses the Target Detection, Target Tracking, and Electronic Countermeasures (ECM) capability gaps and funds the mitigation of the SDP and NFM obsolescence issues. SDP cards are estimated to go obsolete every four to six years.

Medium Bandwidth Waveform upgrade will address latent tracking issues that currently exist with Sentinel in certain applications. This development effort modifies firmware as well as software in the Sentinel radar. This effort will provide better target resolution and more accurate tracking in the slant range coordinate. This improved target resolution and tracking accuracy will provide improved retention of target identification and more robust tracking that addresses the latent tracking issues.

Mode S upgrade to existing Sentinel Identification Friend or Foe (IFF) will address Sentinel's objective requirement to interrogate IFF mode S which is currently not being met. Mode S transmissions are a key component of the Automatic Dependent Surveillance-Broadcast (ADS-B) surveillance technology being used by the Federal Aviation Administration for tracking aircraft as part of the Next Generation Air Transportation System (NextGen). In the United States, all aircraft required to have transponders (most aircraft) must transition to mode S capable units by 2020. Without the Mode S upgrade, Sentinel will have to rely on these aircraft transponders responding to the legacy mode 3/A interrogations. The data available in the mode S response will be valuable in identifying the aircraft and correlating Sentinel tracks with civil aviation tracks/data and other track data sources.

The Active Electronically Scanned Array (AESA) is the next generation of radar technology to replace the current phase and frequency scanned array used by Sentinel today. The AESA Antenna will provide increased capability including extended range for ground-based surveillance and situational awareness, faster and more accurate Non-Cooperative Target Recognition (NCTR) for clearing fires and preventing fratricide, improved Fire Control (FC) quality track accuracy, and management of larger track loads. The AESA will also provide improved operation in severe/urban clutter. The system will detect and track small targets, such as Unmanned Aerial Systems (UAS) and Cruise Missiles, in clutter and will detect and track slow targets, such as UAS and Rotary Wing (RW) aircraft, at low altitudes in clutter. The system will detect, track, and classify Rocket, Artillery, and Mortar (RAM) threats and will support Integrated Air and Missile Defense Battle Command System (IBCS) requirements and can contribute sensor support for mitigating current and future Indirect Fire Protection Capability Increment 2 mission requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	5.221	12.309	11.465	-	11.465
Current President's Budget	5.022	12.309	15.983	-	15.983
Total Adjustments	-0.199	0.000	4.518	-	4.518
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.199	-			
• Adjustments to Budget Years	-	-	4.518	-	4.518

Change Summary Explanation

Funding adjustment from within Sentinel Program to allow for analysis and development of the follow on sensor technology to commence in FY17.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
E10: *Sentinel*	-	5.022	12.309	15.983	-	15.983	20.844	20.612	30.106	41.402	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This system is a supporting program of the overall Air and Missile Defense (AMD) architecture and will provide for an incrementally fielded Integrated AMD Fire Control System/capability for the composite Army Air and Missile Defense Brigades. The Sentinel system is used with the Forward Area Air Defense Command and Control (FAAD C2) element and is a key component to the Integrated Air and Missile Defense (IAMD) architecture via the Integrated Air and Missile Defense Battle Command System (IBCS) to provide critical air surveillance of the forward areas.

The Sentinel currently consists of two primary variants: the AN/MPQ-64A1 system mounted on a High Mobility Multi-purpose Wheeled Vehicle (HMMWV), and an enhanced radar variant, the AN/MPQ-64A3 mounted on a 2.5 ton trailer and towed by an armored Family of Medium Tactical Vehicle (FMTV) platform. Sentinel also consists of Identification Friend or Foe (IFF), and Forward Area Air Defense (FAAD) Command, Control and Intelligence (C2I) interfaces. The radar is deployed in both an air defense role and a force protection role for Counter-Rocket, Artillery, and Mortar (C-RAM) missions. The sensor is an advanced three-dimensional battlefield X-Band air defense phased-array radar with an instrumented range of 75 kilometers. Sentinel is capable of operating day or night, in adverse weather conditions, in the battlefield environments of dust, smoke, aerosols and enemy countermeasures. It provides 360-degree azimuth coverage for acquisition tracking. Sentinel contributes to the digital battlefield by automatically detecting, classifying, identifying and reporting targets (cruise missiles, unmanned aerial systems, rotary wing and fixed wing aircraft). Sentinel acquires targets sufficiently forward of the battle area to allow weapons reaction time and engagement at optimum ranges. Sentinel's integrated IFF reduces the potential for fratricide of US and Coalition aircraft.

The Research and Development funding supports Sentinel modernization/upgrades, hardware/software issue resolution, resolution of obsolescence issues, engineering studies, and cost reduction initiatives. The funding for Fiscal Year (FY) 2015 through FY 2021 development activities addresses the following Sentinel system capability gaps and obsolescence issues identified by the User: 1) Target Detection gap; 2) Target Tracking gap; 3) Net Readiness gap; 4) Electronic Counter Measures (ECM) gap; 5) Unmanned Aerial Systems (UAS) Defense gap; and 5) Rockets, Artillery & Mortars (RAM) gap.

Battle Space Improvement addresses the Target Detection gap that currently exists with the Sentinel system. This development effort modifies the radar signal processor algorithms and will increase target acquisition and tracking range capability against the threat set within the instrumented range band. This effort also develops modifications to the radar hardware by utilizing an upgraded common signal processing card to the radar signal processor to provide a common hardware and software processing configuration across the Sentinel radar fleet.

Stop, Stare and Track addresses the Target Tracking Gap. This development effort provides direct Fire Control Radar (FCR) support in an integrated air and missile defense architecture. In addition this provides significantly improved Non-Cooperative Target Recognition (NCTR) timeline and performance against all targets to include UAS, Cruise Missiles, Rotary Wing and Fixed Wing aircraft. This upgrade also enables rapid classification of cued Rockets, Artillery and Mortars (RAM), UAS, Rotary Wing and Fixed Wing aircraft, as well as very accurate Point of Origin (POO) and Point of Impact (POI) of RAM targets and enables a robust kill assessment capability of engaged targets.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

Cross Domain Solution (CDS) Network Interface addresses net readiness and system security concerns. This effort develops a CDS interface to isolate the Sentinel radar from connected networks of lower classification levels. Allows for ongoing cyber security initiatives to be reviewed and addressed as they arise. Ensures that Information Assurance/Cyber security is part of Sentinel operations, missions and functions. Makes certain that practices necessary to ensure the protection of information and personnel are instituted.

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Medium Bandwidth Waveform upgrade will address latent tracking issues that currently exist with Sentinel in certain applications. This development effort modifies firmware as well as software in the Sentinel radar. This effort will provide better target resolution and more accurate tracking in the slant range coordinate. This improved target resolution and tracking accuracy will provide improved retention of target identification and more robust tracking that addresses the latent tracking issues.

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The Active Electronically Scanned Array (AESA) is the next generation of radar technology to replace the current phase and frequency scanned array used by Sentinel today. The AESA Antenna will provide increased capability including extended range for ground-based surveillance and situational awareness, faster and more accurate Non-Cooperative Target Recognition (NCTR) for clearing fires and preventing fratricide, improved Fire Control (FC) quality track accuracy, and management of larger track loads. The AESA will also provide improved operation in severe/urban clutter. The system will detect and track small targets, such as Unmanned Aerial Systems (UAS) and Cruise Missiles, in clutter and will detect and track slow targets, such as UAS and Rotary Wing (RW) aircraft, at low altitudes in clutter. The system will detect, track, and classify Rocket, Artillery, and Mortar (RAM) threats and will support Integrated Air and Missile Defense Battle Command System (IBCS) requirements and can contribute sensor support for mitigating current and future Indirect Fire Protection Capability Increment 2 mission requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Product Development	3.449	8.733	13.047	-	13.047
Description: Funding is provided for the following efforts:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
FY 2015 Accomplishments: Integrate firmware, software and hardware. Build prototype subsystems/components for testing. Complete software code coding and modification of the system search and track logic, clutter mapping, and waveforms. Characterize performance, design & replace firmware, software and hardware. Perform technical assessments, concept studies, cost reduction, risk reduction, threat analysis, and required documentation. ***FY 2016 Plans:*** Integrate firmware, software and hardware. Build prototype subsystems/components for testing. Complete software code coding and modification of the system search and track logic, clutter mapping, and waveforms. Characterize performance, design & replace firmware, software and hardware. Perform technical assessments, concept studies, cost reduction, risk reduction, threat analysis, and required documentation for modifications to address evolving threats. ***FY 2017 Base Plans:*** Integrate firmware, software and hardware. Build prototype subsystems/components for testing. Complete software code coding and modification of the system search and track logic, clutter mapping, and waveforms. Characterize performance, design & replace firmware, software and hardware. Perform technical assessments, concept studies, cost reduction, risk reduction, threat analysis, and required documentation. Initiate analysis of technology, program documentation and development of contract requirement packages in support of follow on sensor technology.					
Title: Test & Evaluation ***Description:*** Funding is provided for the following efforts: ***FY 2015 Accomplishments:*** Conduct software qualification test and hardware verification testing, field testing against representative targets. Prepare logistics products and required documentation for materiel release of software and hardware upgrades. ***FY 2016 Plans:*** Conduct software qualification test and hardware verification testing, field testing against representative targets. Prepare logistics products and required documentation for materiel release of software and hardware upgrades. ***FY 2017 Base Plans:*** Conduct software qualification test and hardware verification testing, field testing against representative targets. Prepare logistics products and required documentation for materiel release of software and hardware upgrades.	1.027	2.491	1.576	-	1.576
Title: Management Support	0.546	1.085	1.360	-	1.360

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: This funds Government and technical support. ***FY 2015 Accomplishments:*** Provides government management, technical and administrative support in FY 2015. ***FY 2016 Plans:*** Provides government management, technical and administrative support in FY 2016. ***FY 2017 Base Plans:*** Provides government management, technical and administrative support in FY 2017.					
Accomplishments/Planned Programs Subtotals	5.022	12.309	15.983	-	15.983

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE 0605456A: *Proj PA3, PAC-3/MSE MISSILE*	33.709	2.272	-	-	-	-	-	-	-	0	35.981
• SSN C53101: *MSE Missile*	532.605	514.946	423.201	-	423.201	459.040	497.009	529.839	520.513	Continuing	Continuing
• PE 0205456: *Proj EF9, System Integration and Test*	78.720	64.159	69.417	-	69.417	79.562	80.962	96.042	113.641	Continuing	Continuing
• PE 0604114A: *Proj EX2; Lower Tier Air Missile Defense (LTAMD) Capability*	-	-	35.132	-	35.132	93.208	78.820	87.128	84.826	Continuing	Continuing
• SSN C50016: *Lower Tier Air and Missile Defense (AMD)*	110.300	115.075	126.470	-	126.470	112.888	122.768	150.444	120.542	Continuing	Continuing
• PE 0604319A: *Proj DU3, IFPC2 (FY12 PE0603305A IFPC II - Intercept)*	92.475	155.361	-	-	-	40.003	80.004	120.004	120.006	Continuing	Continuing
• PE 0605052A: *Proj EY7; IFPC Increment 2 - Block 1*	-	-	83.995	-	83.995	63.370	43.204	109.323	133.326	Continuing	Continuing
• SSN C62001: *INDIRECT FIRE PROTECTION CAPABILITY, INC 2-1 Block 1 System*	-	-	19.920	-	19.920	47.289	138.547	174.760	287.325	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SSN C62002: *INDIRECT FIRE PROTECTION CAPABILITY, INC 2-1 Block 1 Missile*	-	-	-	-	-	73.552	123.106	186.840	146.300	Continuing	Continuing
• PE 0605457A: *Proj S40, Army Integrated Air and Missile Defense (AIAMD)*	147.250	222.075	252.811	-	252.811	169.070	152.942	32.914	34.447	Continuing	Continuing
• SSN BZ5075: *IAMD Battle Command System*	-	20.917	204.969	-	204.969	287.220	372.916	440.567	439.780	Continuing	Continuing
• PE 0604741A: *Proj 126, 146, 149; Air Defense C2I Eng Dev*	15.294	34.569	36.256	-	36.256	20.141	19.658	17.738	11.651	Continuing	Continuing
• SSN AD5070: *Air & MSL Defense Planning & Control Sys*	27.374	28.176	54.376	69.958	124.334	17.005	17.960	6.366	6.951	Continuing	Continuing
• SSN WK5057: *Sentinel Mods*	44.305	43.285	40.171	-	40.171	28.379	32.720	42.294	48.626	Continuing	Continuing
• PE 0202429A: *Proj EP8, JLENS COCOM EXERCISE*	43.248	10.565	45.482	-	45.482	6.746	-	-	-	0	106.041

Remarks

This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.

D. Acquisition Strategy

Sentinel was procured from Thales Raytheon Systems (TRS) as a non-developmental item. TRS owns the Technical Data Package (TDP) for the Sentinel A3 and its predecessors and therefore no other contractor has the technical ability to modify the Sentinel radar or Sentinel software. The modifications planned for the Sentinel that fall into this category are: Battle Space Improvement, Stop Stare and Track, Cross Domain Solution, Electronic Attack/Electronic Protect, Signal Data Processor/North Finding Module, Medium Bandwidth, and Mode S. For the Active Electronically Scanned Array, the product office will issue a new contract to develop the new antenna to be integrated and tested with the TRS maintained Sentinel back end.

Battle Space Improvement (Sentinel A3): The Sentinel Product Office will contract with Thales Raytheon Systems (TRS) to update and modify the radar signal processor algorithms. The updated software will be tested, documented and released for installation.

Stop, Stare and Track (Sentinel A3): The Sentinel Product Office will contract with Thales Raytheon Systems (TRS) to develop new and/or modify existing Sentinel software. The updated software will be tested, documented and released for installation.

Cross Domain Solution Interface (Sentinel A3): The Sentinel Product Office will contract with Thales Raytheon Systems (TRS) to develop an interface solution to isolate Sentinel transmission from connected networks of lower classifications.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

Electronic Attack/Electronic Protect (EA/EP) (Sentinel A3): The Sentinel Product Office will contract with Thales Raytheon Systems (TRS) to verify the initial EA/EP Database and update the database, software and hardware with more extensive EA/EP signatures to address evolving threats. The updated database will be tested, documented and released for installation.

Signal Data Processor (SDP)/North Finding Module (NFM) Obsolescence (Sentinel A3): The Sentinel Product Office will contract with Thales Raytheon Systems (TRS) to upgrade and mitigate the Signal Data Processor and North Finding Module issues. The updated SDP and NFM hardware will be tested, documented and released for installation in the field.

Medium Bandwidth Waveform (Sentinel A3): The Sentinel Product Office will contract with Thales Raytheon Systems (TRS) to address latent tracking issues that currently exist with Sentinel in certain applications. The effort modifies firmware as well as software in the Sentinel radar. The updated medium bandwidth waveform software and firmware will be tested, documented and released for installation in the field.

Mode S (Sentinel A3): The Sentinel Product Office will contract with Thales Raytheon Systems (TRS) to address Sentinel's objective requirement to interrogate Identification Friend or Foe (IFF) mode S on board commercial aircraft. The updated software will be tested, documented and released for installation in the field.

Active Electronically Scanned Array (AESA): The Sentinel Product Office will award a new contract to develop the new AESA antenna to be integrated with the TRS maintained Sentinel back end. The CMDS Product Office will support requirement documentation and conduct design analysis to include analysis of technology, decision review preparation, and contract package development for acquisition of the AESA antenna to upgrade the current Sentinel A3. The software and hardware will be tested, documented and released for installation in the field.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Improved Sentinel Development	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	11.398	-		-		-		-		-	0	11.398	0
System of Systems Mod Development & Integration	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	1.169	-		-		-		-		-	0	1.169	0
Battle Space Improvement	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.219	0.048		-		-		-		-	0	0.267	0
Stop, Stare and Track	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.483	0.048		-		-		-		-	0	0.531	0
Cross Domain Solution Network Interface / Cyber Security	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	0.030		0.277		-		-		-	0	0.307	0
Electronic Attack/ Electronic Protect	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	0.306		0.310		0.427		-		0.427	Continuing	Continuing	0
Signal Data Processor North Finding Module	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	0.114		0.269		0.127		-		0.127	Continuing	Continuing	0
Medium Bandwidth Waveform	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	-		0.229		0.215		-		0.215	Continuing	Continuing	0
Active Electronically Scanned Array	Various	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	-		-		0.591		-		0.591	Continuing	Continuing	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	13.269	0.546		1.085		1.360		-		1.360	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Improved Sentinel Development	SS/CPFF	Thales Raytheon Systems : Fullerton, CA	102.729	-		-		-		-		-	0	102.729	0
System of Systems Mod Development & Integration	SS/CPFF	Thales Raytheon Systems : Fullerton, CA	20.820	-		-		-		-		-	0	20.820	0
Battle Space Improvement	Various	Thales Raytheon Systems & Various : Fullerton,CA / Various	1.601	-		-		-		-		-	0	1.601	0
Stop, Stare, and Track	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	3.604	-		-		-		-		-	0	3.604	0
Cross Domain Solution Network Interface / Cyber Security	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	0.000	0.210		2.400		-		-		-	0	2.610	0
Electronic Attack/ Electronic Protect	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	0.000	1.994		3.037		4.179		-		4.179	0	9.210	0
Signal Data Processor/ North Finding Module	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	0.000	1.245		2.353		1.071		-		1.071	Continuing	Continuing	0
Medium Bandwidth Waveform	Various	Thales Raytheon Systems & Various : Fullerton, CA	0.000	-		0.943		0.702		-		0.702	Continuing	Continuing	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Active Electronically Scanned Array	Various	Various : Various	0.000	-		-		7.095		-		7.095	Continuing	Continuing	0
		Subtotal	128.754	3.449		8.733		13.047		-		13.047	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Improved Sentinel Development	SS/CPFF	Thales Raytheon Systems : Fullerton, CA	16.930	-		-		-		-		-	0	16.930	0
System of Systems Mod Development & Integration	SS/CPFF	Thales Raytheon Systems : Fullerton, CA	0.352	-		-		-		-		-	0	0.352	0
		Subtotal	17.282	-		-		-		-		-	0.000	17.282	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Improved Sentinel Mod Development	SS/CPFF	Thales Raytheon Systems : Fullerton, CA	34.599	-		-		-		-		-	0	34.599	0
System of Systems Mod Development & Integration	SS/CPFF	Thales Raytheon Systems : Fullerton, CA	2.331	-		-		-		-		-	0	2.331	0
Battle Space Improvement	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	0.869	0.432		-		-		-		-	0	1.301	0
Stop, Stare and Track	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	1.847	0.432		-		-		-		-	0	2.279	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cross Domain Solution Network Interface / Cyber Security	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	0.000	-		0.832		-		-		-	0	0.832	0
Electronic Attack/ Electronic Protect	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	0.000	0.163		0.600		0.907		-		0.907	Continuing	Continuing	0
Signal Data Processor North Finding Module	Various	Thales Raytheon Systems & Various : Fullerton, CA / Various	0.000	-		0.781		0.324		-		0.324	Continuing	Continuing	0
Medium Bandwidth Waveform	Various	Thales Raytheon Systems & Various : Fullerton, CA	0.000	-		0.278		0.345		-		0.345	Continuing	Continuing	0
		Subtotal	39.646	1.027		2.491		1.576		-		1.576	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	198.951	5.022		12.309		15.983		-		15.983	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

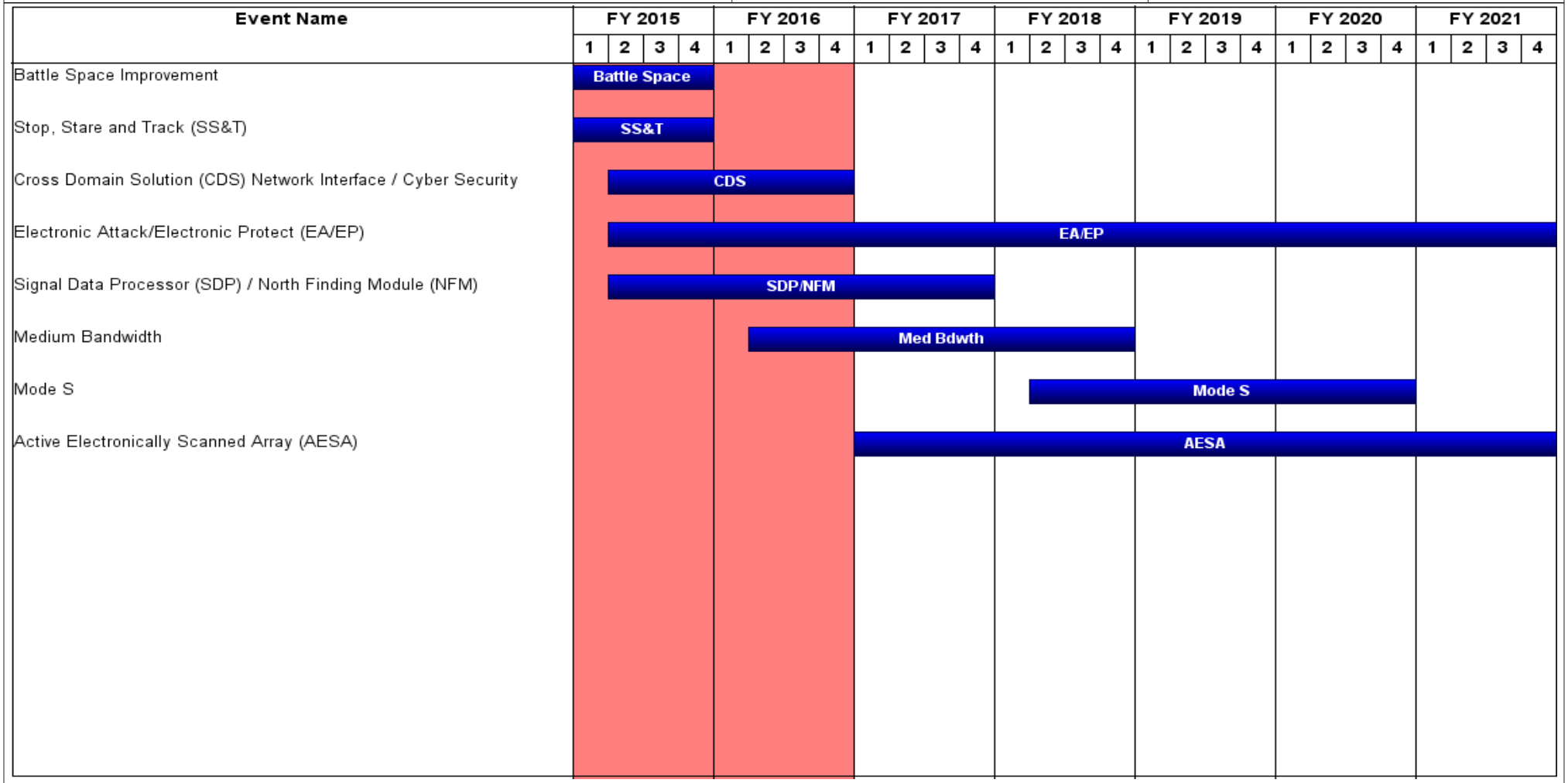

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Battle Space Improvement	4	2012	4	2015
Stop, Stare and Track (SS&T)	4	2012	4	2015
Cross Domain Solution (CDS) Network Interface / Cyber Security	2	2015	4	2016
Electronic Attack/Electronic Protect (EA/EP)	2	2015	4	2021
Signal Data Processor (SDP) / North Finding Module (NFM)	2	2015	4	2017
Medium Bandwidth	2	2016	4	2018
Mode S	2	2018	4	2020
Active Electronically Scanned Array (AESA)	1	2017	4	2021

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604822A *I General Fund Enterprise Business System (GFEBS)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.500	21.155	6.805	-	6.805	24.809	34.820	39.828	19.825	Continuing	Continuing
DV6: *General Fund Enterprise Business System*	-	5.500	6.455	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
EV4: *General Fund Enterprise Business System Inc 2*	-	0.000	0.000	6.805	-	6.805	24.809	34.820	39.828	19.825	0.000	126.087
GF5: *General Fund Enterprise Business System*	-	0.000	14.700	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.700

A. Mission Description and Budget Item Justification

Mission Description and Budget Item Justification: The General Fund Business Enterprise System (GFEBS) is a Major Automated Information System program and is currently in the sustainment phase. It followed the DoD Business Enterprise Architecture which is aligned to the mandated Federal Enterprise Architecture. GFEBS was implemented to fulfill the needs and comply with the Federal Financial Management Improvement Act, The Chief Financial Officers Act of 1990, the Government Performance and Results Act of 1993, the Government Management Reform Act of 1994, and the Clinger-Cohen Act of 1996 and to fulfill the stated mission of the Assistant Secretary of the Army for Financial Management and Comptroller. GFEBS replaced, in full or in part, financial systems operating in excess of 40 years including the Standard Finance Systems and other costly feeder systems which do not allow the Department of Defense or the U.S. government to achieve an unqualified audit opinion on its financial statements. GFEBS is used to administering the Army's General Fund. GFEBS was developed using a commercial off-the-shelf Enterprise Resource Planning system that is certified by the Chief, Financial Officer Council and provides six core financial functions. GFEBS allows tactical commanders to make informed decisions on a virtually real time system. On 1 October 2008, GFEBS deployed to Wave 1 end users at Fort Jackson Garrison, Defense Finance Accounting Service (DFAS) Indianapolis, Indiana and several other organizations. The Full Deployment Decision was received by the Milestone Decision Authority on 24 June 2011 and Full Deployment was Full Deployment was achieved on 1 July 2012. Today, GFEBS continues in sustainment. Efforts include sustaining the system and infrastructure, making modifications needed for audit readiness, compliancy, and upgrades requirement to maintain the system to meet SAP standards. Additionally, GFEBS continues to make changes as requested by the user community through the Functional Governance Board, a board that prioritizes user needs, and to update the infrastructure as required to meet SAP requirements and best practices. Some of these changes require developmental funding.

GFEBS-Sensitive Activities (SA): GFEBS is a commercial off-the-shelf Enterprise Resource Planning System certified by the Chief Financial Officers Council. Army still has classified and sensitive financial activity remaining in legacy systems that cannot be processed in our new, fully-fielded GFEBS. To protect sensitive information and enable auditability, Army needs a separate instance of GFEBS operated on a secure network for processing sensitive and classified financial transactions. GFEBS-SA will be implemented to 3,000 users across 100 locations worldwide. GFEBS-SA will integrate seamlessly with GFEBS to provide secure, web-based financial execution and reporting capabilities to the Army's classified and sensitive activities. SA is envisioned as a fully functional GFEBS application operated on a secure network leveraging off of the sustained system design.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604822A *I General Fund Enterprise Business System (GFEBS)*

GFEBS Increment II: Provides development, integration, and sustainment of incremental enhancements with the delivery of two major builds. Each build will deliver increased capabilities that will displace an additional 20+ legacy systems. The new Increment II requirements have been categorized by the functional community as Integrated Resource Management (IRM) and Army Standard Labor Time Tracking (ASLTT). Pending maturity of requirements development, Supplier Self-Services (SUS) and Environmental Management (EM) are additional capabilities that may be included in INC II.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	15.700	0.000	-	0.000
Current President's Budget	5.500	21.155	6.805	-	6.805
Total Adjustments	5.500	5.455	6.805	-	6.805
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	5.455			
• Reprogrammings	5.500	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	6.805	-	6.805

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	Project (Number/Name) DV6 / *General Fund Enterprise Business System*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DV6: *General Fund Enterprise Business System*	-	5.500	6.455	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project DV6 is General Fund Enterprise Business System - Sensitive Activities.

A. Mission Description and Budget Item Justification

SA is a fully functional GFEBS application operated on a secure network (SIPRNET), including additional performance requirements designed to protect sensitive intelligence operations and special operations missions. SA is essential to comply with the Chief Financial Officers (CFO) Act and the Federal Financial Management Improvement Act (FFMIA) and prevent compromise of data that could cause grave harm to U.S. forces. GFEBS SA integrates secure capability across domain interfaces.

No FY17 request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Product Development	5.500	6.455	-
Description: Funds provide development efforts for GFEBS-SA. ***FY 2015 Accomplishments:*** Funds provide development efforts for GFEBS-SA. ***FY 2016 Plans:*** Funds provide development efforts for GFEBS-SA.			
Accomplishments/Planned Programs Subtotals	5.500	6.455	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B55511, GFEBS SENSITIVE ACTIVITIES: *Other Procurement, Army*	8.228	-	-	-	-	-	-	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** DV6 / *General Fund Enterprise Business System*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Plan, develop, and manage GFEBS-SA as a separate instance from GFEBS base program to support evolutionary delivery of capabilities.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	Project (Number/Name) DV6 / *General Fund Enterprise Business System*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Costs	Various	PdM GFEBS SA : Alexandria, VA	2.726	5.500		6.455		-		-		-	0	14.681	0
		Subtotal	2.726	5.500		6.455		-		-		-	0.000	14.681	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	IA	JITC/ATEC : Alexandria, VA	4.960	-		-		-		-		-	0	4.960	0
		Subtotal	4.960	-		-		-		-		-	0.000	4.960	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.686	5.500		6.455		-		-		-	0.000	19.641	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** DV6 / *General Fund Enterprise Business System*

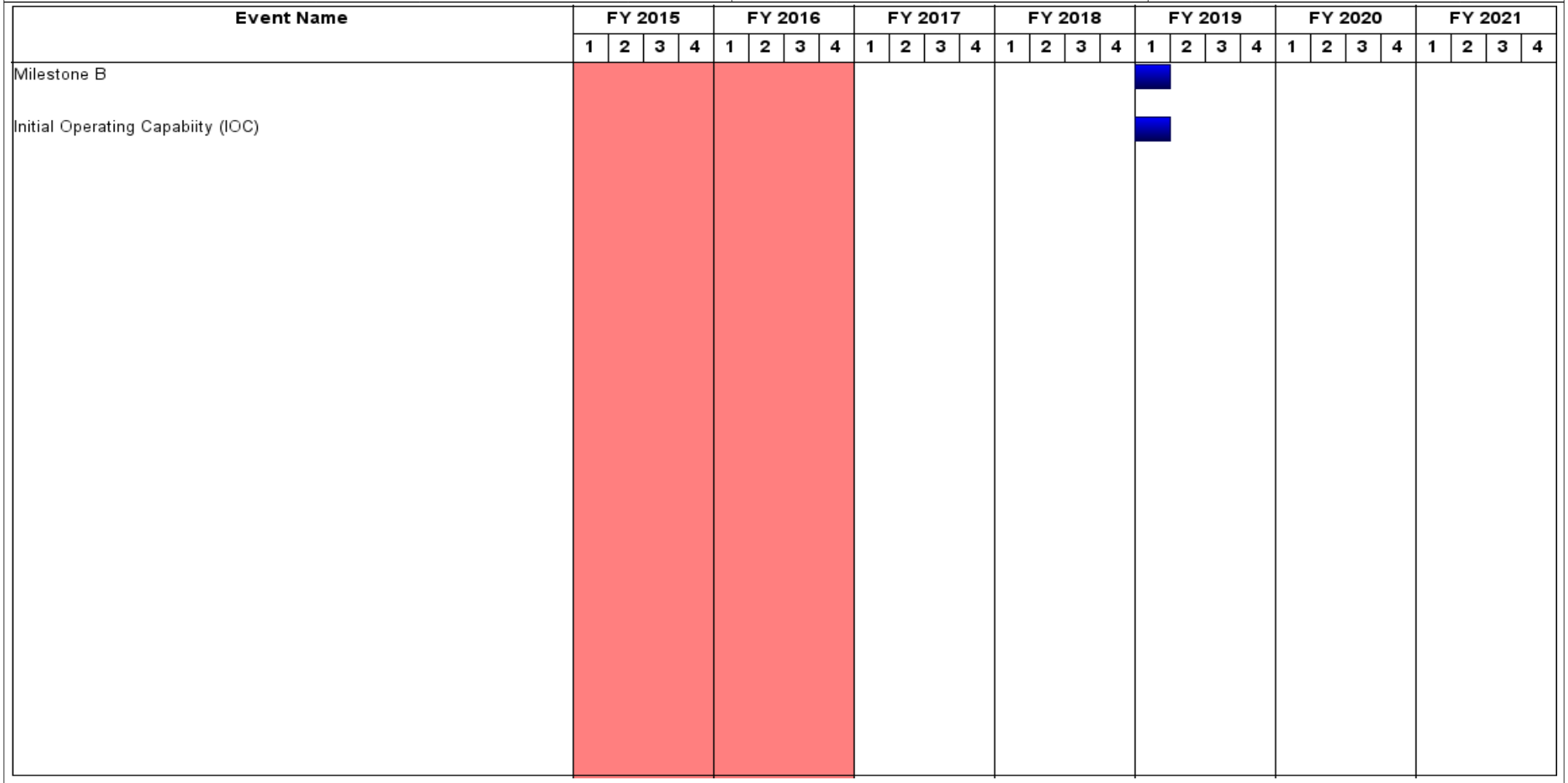

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** DV6 / *General Fund Enterprise Business System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone B	1	2019	1	2019
Initial Operating Capabiity (IOC)	1	2019	1	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	Project (Number/Name) EV4 / *General Fund Enterprise Business System Inc 2*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EV4: *General Fund Enterprise Business System Inc 2*	-	0.000	0.000	6.805	-	6.805	24.809	34.820	39.828	19.825	0.000	126.087
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

GFEBS Increment II New Start capabilities funded in EV4 beginning FY17.

A. Mission Description and Budget Item Justification

GFEBS Increment II: Provides development, integration, and sustainment of incremental enhancements with the delivery of two major builds. Each build will deliver increased capabilities that will displace an additional 20+ legacy systems. The new Increment II requirements have been categorized by the functional community as Integrated Resource Management (IRM) and Army Standard Labor Time Tracking (ASLTT). These gaps jeopardize the Army's ability to maintain financial compliance, achieve auditable financial statements, and reduce the Army's ability to maximize a return on its Enterprise Resource Planning (ERP) investments. The Army is pursuing an IRM capability that focuses on programmed manning, program and budget planning and reporting processes across the Army. The capability will enable the Army to efficiently reconcile budget execution against program & strategic plans, create forward looking predictive cost analytics, or efficiently manage its organizational structures. The capability will provide full visibility into programmed manning and budget execution planning & programming processes and data across Army Commands. Until an enterprise solution is provided, the Army's IRM business process will lack enterprise level visibility and will be unable to author and manage Command TDA force structures that satisfy Global Force Management (GFM) requirements for an Army in motion. Army Standard Labor Time Tracking (ASLTT), an enterprise labor tracking system, will be able to track labor hours for Civilian, Military and Contractors and map them to the Army authoritative outputs (products and services) which they support. This effort will eliminate redundant labor tracking systems, increase efficiencies, ensure the workforce is the right size and mix, and will be financially auditable. These labor hours will be accurate and the costs associated with this labor will be mapped in a timely manner (especially since some Army organizations are fully reimbursable). By doing this, the Army can terminate other time tracking systems or processes currently being used. Furthermore, it will support the audibility of reimbursable intra-Army work. These gaps jeopardize the Army's ability to maintain financial compliance, achieve auditable financial statements, and reduce the Army's ability to maximize a return on its Enterprise Resource Planning (ERP) investments. Pending maturity of requirements development, Supplier Self-Services (SUS) and Environmental Management (EM) are additional capabilities that may be included in INC II. Implementation of SUS provides upgrades and response to U.S. Treasury requirements to reduce current manual effort to process vendor electronic submitted invoices, reduce interest paid due to late payments to vendors, reduction in cost associated with current complex custom interfaces which are required to pay Army contract invoices and replace legacy systems, which are not auditable. Integration of HQAES (Environmental Management) capabilities results in business enterprise synchronization of environmental data collection, analysis, and reporting with financial management capabilities. Integration supports HQDA's strategy for achieving and maintaining audit readiness for Environmental and Disposal Liabilities under DoD FMR, Volume 14, Chapter 13, "Environmental Liabilities".

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: GFEBS Increment II	-	-	6.805

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** EV4 / *General Fund Enterprise Business System Inc 2*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: GFEBS Increment II: Provides development, integration, and sustainment of incremental enhancements with the delivery of two major builds. Each build will deliver increased capabilities that will displace an additional 20+ legacy systems. The new Increment II requirements have been categorized by the functional community as Integrated Resource Management (IRM) and Army Standard Labor Time Tracking (ASLTT). Pending maturity of requirements development, Supplier Self-Services (SUS) and Environmental Management (EM) are additional capabilities that may be included in INC II. ***FY 2017 Plans:*** Acquisition planning and pre-award documentation for development contract.			
Accomplishments/Planned Programs Subtotals	-	-	6.805

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The PMO will participate in a robust requirements definition, comprehensive analyses of alternative, an initial business process design activities with the functional community, and will prepare the required acquisition documentation to achieve authorization to proceed with acquiring the required capability. These efforts require PMO expertise across all areas: acquisition, technical, functional, testing, management, and programmatics (e.g. contracts, budget).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	Project (Number/Name) EV4 / *General Fund Enterprise Business System Inc 2*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development	TBD	Acuisition Planning and pre-award documentation : Alexandria, VA	0.000	-		-		6.805		-		6.805	0	6.805	0
		Subtotal	0.000	-		-		6.805		-		6.805	0.000	6.805	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		6.805		-		6.805	0.000	6.805	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** EV4 / *General Fund Enterprise Business System Inc 2*

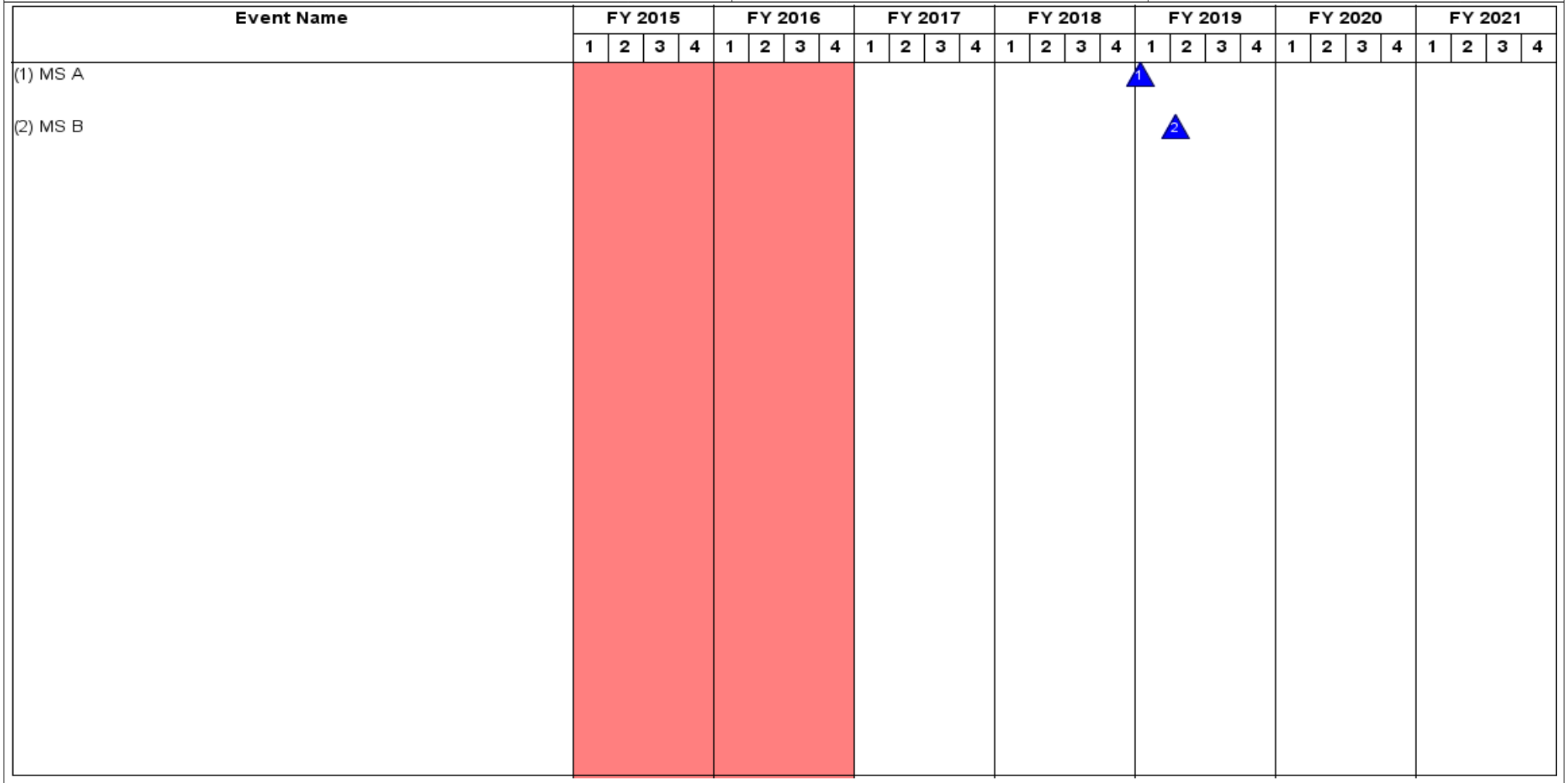

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** EV4 / *General Fund Enterprise Business System Inc 2*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MS A	1	2019	1	2019
MS B	2	2019	2	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	Project (Number/Name) GF5 / *General Fund Enterprise Business System*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
GF5: *General Fund Enterprise Business System*	-	0.000	14.700	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.700
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The General Fund Business Enterprise System (GFEBS) is a Major Automated Information System program and is currently in the sustainment phase. It followed the DoD Business Enterprise Architecture which is aligned to the mandated Federal Enterprise Architecture. GFEBS was implemented to fulfill the needs and comply with the Federal Financial Management Improvement Act, The Chief Financial Officers Act of 1990, the Government Performance and Results Act of 1993, the Government Management Reform Act of 1994, and the Clinger-Cohen Act of 1996 and to fulfill the stated mission of the Assistant Secretary of the Army for Financial Management and Comptroller. GFEBS replaced, in full or in part, financial systems operating in excess of 40 years including the Standard Finance Systems and other costly feeder systems which do not allow the Department of Defense or the U.S. government to achieve an unqualified audit opinion on its financial statements. GFEBS is used to administering the Army's General Fund. GFEBS was developed using a commercial off-the-shelf Enterprise Resource Planning system that is certified by the Chief, Financial Officer Council and provides six core financial functions. GFEBS allows tactical commanders to make informed decisions on a virtually real time system.
On 1 October 2008, GFEBS deployed to Wave 1 end users at Fort Jackson Garrison, Defense Finance Accounting Service (DFAS) Indianapolis, Indiana and several other organizations. The Full Deployment Decision was received by the Milestone Decision Authority on 24 June 2011 and Full Deployment was Full Deployment was achieved on 1 July 2012. Today, GFEBS continues in sustainment. Efforts include sustaining the system and infrastructure, making modifications needed for audit readiness, compliancy, and upgrades required to maintain the system to meet SAP standards. Additionally, GFEBS continues to make changes as requested by the user community through the Functional Governance Board, a board that prioritizes user needs, and to update the infrastructure as required to meet SAP requirements and best practices. Some of these changes require developmental funding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: HQAES Development and Integration	-	14.700	-
Description: Initial development and integration of HQAES capabilities for collection, analysis and reporting of environmental clean-up, quality and hazardous waste data. ***FY 2016 Plans:*** Development and integration of Environmental Management, Integrated Resource Management, and Total Cost Management. Integration of Environmental Management will migrate HQAES capabilities for collection, analysis, and reporting of environmental clean-up, quality and hazardous waste data.			
Accomplishments/Planned Programs Subtotals	-	14.700	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** GF5 / *General Fund Enterprise Business System*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• BE4168, GFEBS: *Other Procurement, Army*	2.853	13.540	6.416	-	6.416	4.225	4.322	4.401	4.453	0.000	40.210

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	Project (Number/Name) GF5 / *General Fund Enterprise Business System*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development	Various	Accenture : Kingstowne VA 22305	120.968	-		-		-		-		-	Continuing	Continuing	0
HQAES Integration	C/FFP	TBD : TBD	0.000	-		14.700		-		-		-	0	14.700	0
		Subtotal	120.968	-		14.700		-		-		-	-	-	0.000

Remarks

There is no base funding in FY17

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	120.968	-		14.700		-		-		-	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** GF5 / *General Fund Enterprise Business System*

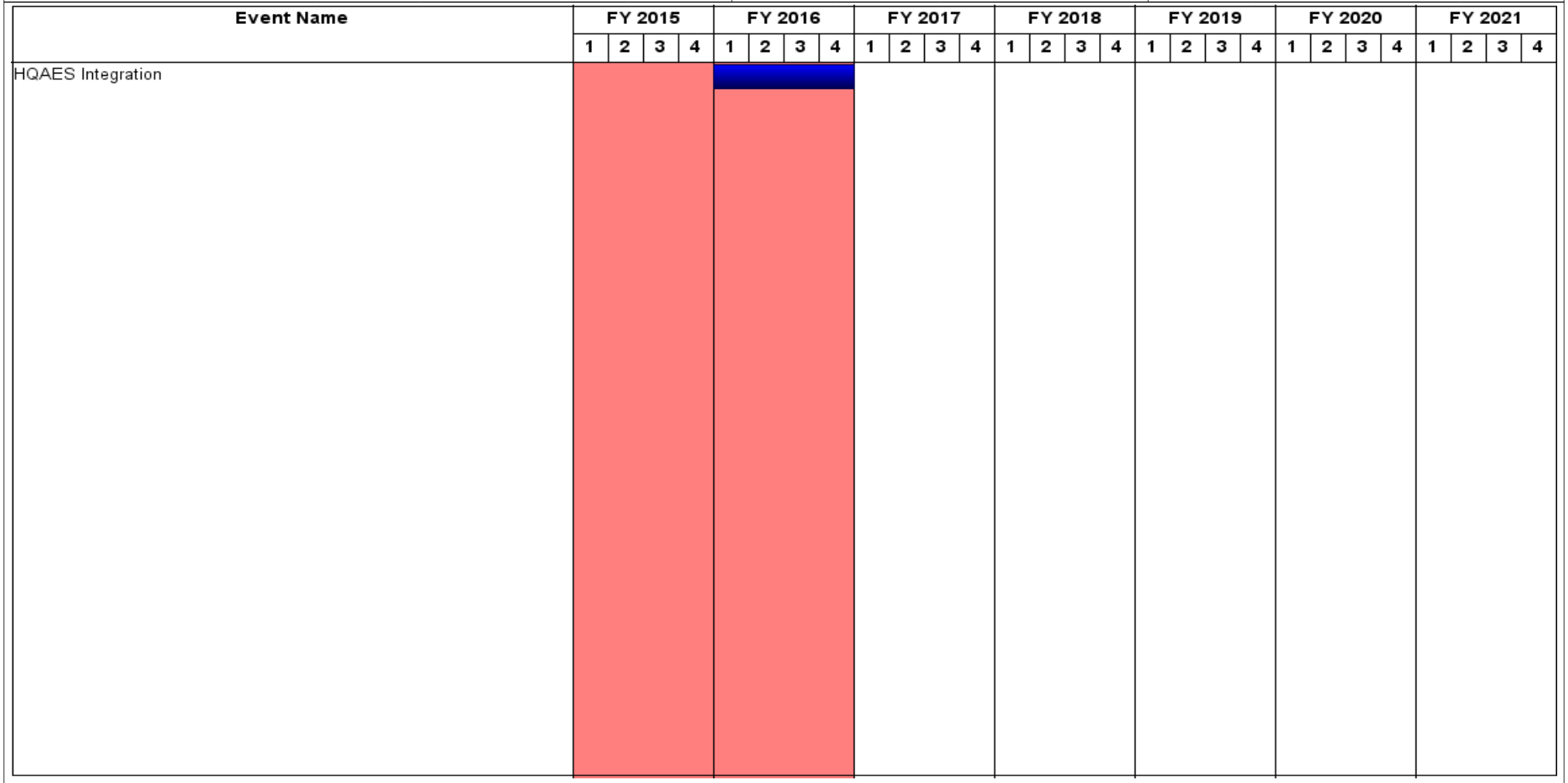

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604822A / *General Fund Enterprise Business System (GFEBS)*	**Project (Number/Name)** GF5 / *General Fund Enterprise Business System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
HQAES Integration	1	2016	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604823A / *Firefinder*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	22.587	2.967	9.235	-	9.235	10.814	10.170	8.415	9.104	Continuing	Continuing
L86: *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*	-	0.000	2.967	3.187	-	3.187	3.463	3.500	0.000	0.000	0.000	13.117
L88: *Enhanced AN/TPQ 36*	-	22.587	0.000	6.048	-	6.048	7.351	6.670	8.415	9.104	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program funds design, development and test of primary target acquisition and counterfire radars to automatically detect, locate and classify hostile indirect fire weapons (mortars, artillery, and rockets). The program directly supports the prioritization, tracking and locating of targets, and dissemination of that information for simultaneous attack of multiple threats. It provides the Warfighter with continuous and responsive counterfire target acquisition systems for all types and phases of military operations. Project L86, Lightweight Counter Mortar Radar (LCMR), version AN/TPQ-50 provides 360 degrees of azimuth coverage from ranges of 500 meters to 10 kilometers. The AN/TPQ-50 radars are currently fielded to multiple Continental United States (CONUS) and Outside Continental United States (OCONUS) locations to include operational support to Operation Inherent Resolve (OIR) and Operation Freedom Sentinel (OFS). Project L88, AN/TPQ-53 is a highly mobile radar system that will leverage the latest in technology design to accelerate technology infusion and increase range while improving False Alarm Rate, reducing obsolescence and increasing reliability. The AN/TPQ-53 provides a system with increased range and accuracy throughout a 90 degree search sector (stare mode) as well as 360 degree coverage (rotating) for locating mortar, artillery and rocket firing positions.

The Fiscal Year (FY) 2017 funds of $9.235 million will support ongoing AN/TPQ-53 test efforts and Army interoperability certifications (AICs), AN/TPQ-50 and AN/TPQ-53 development and testing of pre-planned product improvement (P3I) efforts for electronic protection and new and emerging threats, and the performance of technical assessments, concept studies, risk reduction and required documentation.

The FY 2017 funding request was reduced by $1.063 million to account for the availability of prior year execution balances.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604823A / *Firefinder*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	23.480	6.243	11.314	-	11.314
Current President's Budget	22.587	2.967	9.235	-	9.235
Total Adjustments	-0.893	-3.276	-2.079	-	-2.079
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.276			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.893	-			
• Adjustments to Budget Years	-	-	-2.079	-	-2.079

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604823A / *Firefinder*	Project (Number/Name) L86 / *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
L86: *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*	-	0.000	2.967	3.187	-	3.187	3.463	3.500	0.000	0.000	0.000	13.117
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The AN/TPQ-50 Lightweight Counter Mortar Radar (LCMR) is a highly mobile radar that automatically detects, classifies, tracks, and locates the point of origin of projectiles fired from mortar, artillery, and rocket systems with sufficient accuracy for first round fire for effect. It mitigates close combat radar coverage gaps by providing 360 degrees of azimuth coverage from ranges of 500 meters to 10 kilometers and is capable of being deployed in two configurations, standalone or vehicle mounted. The AN/TPQ-50 system interoperates with battle command systems (BCSs) to provide the maneuver commander increased counterfire radar flexibility. The AN/TPQ-50 is deployed as part of the Counter-Rocket, Artillery, Mortar (C-RAM) system of systems. It provides data to the Forward Area Air Defense Command and Control (FAAD C2) node for the sense and warn force protection capability. The AN/TPQ-50 is currently fielded to multiple Continental United States (CONUS) and Outside Continental United States (OCONUS) locations to include support to Operation Inherent Resolve (OIR) and Operation Freedom Sentinel (OFS).

The Fiscal Year (FY) 2017 RDTE funds of $3.187M will support the development and testing of pre-planned product improvement (P3I) for electronic protection and new and emerging threats in addition to the performance of technical assessments, concept studies, risk reduction efforts and required documentation.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Electronic Protection	-	1.052	0.675	-	0.675
Description: Develop radio frequency (RF) management tactical decision aids to improve operational frequency band selection, radar emplacement and signal processor protection algorithms to defeat radar targeting armaments. The effort also improves spectrum management and mitigates electromagnetic interference (EMI) from commercial and military bands in addition to hostile EMI.					
FY 2016 Plans: Funding will initiate the developmental efforts to improve spectrum management, mitigate EMI from commercial and military bands, and includes associated testing costs.					
FY 2017 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L86 / *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Funding will continue the developmental efforts to improve spectrum management, mitigate EMI from commercial and military bands, and includes associated testing costs.					
Title: New and Emerging Threats ***Description:*** Changes on the battlefield due to new tactics, techniques and procedures (TTPs) and/or areas of operation will bring new and changing threats not included in current requirement. Based upon bi-annual release of the System Threat Assessment Report (STAR), synthesize requirements; and design, code and test improvements. ***FY 2016 Plans:*** This will initiate the work required to enhance the AN/TPQ-50's capability to accurately detect, track and locate new threats to the warfighter and includes associated testing costs. ***FY 2017 Base Plans:*** This will continue the work required to enhance the AN/TPQ-50's capability to accurately detect, track and locate new threats to the warfighter and includes associated testing costs.	-	1.915	2.512	-	2.512
Accomplishments/Planned Programs Subtotals	-	2.967	3.187	-	3.187

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B05201: *SSN: B05201 Lightweight Counter Mortar Radar*	29.358	63.472	74.038	25.892	99.930	10.855	9.618	-	-	0	213.233

Remarks

D. Acquisition Strategy

The AN/TPQ-50 Lightweight Counter Mortar Radar was developed in 2009 to meet Training and Doctrine Command (TRADOC) Capabilities Production Document (CPD) requirements. A favorable full rate production (FRP) decision was achieved on 21 June 2013. The AN/TPQ-50 is now in Full Rate Production; 286 systems have been procured to date. A three year extension to the current production contract is scheduled for award in 2QFY16. Follow on production contracts will be awarded as needed to fulfill the AAO.

The Fiscal Year (FY) 2017 RDTE funds of $3.187M will support the development and testing of pre-planned product improvement (P3I) for electronic protection and new and emerging threats in addition to the performance of technical assessments, concept studies, risk reduction efforts and required documentation.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L86 / *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L86 / *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management (Government Matrix)	Various	Various : Activities	1.155	-		0.144		0.150		-		0.150	0	1.449	0
		Subtotal	1.155	-		0.144		0.150		-		0.150	0.000	1.449	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Electronic Protection	C/CPFF	TBD : TBD	0.000	-		0.979		0.615	Jan 2017	-		0.615	0	1.594	0
New and Emerging Threats	C/CPFF	TBD : TBD	0.000	-		1.782		2.122	Jan 2017	-		2.122	Continuing	Continuing	0
		Subtotal	0.000	-		2.761		2.737		-		2.737	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support (Government)	Various	Various : Activities	4.751	-		0.062		0.300		-		0.300	Continuing	Continuing	0
		Subtotal	4.751	-		0.062		0.300		-		0.300	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.906	-		2.967		3.187		-		3.187	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L86 / *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*

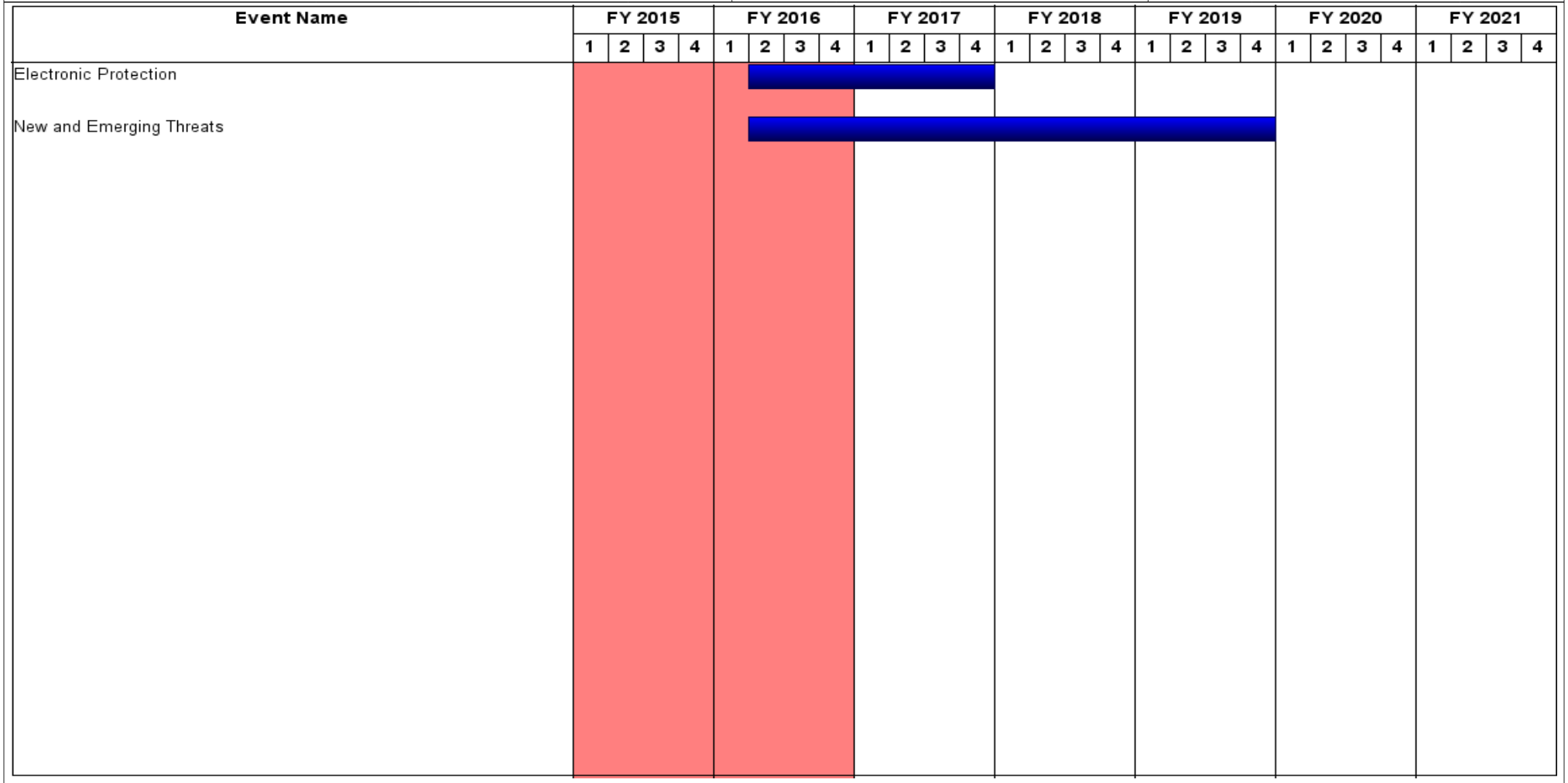

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L86 / *LIGHTWEIGHT COUNTER MORTAR RADAR (LCMR)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Electronic Protection	2	2016	4	2017
New and Emerging Threats	2	2016	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604823A / *Firefinder*	Project (Number/Name) L88 / *Enhanced AN/TPQ 36*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
L88: *Enhanced AN/TPQ 36*	-	22.587	0.000	6.048	-	6.048	7.351	6.670	8.415	9.104	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The AN/TPQ-53 Counterfire Target Acquisition Radar System is a highly mobile radar set that automatically detects, classifies, tracks, and locates the point of origin of projectiles fired from mortar, artillery, and rocket systems with sufficient accuracy for first round fire for effect. It mitigates close combat radar coverage gaps by providing a 90 degree search sector (stare mode) as well as 360 degree coverage (rotating) and will ultimately replace the current AN/TPQ-36 and AN/TPQ-37 Firefinder Radars. The AN/TPQ-53 system interoperates with battle command systems (BCSs) to provide the maneuver commander increased counterfire radar flexibility. The AN/TPQ-53 is deployed as part of the Counter-Rocket, Artillery, Mortar (C-RAM) system of systems. It provides data to the Forward Area Air Defense Command and Control (FAAD C2) node for the sense and warn force protection capability. The AN/TPQ-53 will be fielded to multiple Continental United States (CONUS) and Outside Continental United States (OCONUS) locations to include support to Operation Inherent Resolve (OIR).

The Fiscal Year (FY) 2017 funds of $6.048 million will support ongoing test efforts, Army interoperability certifications (AICs), development and testing of pre-planned product improvements (P3I) for electronic protection and new and emerging threats, and the performance of technical assessments, concept studies, risk reduction and required documentation.

The FY 2017 funding request was reduced by $1.063 million to account for the availability of prior year execution balances.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Test support ***Description:*** Funding is provided to support testing efforts ***FY 2015 Accomplishments:*** Test activities to include the Capstone event, Initial Operational Test and Evaluation (IOT&E) 2, reliability and performance testing, follow-on testing, ammunition, and associated program management office (PMO) and test support costs. ***FY 2017 Base Plans:*** Test activities to include Army interoperability certification (AIC) testing, engineering and customer tests, an adversarial assessment, and associated PMO and test support costs.	16.107	-	3.300	-	3.300
Title: Electronic Protection / Worldwide Interoperability for Microwave Access (WiMAX)	2.155	-	1.632	-	1.632

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L88 / *Enhanced AN/TPQ 36*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: This effort funds the development of radio frequency (RF) management tactical decision aids that improve operational frequency band selection, radar emplacement, and signal processor protection algorithms to defeat radar targeting armaments. The effort also improves spectrum management and mitigates EMI from commercial and military bands in addition to hostile EMI. ***FY 2015 Accomplishments:*** Mitigate electromagnetic interference (EMI) from military bands, hostile EMI, and the WiMAX commercial spectrum. Address and keep pace with new and emerging threats; these efforts include associated program management office (PMO) and test support costs. ***FY 2017 Base Plans:*** Continue to mitigate EMI from military bands, hostile EMI, and the WiMAX commercial spectrum; this includes associated PMO and test support costs					
Title: New and Emerging Threats ***Description:*** This effort funds the development of capabilities not included in the current requirement resulting from the bi-annual release of the system threat assessment report (STAR) and changes on the battlefield due to new tactics, techniques, and procedures (TTPs) and/or areas of operation. ***FY 2015 Accomplishments:*** Initiate developmental efforts to accurately detect, track, and locate new and emerging threats to the warfighter as a result of changes in the battlefield and areas of operation; this includes associated PMO and test support costs. ***FY 2017 Base Plans:*** Continue developmental efforts to accurately detect, track, and locate new and emerging threats to the warfighter as a result of changes in the battlefield and areas of operation; this includes associated PMO and test support costs.	2.154	-	1.116	-	1.116
Title: Signal Data Processor (SDP) ***Description:*** Development efforts to upgrade the SDP in order to support the high speed processing demands of the radar as well as the latest operating system versions. ***FY 2015 Accomplishments:***	1.992	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L88 / *Enhanced AN/TPQ 36*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
SDP design efforts include software and computing architecture development; this includes associated testing and PMO costs. Funded efforts will continue through FY16.					
Title: Global Positioning System (GPS) Military Code (M-Code) ***Description:*** This supports the development and testing of the interfaces for GPS M-Code to improve AN/TPQ-53 performance in GPS denied environments in order to be compliant with PUBLIC LAW 111-383-JAN. 7, 2011 ***FY 2015 Accomplishments:*** Continue software and design development based on information provided by Assured Positioning, Navigation, and Timing (PNT); this includes associated program management office (PMO) costs. Funded efforts will continue through FY16.	0.179	-	-	-	-
Accomplishments/Planned Programs Subtotals	22.587	-	6.048	-	6.048

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SSN B05310 AN/TPQ-53: *SSN B05310 AN/TPQ-53*	154.520	198.379	314.509	-	314.509	214.317	98.940	86.986	14.893	0	1,082.544

Remarks

D. Acquisition Strategy

The AN/TPQ-53 leverages technology developed in the multi-mission radar advanced technology objective (ATO) program. In 2006, the Government awarded a contract following full and open competition for the design of the AN/TPQ-53 radar and the purchase of four non-recurring engineering (NRE) radars. Twelve additional quick reaction capability (QRC) radars were purchased under the same contract in response to an urgent directed procurement in July 2008. The Milestone Decision Authority (MDA) approved the acquisition of up to 20 more QRC radars. Twenty systems were procured through two separate contract actions in 2010 and 2011. A competitive production contract for Low Rate Initial Production (LRIP) systems was awarded in 2012 and options for additional systems were awarded in 2013, 2014, and 2015. Production and delivery of all QRC/Initial Production (IP) systems are complete, and production of LRIP systems is ongoing. A Full Rate Production (FRP) decision was obtained in December 2015. An FRP contract to fill the remainder of the Army Acquisition Objective (AAO) will be awarded no later than September 2016. Additionally, all initial production systems will be retrofitted to the FRP configuration. The FRP system deliveries will continue through fiscal year (FY) 2021. The system will eventually replace all of the AN/TPQ-36 and AN/TPQ-37 systems in the fleet.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L88 / *Enhanced AN/TPQ 36*

The Fiscal Year (FY) 2017 funds of $6.048 million will support ongoing test efforts, Army interoperability certifications (AICs), development and testing of pre-planned product improvements (P3I) for electronic protection and new and emerging threats, and the performance of technical assessments, concept studies, risk reduction and required documentation.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604823A / *Firefinder*	Project (Number/Name) L88 / *Enhanced AN/TPQ 36*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management (Contractor)	Various	Various : Activities	3.969	-		-		-		-		-	Continuing	Continuing	0
Program Management (Government)	Various	Various : Activities	1.339	0.228	Jul 2016	-		0.210	Mar 2017	-		0.210	Continuing	Continuing	0
		Subtotal	5.308	0.228		-		0.210		-		0.210	-	-	0.000

Remarks

Efforts completed before Fiscal Year (FY) 2015 are not included in this R-3 form.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Electronic Protection/ Worldwide Interoperability for Microwave Access (WiMAX)	SS/CPFF	Lockheed Martin : Syracuse, NY	0.000	2.155	Mar 2016	-		1.632	Mar 2017	-		1.632	Continuing	Continuing	0
High Clutter Environment	SS/CPFF	Lockheed Martin : Syracuse, NY	10.340	-		-		-		-		-	0	10.340	0
Low Quadrant Elevation (QE) Shots	SS/CPFF	Lockheed Martin : Syracuse, NY	4.865	-		-		-		-		-	0	4.865	0
New and Emerging Threats	SS/CPFF	Lockheed Martin : Syracuse, NY	0.000	2.154	Mar 2016	-		1.116	Mar 2017	-		1.116	Continuing	Continuing	0
Signal Data Processor (SDP)	SS/CPFF	Lockheed Martin : Syracuse, NY	0.000	1.992	Mar 2015	-		-		-		-	0	1.992	0
Global Positioning System (GPS) Military Code (M-Code)	SS/CPFF	Lockheed Martin : Syracuse, NY	1.232	0.179	Mar 2015	-		-		-		-	Continuing	Continuing	0
Wireless Communication Upgrade	SS/CPFF	Lockheed Martin : Syracuse, NY	1.942	-		-		-		-		-	0	1.942	0
		Subtotal	18.379	6.480		-		2.748		-		2.748	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604823A / *Firefinder*	Project (Number/Name) L88 / *Enhanced AN/TPQ 36*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	SS/CPFF	Georgia Tech Research Institute (GTRI) : Atlanta, GA	0.000	0.926	Sep 2016	-		0.280	Aug 2017	-		0.280	Continuing	Continuing	0
		Subtotal	0.000	0.926		-		0.280		-		0.280	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Various : Activities	36.201	14.953	Sep 2016	-		2.810	Mar 2017	-		2.810	Continuing	Continuing	0
		Subtotal	36.201	14.953		-		2.810		-		2.810	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	59.888	22.587		0.000		6.048		-		6.048	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L88 / *Enhanced AN/TPQ 36*

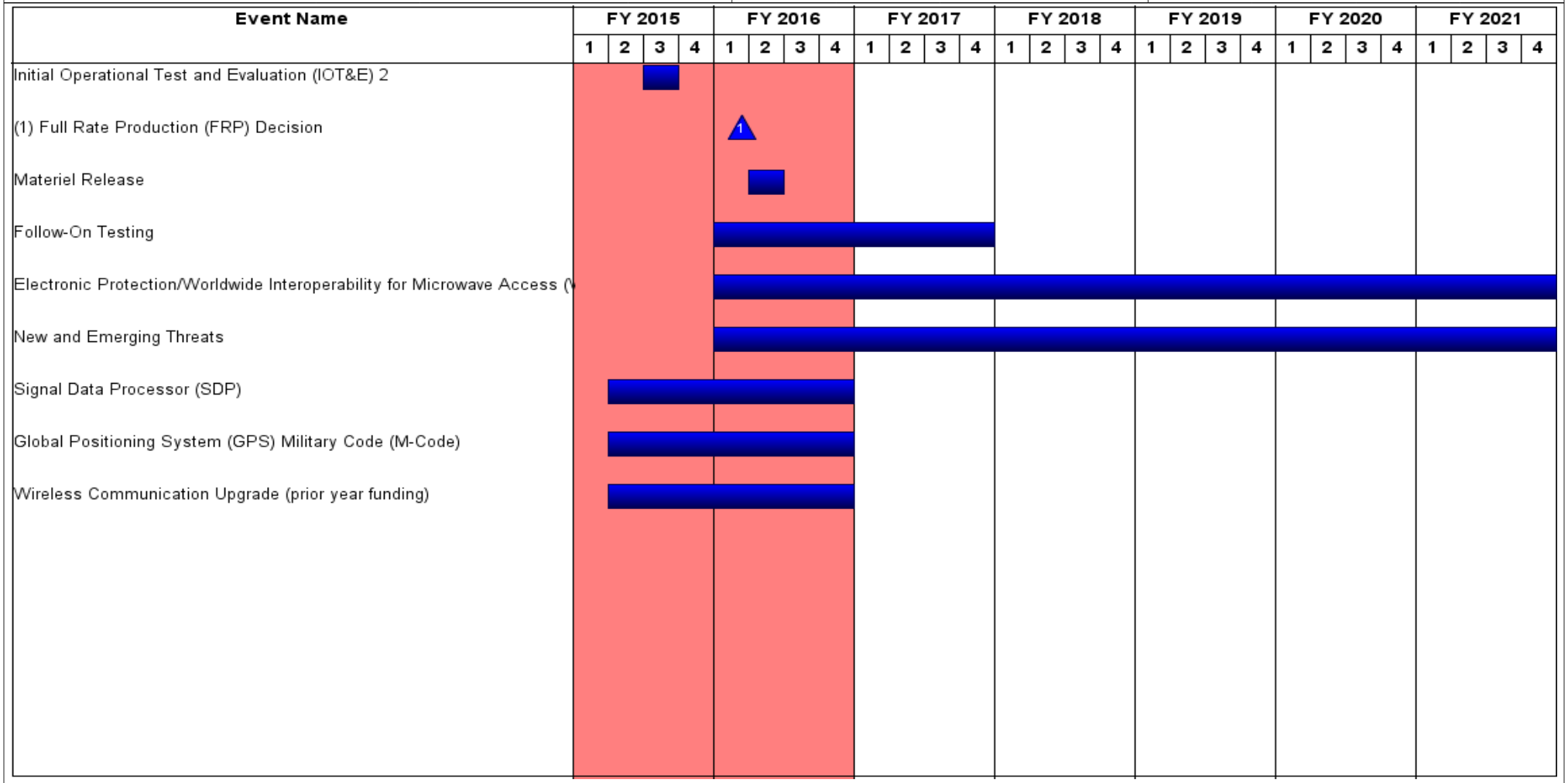

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604823A / *Firefinder*	**Project (Number/Name)** L88 / *Enhanced AN/TPQ 36*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initial Operational Test and Evaluation (IOT&E) 2	3	2015	3	2015
Full Rate Production (FRP) Decision	1	2016	1	2016
Materiel Release	2	2016	2	2016
Follow-On Testing	1	2016	4	2017
Electronic Protection/Worldwide Interoperability for Microwave Access (WiMAX)	1	2016	4	2021
New and Emerging Threats	1	2016	4	2021
Signal Data Processor (SDP)	2	2015	4	2016
Global Positioning System (GPS) Military Code (M-Code)	2	2015	4	2016
Wireless Communication Upgrade (prior year funding)	2	2015	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604827A / *Soldier Systems - Warrior Dem/Val*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.942	18.776	12.393	-	12.393	9.460	7.774	7.931	6.944	Continuing	Continuing
DX7: *TACTICAL COMMUNICATIONS AND PROTECTIVE SYSTEM*	-	0.887	0.934	0.751	-	0.751	0.780	0.810	0.822	0.828	Continuing	Continuing
S65: *Soldier Power*	-	0.000	5.411	11.642	-	11.642	8.680	6.964	7.109	6.116	Continuing	Continuing
S75: *Ground Soldier Ensemble*	-	5.055	12.431	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element contains four projects: Project S56 for Mounted Soldier System (MSS), Project S65 for Soldier Power, Project S75 for Nett Warrior (NW), [named in honor of Medal of Honor recipient COL Robert Nett], previously known as Ground Soldier System (GSS), and Project DX7 Tactical Communications and Protective System (TCAPS). MSS provides an integrated suite of enhancements to the combat vehicle crew member and commander to address identifiable capability gaps in their ability to fight, communicate, and maneuver across the full spectrum of operations. MSS consists of lightweight, modular, and misison tailorable equipment and Command, Control, Communications and Computer (C4) devices worn, carried, or used by mounted crew members in performance of their missions. Congressionally added funding in FY10 for Soldier Power efforts has been applied to the Soldier Power project line. NW provides unparalleled situational awareness and understanding to the dismounted leader allowing for faster and more accurate decisions in the tactical fight. This translates into Soldiers being at the right place, at the right time, with the right equipment making them more effective, more lethal, and more survivable in the execution of their combat mission. TCAPS enables Soldiers to communicate over radios in combat environments while simultaneously providing hearing protection from both steady state and impulse noise.

B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	6.155	18.776	23.839	-	23.839
Current President's Budget	5.942	18.776	12.393	-	12.393
Total Adjustments	-0.213	0.000	-11.446	-	-11.446
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.213	-	-11.446	-	-11.446

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DX7: *TACTICAL COMMUNICATIONS AND PROTECTIVE SYSTEM*	-	0.887	0.934	0.751	-	0.751	0.780	0.810	0.822	0.828	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tactical Communications and Protective System (TCAPS) provides Soldiers with advanced, active hearing protection that simultaneously protects Soldiers' hearing while enabling situational awareness and mission command. TCAPS protects Soldiers against harmful impulse and steady-state noises characteristic of combat environments while also enabling Soldiers to communicate with each other using voice communications over a tactical radio. TCAPS enhances survivability and situational awareness by allowing Soldiers to selectively amplify faint sounds that would not be otherwise audible or intelligible. TCAPS reduces Soldiers' noise induced hearing damage. Includes integration and interface of products on Soldiers.

TCAPS contributes to the reduction of post-service disability compensation and limits lost in-service time related to hearing injuries. TCAPS will continue to employ commercial-off-the-shelf (COTS) solutions that are evaluated periodically. The commercial solutions that meet the technical requirements and are rated the best by the Soldiers will transition to production and fielding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: TCAPS testing and evaluation. ***Description:*** Test articles procurement and testing & evaluation. ***FY 2015 Accomplishments:*** Conducted testing of TCAPS COTS solutions for Soldiers without a radio to ensure all combat Soldiers have active hearing protection. Conducted Gen 2 headset evaluation. ***FY 2016 Plans:*** Continue testing of TCAPS COTS solutions for Soldiers without a radio to ensure all combat Soldiers have active hearing protection. Conduct Post Implementation Review (PIR) for TCAPS and TCAPS lite systems. Conduct test for VIC3 TCAPS cable to be compatible with vehicle intercom systems. ***FY 2017 Plans:*** Funding supports test articles and evaluation for a limited relook of commercial technology to determine if there are improved capabilities to existing fielded systems or similar capabilities at lower costs.	0.631	0.639	0.625
Title: System Engineering and Program Management (SEPM)	0.256	0.295	0.126

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: TCAPS system engineering and program management support. ***FY 2015 Accomplishments:*** Conducted systems engineering and program management for TCAPS such as developing Programs of Instruction and training materials for the TCAPS Non-Radio solution and preplanned product improvement documentation. ***FY 2016 Plans:*** Continue with systems engineering and program management to develop critical documentation for the TCAPS Non-Radio solution and product improvements. ***FY 2017 Plans:*** Funds system engineering and program management for TCAPS; the development of electronic training materials for improved leader training; and ensuring integration and interoperability with other Soldier equipment.			
Accomplishments/Planned Programs Subtotals	0.887	0.934	0.751

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B55510: *Tactical Communications and Protective System*	22.654	25.597	3.623	-	3.623	8.171	8.825	6.204	6.500	Continuing	Continuing

Remarks

D. Acquisition Strategy

TCAPS is an ACAT III program that leverages commercial-off-the-shelf (COTS) technology. TCAPS conducts periodic relook of commercial technology to seek improved capabilities, reduce costs, conduct test and evaluation that allows transition to production.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SEPM	MIPR	Fort Belvoir : Ft Belvoir, VA	0.018	0.291		0.295		0.126		-		0.126	Continuing	Continuing	Continuing
		Subtotal	0.018	0.291		0.295		0.126		-		0.126	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Articles (Engineering Assessment)	MIPR	DLA DSCP : Philadelphia, PA	0.026	0.028		0.028		-		-		-	0	0.082	0
Test Articles (Development Test)	MIPR	DLA DSCP : Philadelphia, PA	0.020	0.019		0.019		0.092		-		0.092	Continuing	Continuing	Continuing
Test Articles (OT)	MIPR	DLA DSCP : Philadelphia, PA	0.120	0.141		0.144		-		-		-	0	0.405	0
		Subtotal	0.166	0.188		0.191		0.092		-		0.092	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Annual Relook of Technology/Evaluation	MIPR	ATEC, AEC, OTC, ARL-SLAD : Various Locations	0.177	0.190		0.192		0.193		-		0.193	Continuing	Continuing	Continuing
Developmental and Operational Test	Various	ATEC, AEC, OTC, ARL-SLAD : Various Locations	0.411	0.218		0.256		0.340		-		0.340	Continuing	Continuing	Continuing
Customer Test	Various	Army Hearing Program Office : Various Locations	0.028	-		-		-		-		-	0	0.028	0
		Subtotal	0.616	0.408		0.448		0.533		-		0.533	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.800	0.887		0.934		0.751		-		0.751	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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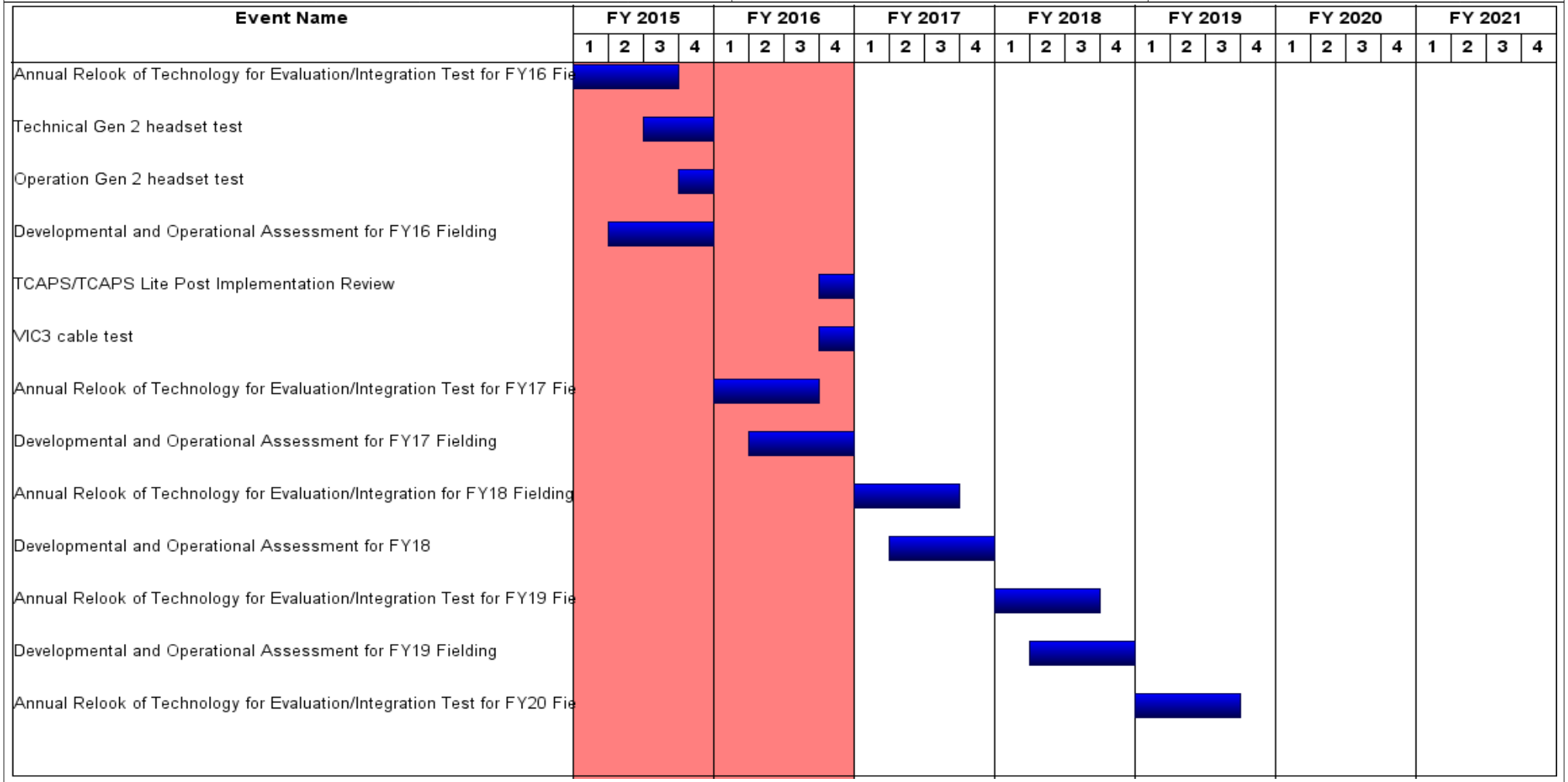

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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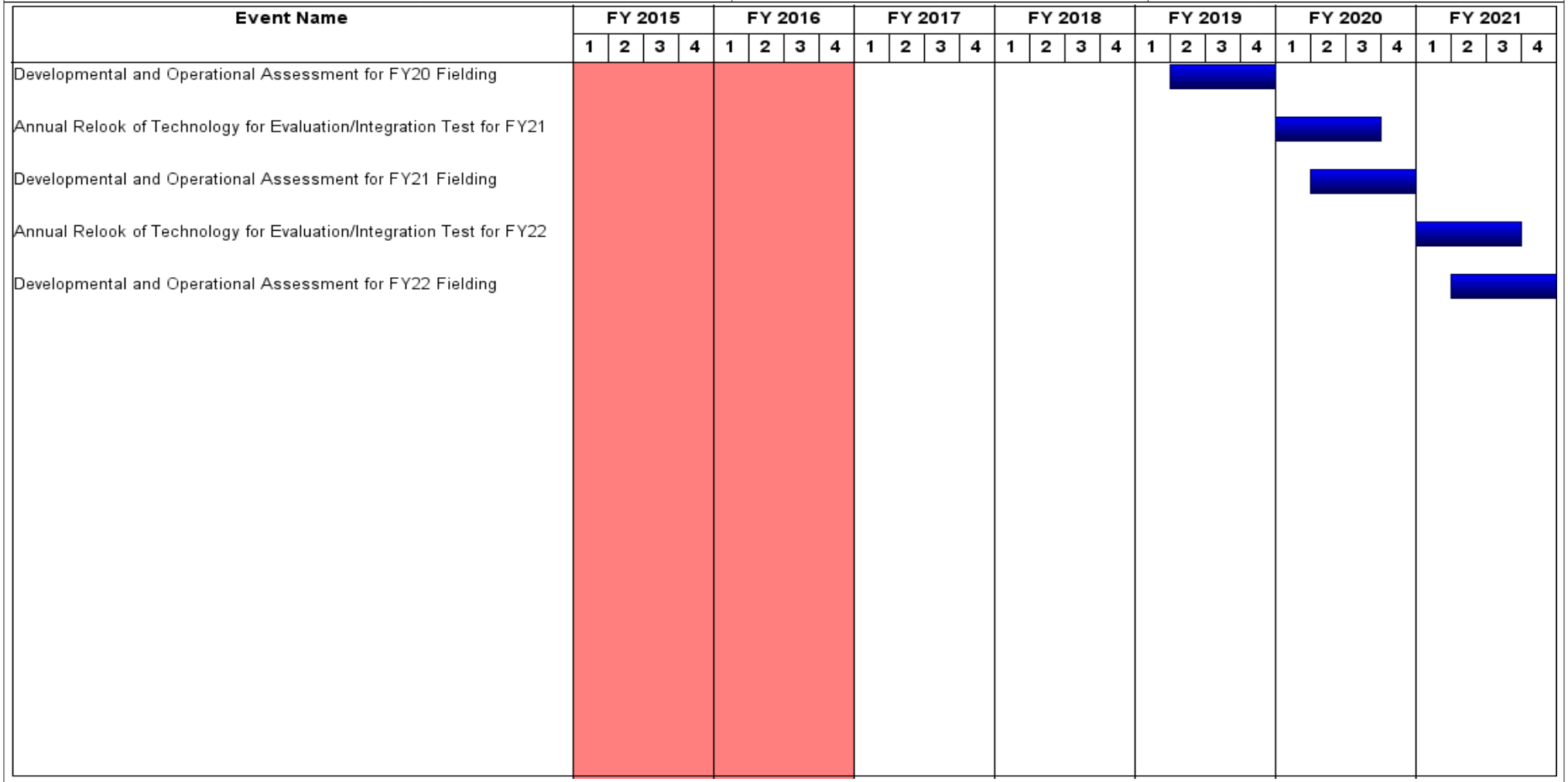

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Annual Relook of Technology for Evaluation/Integration Test for FY16 Fielding	1	2015	3	2015
Technical Gen 2 headset test	3	2015	4	2015
Operation Gen 2 headset test	4	2015	4	2015
Developmental and Operational Assessment for FY16 Fielding	2	2015	4	2015
TCAPS/TCAPS Lite Post Implementation Review	4	2016	4	2016
VIC3 cable test	4	2016	4	2016
Annual Relook of Technology for Evaluation/Integration Test for FY17 Fielding	1	2016	3	2016
Developmental and Operational Assessment for FY17 Fielding	2	2016	4	2016
Annual Relook of Technology for Evaluation/Integration for FY18 Fielding	1	2017	3	2017
Developmental and Operational Assessment for FY18	2	2017	4	2017
Annual Relook of Technology for Evaluation/Integration Test for FY19 Fielding	1	2018	3	2018
Developmental and Operational Assessment for FY19 Fielding	2	2018	4	2018
Annual Relook of Technology for Evaluation/Integration Test for FY20 Fielding	1	2019	3	2019
Developmental and Operational Assessment for FY20 Fielding	2	2019	4	2019
Annual Relook of Technology for Evaluation/Integration Test for FY21	1	2020	3	2020
Developmental and Operational Assessment for FY21 Fielding	2	2020	4	2020
Annual Relook of Technology for Evaluation/Integration Test for FY22	1	2021	3	2021
Developmental and Operational Assessment for FY22 Fielding	2	2021	4	2021

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COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
S65: *Soldier Power*	-	0.000	5.411	11.642	-	11.642	8.680	6.964	7.109	6.116	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Soldier and Small Unit Power (SUP) fills the power and energy gaps created by the increase in mission essential, Soldier portable power consumers, such as situational awareness displays, GPS systems, weapon sensors, radios, and other devices. This RDT&E line develops power sources and solutions suited for not only the individual Soldier, but for the team, squad, and platoon. These power solutions are intended for use in the most austere operating environments and include, but are not limited to, individual Soldier worn systems, integrated power vests, renewable energy, and kinetic energy harvesting. Specific systems are the Integrated Soldier Power/ Data systems (ISPDS), the Conformal Wearable Battery (CWB), the Squad Power Manager (SPM), the Universal Battery Charger (UBC), and Soldier Power Generation (SPG) Technologies. Small Unit Power systems will enable dismounted Soldiers to execute their missions with significantly less battery weight and fewer cables, permitting longer missions and fewer battery resupplies. An integrated Soldier power system will provide the Soldier with a wearable power supply that will be significantly more efficient and lighter than carrying separate batteries for each device. Soldier power systems will reduce the cost, weight, and logistical burden associated with moving fuel and primary (disposable) batteries, and allow dismounted Soldiers to operate independently for longer missions without being tethered to a large generator, vehicle, or supply train. This effort is consistent with the Sep 2013 Small Unit Power CDD, the Dec 2011 Operational Energy ICD, and the Mar 2011 Soldier Protection CDD, and the Universal Battery Charger CPD (May 2015).

Platoon Power Generator - PM E2S2: This project supports the demonstration and development of a Platoon Power Generator (PPG). The SUP PPG (1kW Generator) will provide small units with sufficient portable power to sustain Modified Table of Organizational Equipment (MTOE) unit power demand in support of 48 to 72 hour missions using a common logistical fuel (JP-8). It will be used for charging batteries and powering various types of Army communications and electronics devices. It will provide sufficient power to recharge and power all Platoon equipment and fulfill residual power gaps at the Squad and Soldier level. The generator will provide Platoon power for charging batteries when away from vehicles in Stryker Brigade Combat Teams (SBCT), Armor Brigade Combat Team (ABCT) and as a power source for Infantry Brigade Combat Teams (IBCT) in austere environments. FY16 funds allow for the award and management of R&D contracts to two manufacturers to develop and demonstrate a 1kW PPG. In FY17, these two manufacturers will be down-selected to one for design refinement, test and evaluation, and preparation for production.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Soldier Power Generation (SPG)	-	1.482	7.984
Description: Soldier portable, renewable energy solutions for Soldier Power Generation.			
FY 2016 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue development and optimization of lightweight, Soldier Power Generation chargers/ harvesters, and generators capable of supporting the variety of power devices used in tactical formations. Will support integration of the Universal Battery Charger on the Armored Multi-purpose Vehicle (AMPV) platform. ***FY 2017 Plans:*** Will support EMD activities leading to Milestone C/ Full Rate Production in 1QFY19 for Soldier Power generation. Will continue development and optimization of lightweight, Soldier-portable chargers/harvesters and generators capable of supporting the variety of power devices used in tactical formations. Will support integration of the Universal Battery Charger on HMMWV platforms.			
Title: Soldier Power Test and Evaluation ***Description:*** Integration testing and annual testing and evaluation events ***FY 2016 Plans:*** Will conduct development testing (DT) and evaluation of Soldier Power generation at the Electronic Proving Ground, Arizona, and Aberdeen Proving Ground, Maryland. Will conduct user assessments, verification and operational test (OT) events and evaluations at Fort Devens Massachusetts and Fort Bliss, Texas. Will complete test requirements necessary to satisfy Milestone C/ Full Rate production requirements for the Integrated Soldier Power/Data system (ISPDS), the Squad Power Manager (SPM), the Conformal Wearable Battery (CWB), and the Universal Battery Charger (UBC). Will test and validate new battery chemistries and interfaces with the existing power charging solutions within Small Unit Power. Will integrate and test new radios, GPS devices, and other power consuming systems for compatibility with the Soldier Power equipment. Will test the Universal Battery Chargers (UBC) on the Armored Multi-purpose Vehicle (AMPV) platform. ***FY 2017 Plans:*** Will conduct developmental testing to support Milestone C/Full Rate production requirements for Soldier Power Generation and user evaluations at the Joint Infantry Company Prototype (JIC-P) event hosted by the Navy in 2QFY17. Will test and validate new battery chemistries and interfaces with the existing power charging solutions within Small Unit Power. Will test the integration of the Universal Battery charger on HMMWV platforms.	-	0.609	1.404
Title: Platoon Power Generator (PPG) - PM E2S2 ***Description:*** Prepare for award and manage an EMD phase R&D contract for the PPG. ***FY 2016 Plans:*** Award EMD contract and fund applicable functional support agreements. ***FY 2017 Plans:***	-	3.320	2.254

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue EMD contract: fund applicable functional support agreements and MIPRs; prepare documentation and vendor for Milestone C and production, respectively.			
Accomplishments/Planned Programs Subtotals	-	5.411	11.642

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• R80010000: *Small Unit Power Increment*	-	38.639	30.380	-	30.380	42.650	40.907	47.730	48.622	Continuing	Continuing

Remarks

D. Acquisition Strategy

Soldier and Small Unit Power

Pursue a variety of Soldier power initiatives under full and open competition. These initiatives range from Commercial-Off-The-Shelf (COTS) solutions to developmental efforts. The type of solicitation depends on the maturity of the technology. The power initiatives will be evaluated through scheduled test and evaluation events, and if successful, selected for procurement and subsequent fielding and sustainment. The acquisition strategy varies by product. For example, the SPM acquisition strategy will consist of two phases: Phase one includes the purchase of test articles using the Defense Logistics Agency (DLA) Special Operational (Spec Ops) Equipment Tailored Logistic Support Program (TLSP). Phase two includes the procurement of additional test articles through Indefinite Delivery Indefinite Quantity (IDIQ) contracts established through the Army Contracting Command (ACC). The Project Manager office will establish IDIQ contracts to support the SUP requirements over time. Each SUP system will be procured under purchase orders for production quantities that will be awarded on a Firm Fixed Price (FFP) contract.

PEO CS/CSS Effort on the Platoon Power Generation - PM E2S2:

Full and open competitive acquisition will be conducted culminating in an award of up to two (2) Cost Plus Incentive Fee (CPIF) contracts supporting a 24 month Engineering and Manufacturing Development (EMD) phase. Two selected contractors will be awarded EMD contracts and will separately perform a 15 month effort (Phase I) to fabricate and produce the minimum order of 10 SUP PPG (1kW Generator) systems (5 per vendor). Phase I will be followed by a down-select evaluation to choose the manufacturer that could produce the best value system. During Phase II, selected vendor will produce 5 additional systems to undergo developmental test (DT), a logistics demonstration (LD), pre-production qualification test, and limited user / operational test (LUT/OT). Upon successful completion of these tests and completion of logistics supportability, the performance data and Soldier's feedback will be utilized in preparation for Milestone C (MS C).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM integration and oversight	MIPR	Various : Various	3.105	-		0.237		1.936		-		1.936	Continuing	Continuing	Continuing
		Subtotal	3.105	-		0.237		1.936		-		1.936	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Soldier Power Development and Integration	TBD	TBD : TBD	11.878	-		1.002		5.552		-		5.552	Continuing	Continuing	Continuing
Platoon Power Generation	C/CPIF	TBD : TBD	0.000	-		2.500		1.500		-		1.500	1.500	5.500	0
		Subtotal	11.878	-		3.502		7.052		-		7.052	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Martix Support	MIPR	ARL, CERDEC, Various : Various	2.340	-		0.243		0.496		-		0.496	Continuing	Continuing	Continuing
Platoon Power Generation	IA	TBD : TBD	0.000	-		0.820		0.534		-		0.534	0.600	1.954	0
		Subtotal	2.340	-		1.063		1.030		-		1.030	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various Testing Organizations	MIPR	Various : Various	0.720	-		0.609		1.404		-		1.404	Continuing	Continuing	Continuing
Platoon Power Generation	MIPR	TBD : TBD	0.000	-		-		0.220		-		0.220	0.220	0.440	0

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.720	-		0.609		1.624		-		1.624	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.043	-		5.411		11.642		-		11.642	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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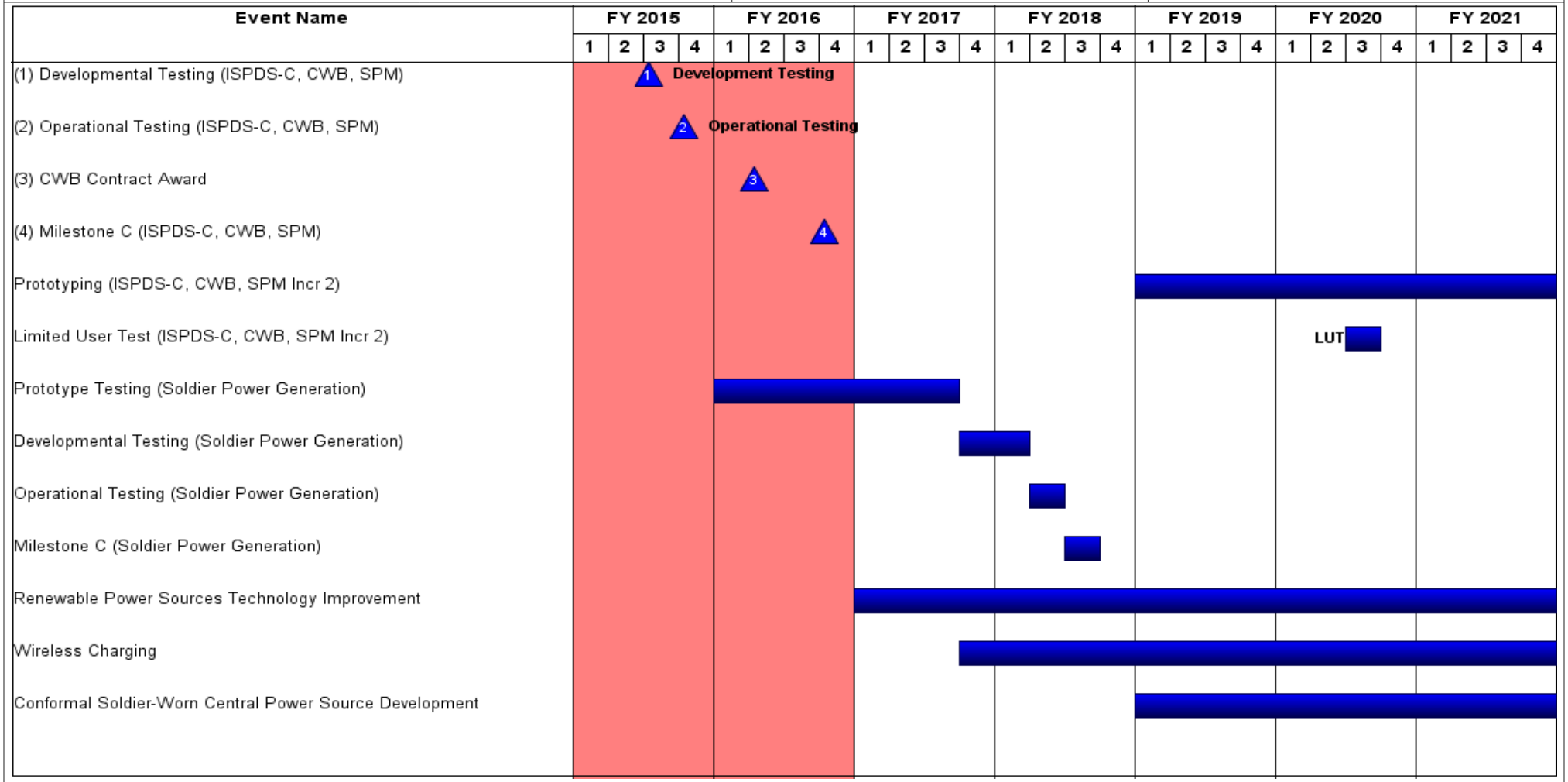

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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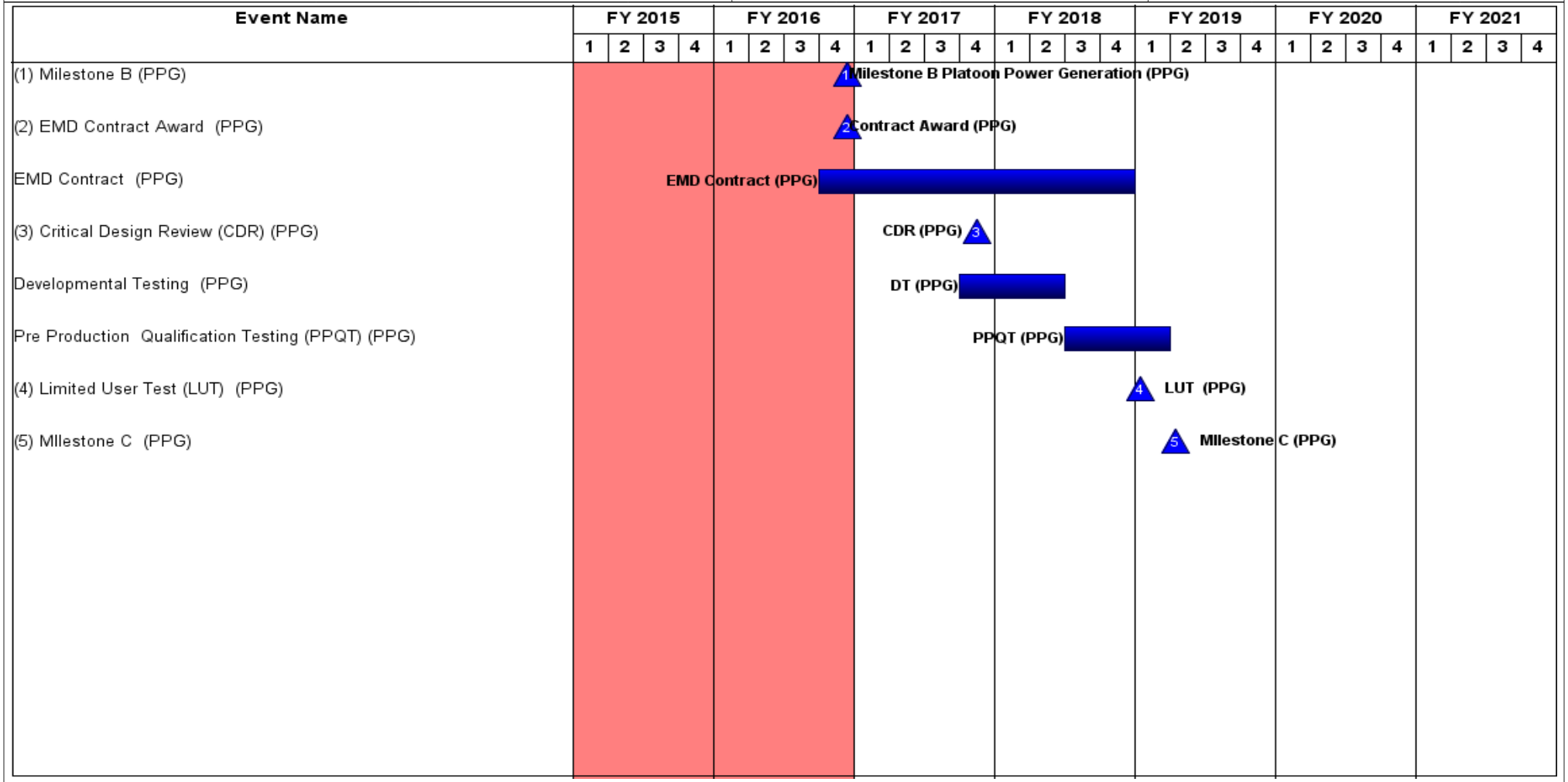

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Developmental Testing (ISPDS-C, CWB, SPM)	3	2015	4	2015
Operational Testing (ISPDS-C, CWB, SPM)	4	2015	1	2016
CWB Contract Award	2	2016	2	2016
Milestone C (ISPDS-C, CWB, SPM)	4	2016	4	2016
Prototyping (ISPDS-C, CWB, SPM Incr 2)	1	2019	4	2021
Limited User Test (ISPDS-C, CWB, SPM Incr 2)	3	2020	3	2020
Prototype Testing (Soldier Power Generation)	1	2016	3	2017
Developmental Testing (Soldier Power Generation)	4	2017	1	2018
Operational Testing (Soldier Power Generation)	2	2018	2	2018
Milestone C (Soldier Power Generation)	3	2018	3	2018
Renewable Power Sources Technology Improvement	1	2017	4	2021
Wireless Charging	4	2017	4	2021
Conformal Soldier-Worn Central Power Source Development	1	2019	4	2021
Milestone B (PPG)	4	2016	4	2016
EMD Contract Award (PPG)	4	2016	4	2016
EMD Contract (PPG)	4	2016	4	2018
Critical Design Review (CDR) (PPG)	4	2017	4	2017
Developmental Testing (PPG)	4	2017	2	2018
Pre Production Qualification Testing (PPQT) (PPG)	3	2018	1	2019
Limited User Test (LUT) (PPG)	1	2019	1	2019
MIlestone C (PPG)	2	2019	2	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604827A / *Soldier Systems - Warrior Dem/Val*	Project (Number/Name) S75 / *Ground Soldier Ensemble*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
S75: *Ground Soldier Ensemble*	-	5.055	12.431	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Nett Warrior (NW) Program (named in honor of Medal of Honor recipient Colonel Robert C. Nett), also known as the Ground Soldier System (GSS) Program, leverages commercial smart devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW system also provides the same integrated mission command capability to the tactical vehicle-mounted leaders so that when dismounted, the leader still maintains the common operating picture (COP) and has continuous situational awareness. This capability provides unparalleled situational awareness and enhanced communications to the dismounted leader allowing for faster, more accurate decisions and reduced fratricide in the tactical fight. Includes integration and interface of products on Soldiers.

The continued development and integration of the NW program also integrates applications from other programs aimed at considerably reducing the weight and bulk of the dismounted Soldier's load by using a single End User Device. The NW program harnesses Soldiers' experience in combat operations and employs combat veterans for Soldier feedback enhancing human factors design and fightability of the system. This project funds the following: 1) Incorporation of additional new hardware applications and capabilities into Nett Warrior, 2) Yearly developmental and operational tests of the NW with continually advancing commercial smart device technology inserted, 3) Software development for planned updates, 4) Integration of new End User Devices with the existing and re-competed Army Tactical Radios, including vehicle power integration, 5) Government led integration and system engineering and program management, and 6) Conduct NW Operational Test and Evaluation with Mechanized and Infantry units in FY16/17.

NOTE: Beginning in FY17, funding for Nett Warrior was realigned to 0604818A (Army Tactical Command & Control Hardware & Software)/Project EQ8 (Mobile/ Handheld Computing Environment). Under this realignment Nett Warrior will continue to integrate, conduct developmental and operational test, etc. as stated above.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Test and Evaluation including twice a year Network Integration Evaluation (NIE) to gain Soldier feedback	1.292	2.596	-
Description: Funding is provided for the following efforts.			
FY 2015 Accomplishments: Conducted NW test and evaluation for technical verification at developmental events and user verification including Initial Operational Test & Evaluation (IOT&E) in support of an additional Low Rate Initial Production (LRIP) Decision. Continued support for NW as a baseline NIE system including: Brigade level support, equipping, training, test costs, and spares for NW; yearly			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604827A / *Soldier Systems - Warrior Dem/Val*	**Project (Number/Name)** S75 / *Ground Soldier Ensemble*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Army Interoperability Certification testing; environmental testing; information assurance penetration prevention testing for new commercial smart devices, NW software and accessories. ***FY 2016 Plans:*** Will continue NW test and evaluation, along with 3rd party applications, for technical verification at developmental events and user verification to include new dismounted Soldier hardware and new Full and Open Competition (FOC) Rifleman Radios from PEO C3T. Support NW as a baseline NIE and Army Warfighting Assessment (AWA) system including: Brigade level support, equipping, training, test costs, and spares for NW; yearly Army Interoperability Certification; environmental testing; electronic warfare testing; and Information Assurance penetration prevention testing for new commercial smart devices, NW software and accessories. Also test emerging secure 4G/LTE Army tactical networks.			
Title: Hardware and Software Integration and Evaluation for Capability Improvements ***Description:*** Funding is provided for the following efforts. ***FY 2015 Accomplishments:*** Acquired, integrated and evaluated low cost, commercial smart devices, cables, and other hardware for potential addition into the NW system of proven and mature capabilities. Integrated 3rd party software combat applications to keep pace with emerging technology and inform the acquisition decision process as to yearly Army Capability Set insertion. ***FY 2016 Plans:*** Integrate and evaluate emerging advanced commercial smart devices, cables, and other hardware including unmanned sensor systems for potential adoption into the NW system. Integrate new PEO C3T FOC rifleman radios with NW from the 2015 Rifleman Radio procurement contract award. Will continue to integrate 3rd party software combat applications for increased functionality to keep pace with emerging technology, lower cost and weight, and inform the future acquisition decision process as to yearly Army Capability Set insertion. Continue to integrate tactical 4G/LTE capability with NW, to include accreditation via the NSA's Commercial Solutions for Classified (CSFC) process.	1.244	5.004	-
Title: Software Development and Integration ***Description:*** Funding is provided for the following efforts. ***FY 2015 Accomplishments:*** Developed the initial release of the Nett Warrior Software Development Kit (SDK) products for use on commercial NW smart device hardware to reduce application integration time for third party app developers. Integrated applications to expand Nett Warrior capabilities to meet other Army requirements using a common smart device. Maintained software updates and changes	2.082	2.491	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604827A / *Soldier Systems - Warrior Dem/Val*	**Project (Number/Name)** S75 / *Ground Soldier Ensemble*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
for NW program to keep pace with Army software capability updates, maintain information assurance accreditation, and retain interoperability certification for Army Capability Sets. ***FY 2016 Plans:*** Will continue to integrate NW capabilities, radio drivers, other Army required applications via the Nett Warrior software development kit. Expanding capabilities to meet Army, Special Forces and Army Mobile / Handheld Computer Environment (M/HHCE) requirements, retain interoperability certification for Army Capability Sets, information assurance accreditation, and complete required AIC testing for latest NW software baseline.			
Title: Integration with AN/PRC-154A and Vehicle Platforms ***Description:*** Funding is provided for the following efforts. ***FY 2016 Plans:*** Integrate new commercial smart devices with competitively procured FOC Rifleman Radio AN/PRC-154A Radio from PEO C3T in preparation for planned FOT&E in FY17. Will conduct integration and testing of Army secure tactical 4G/LTE with NW.	-	1.412	-
Title: Conduct Systems Engineering and Program Management Support to Nett Warrior ***Description:*** Funding is provided for the following efforts. ***FY 2015 Accomplishments:*** Continued to conduct government systems engineering and program management support for NW program including documentation preparation for an additional Low Rate Initial Production (LRIP) decision in May 2015. Collected input from Soldiers at semi-annual NIE events to improve NW size, weight, power, fightability, safety and effectiveness via surveys and electronic data monitoring from Developmental and Operational Testing (DT/OT) events. ***FY 2016 Plans:*** Will continue to conduct government systems / software engineering and program management support for NW program. Will collect input from Soldiers to improve NW size, weight, power, fightability, safety and effectiveness via surveys. Will manage system configuration, and execute test, development and integration planning including investigation and analysis of emerging innovative commercial technologies to lower the size, weight, power, cost and increase Nett Warrior functionality.	0.437	0.928	-
Accomplishments/Planned Programs Subtotals	5.055	12.431	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604827A / *Soldier Systems - Warrior Dem/Val*	**Project (Number/Name)** S75 / *Ground Soldier Ensemble*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPA 3, R80501: *OPA 3, R80501, Ground Soldier System*	71.761	49.798	32.814	-	32.814	36.553	36.886	37.833	37.926	Continuing	Continuing
• RDT&E, PE 0604818A EQ8: *RDT&E, PE 0604818A EQ8 Army Tactical Command & Control Hardware & Software*	-	-	10.563	-	10.563	10.822	10.898	11.068	11.352	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Nett Warrior (NW) program provides unparalleled situational awareness and mission command to dismounted combat leaders through a secure commercial smart device, power source, cables and tactical radio. The NW is focused on Team Leader and higher echelons and provides an integrated secure information-centric Commercial-Off-The Shelf (COTS) mobile application-based computation platform with data collection, enhanced SA, mission planning, and navigational aid functions overlaid on geo-referenced maps and high resolution imagery throughout a brigade. The NW enables real-time ground tactical-level knowledge sharing and command and control (C2), directly impacting combat effectiveness and decision-making. The NW also improves lower echelon intelligence production and analysis capabilities which are central to efficient and effective counter-insurgency warfare. NW program completed LRIP/MS C in 2012 followed by two LRIP decisions in 2013-14 in preparation for IOT&E under DOT&E oversight in 4QFY14-1QFY15. This IOT&E event lead to an additional NW Low Rate Initial Production (LRIP) decision in 2015 and a Full Rate Production Decision is planned for mid FY17. From this decision NW will complete annual production and fielding events based on yearly development, integration and testing of emerging advanced smart devices to lower cost, weigh and power. To capitalize on commercial industry's investment in advanced smart device technology as well as innovation and changes within Army, NW requires annual RDT&E funding for integration and evaluation. Through this process and at low cost, the Army is able to integrate and evaluate for combat utility the hundreds of millions spent in product development by the major commercial device manufactures.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604827A / *Soldier Systems - Warrior Dem/Val*	Project (Number/Name) S75 / *Ground Soldier Ensemble*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware and software integration and evaluation	Various	Various : Various	21.801	1.244		5.004		-		-		-	Continuing	Continuing	Continuing
Systems Engineering and program management support	Various	Various : Various	23.110	0.437		0.928		-		-		-	Continuing	Continuing	Continuing
		Subtotal	44.911	1.681		5.932		-		-		-	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration with Project Manager Tactical Radios and Vehicle Platforms	Various	Various : Various	2.061	-		1.412		-		-		-	Continuing	Continuing	Continuing
		Subtotal	2.061	-		1.412		-		-		-	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Integration	Various	Various : Various	10.517	2.082		2.491		-		-		-	Continuing	Continuing	Continuing
		Subtotal	10.517	2.082		2.491		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various Testing Organizations	Various	Various : Various	22.029	1.292		2.596		-		-		-	Continuing	Continuing	Continuing
		Subtotal	22.029	1.292		2.596		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604827A / *Soldier Systems - Warrior Dem/Val*	Project (Number/Name) S75 / *Ground Soldier Ensemble*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	79.518	5.055		12.431		-		-		-	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604827A / *Soldier Systems - Warrior Dem/Val*	**Project (Number/Name)** S75 / *Ground Soldier Ensemble*

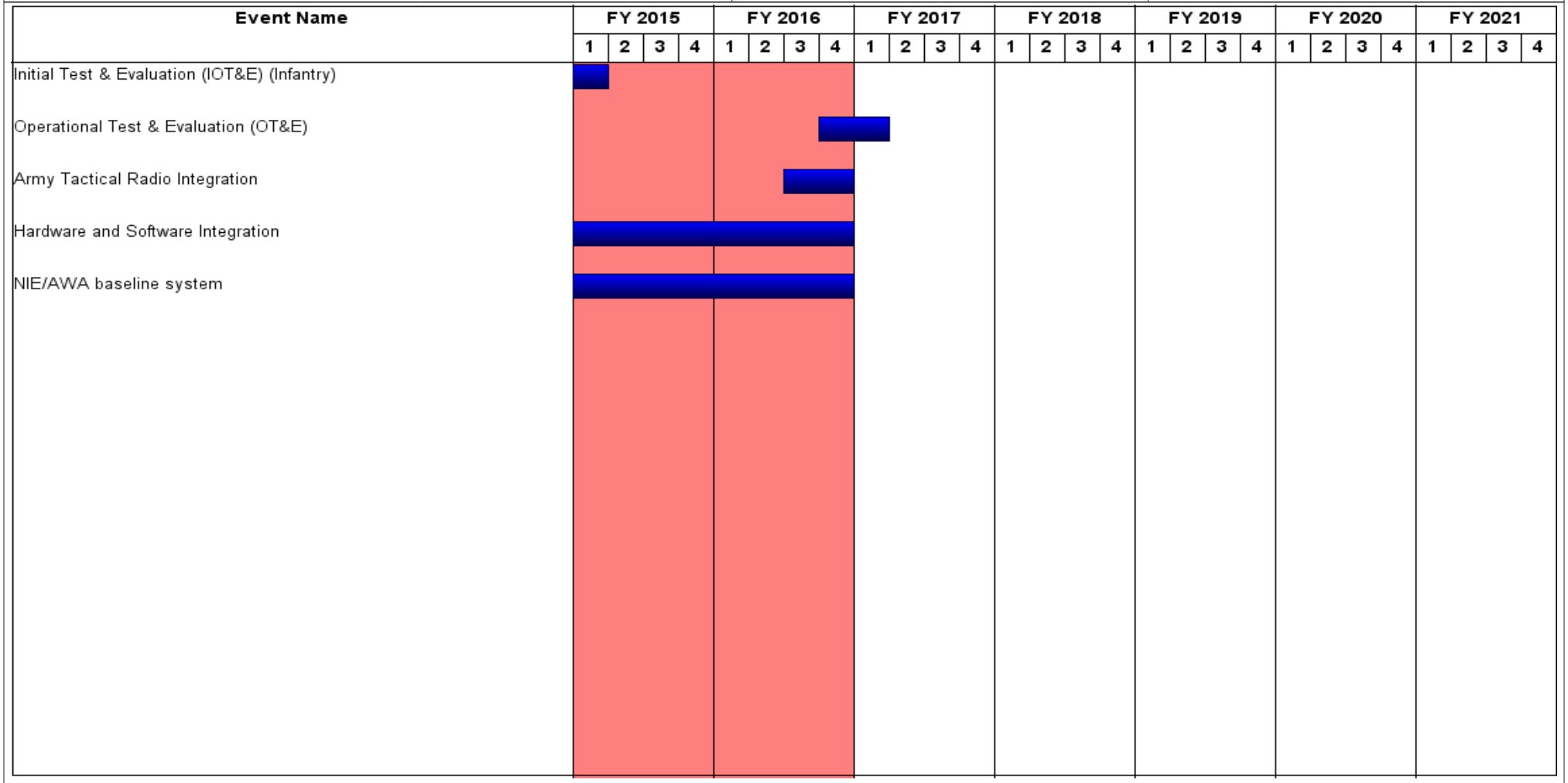

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604827A / *Soldier Systems - Warrior Dem/Val*	**Project (Number/Name)** S75 / *Ground Soldier Ensemble*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initial Test & Evaluation (IOT&E) (Infantry)	1	2015	1	2015
Operational Test & Evaluation (OT&E)	4	2016	1	2017
Army Tactical Radio Integration	3	2016	4	2016
Hardware and Software Integration	1	2015	4	2016
NIE/AWA baseline system	1	2015	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604854A *I Artillery Systems - EMD*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.838	1.953	1.756	-	1.756	1.800	2.155	6.998	8.754	Continuing	Continuing
509: *LIGHTWEIGHT 155M HOWITZER*	-	1.838	1.953	1.756	-	1.756	1.800	2.155	6.998	8.754	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Lightweight 155mm Howitzer (LW155), also known as the M777A2, provides direct, reinforcing, general support fires to maneuver forces and direct support artillery. It replaces all howitzers in all missions in the USMC and replaces the M198 howitzer as the general support artillery for light forces in the Army. The LW155 fires unassisted projectiles to a range of 15 miles and assisted projectiles to 19 miles. The addition of the digital fire control system enables the weapon to program and fire the improved Excalibur precision-guided munitions to ranges in excess of 25 miles with better than 10-meter Circular Error Probable (CEP) accuracy. The LW155 is the first ground combat system whose major structures are made of high strength titanium alloy and the system makes extensive use of hydraulics to operate the breech, load tray, recoil and wheel arms. The combination of titanium structures and the use of hydraulic systems resulted in a significant weight savings of 7000 lbs over the M198 system. Compared to the M198, the LW155 emplaces three-times faster and displaces four-times faster. It traverses 32 percent more terrain worldwide and is 70 percent more survivable than the M198. It is a successful joint service program between the Marine Corps and Army working together to develop, produce, field, and sustain the howitzer. The LW155 was first introduced into the Marine Corps in April 2005 and the Marines have now fielded the howitzer to all active units. The Army has fielded the howitzer to its Stryker Brigade Combat teams (SBCT), Fires Brigades and National Guard. Fielding of the Infantry Brigade Combat Teams (IBCT) commenced in FY14 and will continue through 2018. The LW155 saw extensive action in Afghanistan, receiving high marks for its performance. Having now been in the field for almost 10 years, the howitzer will be going through obsolescent replacement of electronic components in its digital fire control system.

Funding supports engineering studies for capabilities identified in the Joint U.S. Army, U.S. Marine Corps Operational Requirements Document (JORD) for the Advanced Towed Cannon System but deferred during Engineering Manufacturing and Development due to technology maturity, cost and schedule as well as government sustainment activities requiring RDTE. This includes a digital direct fire sight for the Digital Fire Control System; low temperature, high density power solutions; and electric elevation drives and auto loader to achieve full operational requirements. Efforts in FY2015-FY2018 center on researching technical solutions while efforts in FY2019-FY2021 will involve developing technology demonstrator prototypes.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0604854A / *Artillery Systems - EMD*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	1.911	1.953	1.973	-	1.973
Current President's Budget	1.838	1.953	1.756	-	1.756
Total Adjustments	-0.073	0.000	-0.217	-	-0.217
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.073	-			
• Adjustments to Budget Years	-	-	-0.217	-	-0.217

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604854A / *Artillery Systems - EMD*	Project (Number/Name) 509 / *LIGHTWEIGHT 155M HOWITZER*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
509: *LIGHTWEIGHT 155M HOWITZER*	-	1.838	1.953	1.756	-	1.756	1.800	2.155	6.998	8.754	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Lightweight 155mm (LW155) Towed Howitzer is a jointly managed program with the Marine Corps.

A. Mission Description and Budget Item Justification

The Lightweight 155mm Howitzer (LW155), also known as the M777A2, provides direct, reinforcing, general support fires to maneuver forces and direct support artillery. It replaces all howitzers in all missions in the USMC and replaces the M198 howitzer as the general support artillery for light forces in the Army. The LW155 fires unassisted projectiles to a range of 15 miles and assisted projectiles to 19 miles. The addition of the digital fire control system enables the weapon to program and fire the improved Excalibur precision-guided munitions to ranges in excess of 25 miles with better than 10-meter Circular Error Probable (CEP) accuracy. The LW155 is the first ground combat system whose major structures are made of high strength titanium alloy and the system makes extensive use of hydraulics to operate the breech, load tray, recoil and wheel arms. The combination of titanium structures and the use of hydraulic systems resulted in a significant weight savings of 7000 lbs over the M198 system. Compared to the M198, the LW155 emplaces three-times faster and displaces four-times faster. It traverses 32 percent more terrain worldwide and is 70 percent more survivable than the M198. It is a successful joint service program between the Marine Corps and Army working together to develop, produce, field, and sustain the howitzer. The LW155 was first introduced into the Marine Corps in April 2005 and the Marines have now fielded the howitzer to all active units. The Army has fielded the howitzer to its Stryker Brigade Combat teams (SBCT), Fires Brigades and National Guard. Fielding of the Infantry Brigade Combat Teams (IBCT) commenced in FY14 and will continue through 2018. The LW155 has seen extensive action in Afghanistan, receiving high marks for its performance. Having now been in the field for almost 10 years, the howitzer will be going through obsolescent replacement of electronic components in its digital fire control system.

Funding supports engineering studies for capabilities identified in the Joint U.S. Army, U.S. Marine Corps Operational Requirements Document (JORD) for the Advanced Towed Cannon System but deferred during Engineering Manufacturing and Development due to technology maturity, cost and schedule as well as government sustainment activities requiring RDTE. This includes a digital direct fire sight for the Digital Fire Control System; low temperature, high density power solutions; electric elevation drives and auto loader to achieve full operational requirements; and extended range and mobility concepts. Efforts in FY2015-FY2018 center on researching technical solutions while efforts in FY2019-FY2021 will involve developing technology demonstrator prototypes.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management Services	0.194	0.197	0.199
Description: Funding supports management services within the Program Management Office, Towed Artillery Systems			
FY 2015 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604854A / *Artillery Systems - EMD*	**Project (Number/Name)** 509 / *LIGHTWEIGHT 155M HOWITZER*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Funding supported management and coordination with the Armaments Research Development and Engineering Center to conduct trade studies to determine the best material solution for the digital direct fire sight and low temperature, high density power solutions. ***FY 2016 Plans:*** Funding supports management and coordination with the Armaments Research Development and Engineering Center to conduct modeling, simulation, analysis and trade studies to characterize the M777A2 for performance improvements. The data generated from these efforts will be used to establish a database to support future technology demonstrations focused on achieving current JORD objective capabilities as well as Force 2025 and Beyond Initiatives. ***FY 2017 Plans:*** Funding supports management and coordination with the Armaments Research Development and Engineering Center to conduct modeling, simulation, analysis and trade studies to characterize the M777A2 for performance improvements. The data generated from these efforts will be used to establish a database to support future technology demonstrations focused on achieving current JORD objective capabilities as well as Force 2025 and Beyond Initiatives.			
Title: Product Development ***Description:*** Funds engineering support from the Armaments Research Development and Engineering Center ***FY 2015 Accomplishments:*** Funding supported conduct of trade studies to determine the best material solution for digital direct fire sight for the Digital Fire Control System and low temperature, high density power solutions to achieve full operational requirements. ***FY 2016 Plans:*** Funding will support continued modeling, simulation, and analysis to characterize the objective M777A2 extended range design, analysis, and drawings. Continues XM907 common cannon assembly support. ***FY 2017 Plans:*** Funding will support continued modeling, simulation, and analysis to characterize the objective M777A2 extended range design, analysis, and drawings. Continues XM907 common cannon assembly support.	1.644	1.756	1.557
Accomplishments/Planned Programs Subtotals	1.838	1.953	1.756

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604854A / *Artillery Systems - EMD*	**Project (Number/Name)** 509 / *LIGHTWEIGHT 155M HOWITZER*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• M777 Mods: *M777 Mods - Modification of Weapons and Other Combat Vehicles SSN GZ1700*	18.166	10.070	11.913	-	11.913	3.553	3.973	3.201	13.290	Continuing	Continuing

Remarks

Procurement Funding supports active retrofits and hardware refresh for previously contracted Digital Fire Control System components, addressing obsolescence.

D. Acquisition Strategy

This will be a collaborative effort between the Program Management Office, Towed Artillery Systems, and the Armaments Research Development and Engineering Center at Picatinny Arsenal.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604854A / *Artillery Systems - EMD*	Project (Number/Name) 509 / *LIGHTWEIGHT 155M HOWITZER*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Sub Allot	Program Management Towed Artillery Systems : Picatinny Arsenal, NJ	0.000	0.194	Feb 2015	0.197	Feb 2016	0.199	Feb 2017	-		0.199	Continuing	Continuing	Continuing
		Subtotal	0.000	0.194		0.197		0.199		-		0.199	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	Armaments Research & Developmet Center : Picatinny Arsenal, NJ	0.000	1.644	Feb 2015	1.756	Feb 2016	1.557	Feb 2017	-		1.557	Continuing	Continuing	Continuing
		Subtotal	0.000	1.644		1.756		1.557		-		1.557	-	-	-

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	1.838		1.953		1.756		-		1.756	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604854A / *Artillery Systems - EMD*	**Project (Number/Name)** 509 / *LIGHTWEIGHT 155M HOWITZER*

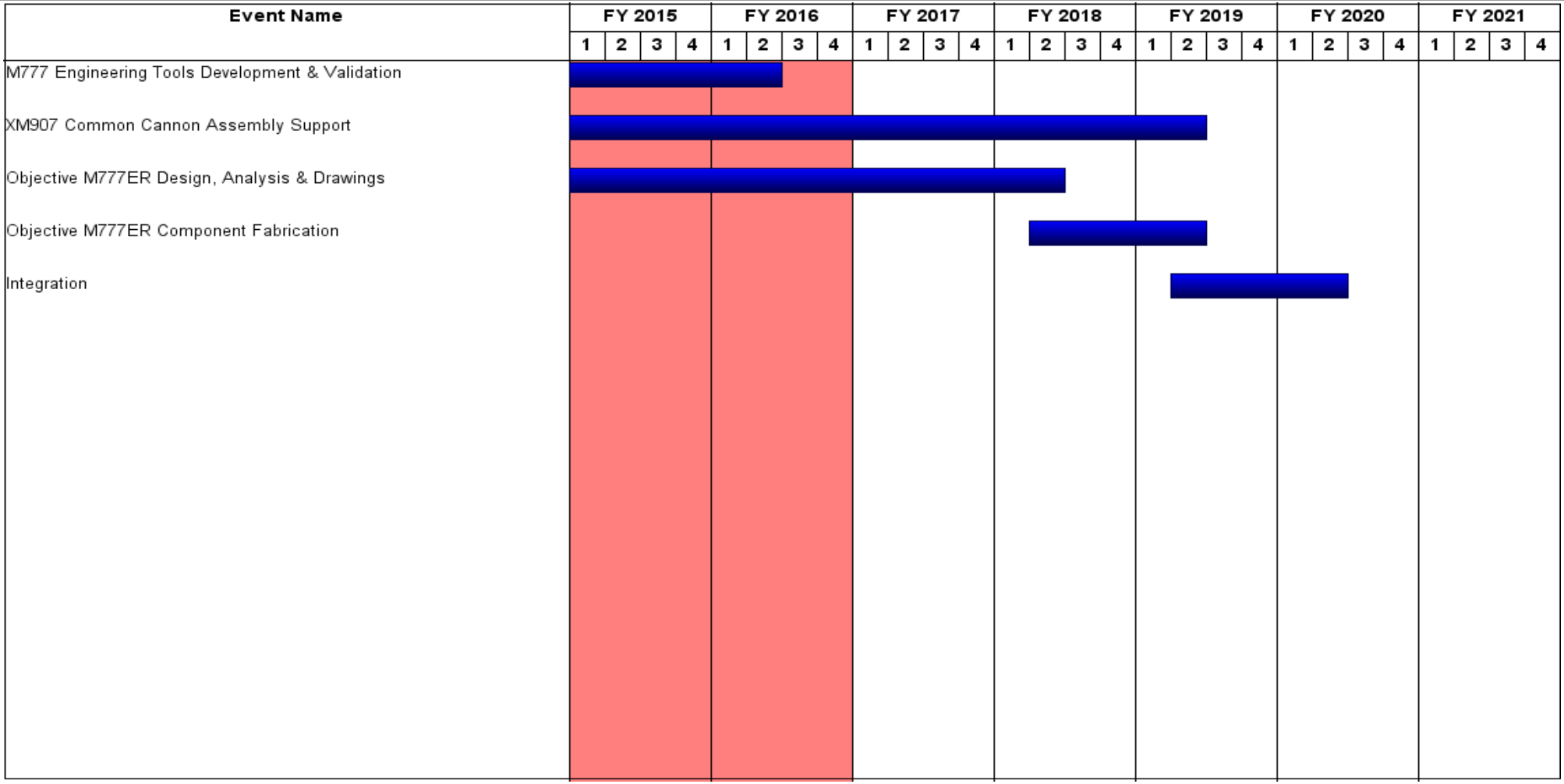

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604854A / *Artillery Systems - EMD*	**Project (Number/Name)** 509 / *LIGHTWEIGHT 155M HOWITZER*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
M777 Engineering Tools Development & Validation	1	2015	2	2016
XM907 Common Cannon Assembly Support	1	2015	2	2019
Objective M777ER Design, Analysis & Drawings	1	2015	2	2018
Objective M777ER Component Fabrication	2	2018	2	2019
Integration	2	2019	2	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	64.982	60.358	74.236	-	74.236	76.906	55.127	48.422	44.696	Continuing	Continuing
099: *Army Human Resource System*	-	1.519	0.289	5.180	-	5.180	4.479	0.956	0.966	0.987	Continuing	Continuing
184: *Installation Support Modules*	-	0.734	0.907	1.254	-	1.254	1.343	1.354	1.362	1.268	Continuing	Continuing
193: *Medical Communications For Combat Casualty*	-	1.409	4.611	1.207	-	1.207	0.390	0.000	0.000	0.000	0.000	7.617
738: *AcqBiz*	-	7.444	10.454	8.737	-	8.737	4.634	4.588	5.105	4.996	Continuing	Continuing
T04: *USMEPCOM TRANSFORMTION - IT MODERNIZATION*	-	14.839	20.847	29.281	-	29.281	31.143	20.160	13.789	8.226	0.000	138.285
T05: *Army Business System Modernization Initiatives*	-	39.037	23.250	28.577	-	28.577	34.917	28.069	27.200	29.219	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program supports efforts to plan, design, develop, and test information technology solutions to fulfill the Army's Warfighter Support Mission and accommodate changing Army requirements while fulfilling future Army needs. Provides for development and acquisition of Combat Service Support (CSS) and business information technology solutions to help arm, sustain, fix, move, train and man the force. Completed development/acquisition efforts will also enhance sustaining base functions and power projection capabilities and facilitate global messaging and electronic data interchange (EDI). Ongoing development efforts support multiple functional areas including logistics, personnel, transportation, training, medical/health protection, and the sustaining base.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605013A *I Information Technology Development*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	69.728	67.358	106.070	-	106.070
Current President's Budget	64.982	60.358	74.236	-	74.236
Total Adjustments	-4.746	-7.000	-31.834	-	-31.834
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Underexecution Adjustment	-4.746	-	-	-	-
• Other Adjustments 2	-	-7.000	-31.834	-	-31.834

Change Summary Explanation

FY 2017 funding adjustment reflects reduced requirements for the AcqBiz and Business Systems Modernization efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 099 / *Army Human Resource System*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
099: *Army Human Resource System*	-	1.519	0.289	5.180	-	5.180	4.479	0.956	0.966	0.987	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the Personnel Transformation - Enterprise Service Bus and GoArmy Ed.
- Personnel Transformation (PT)- Enterprise Service Bus (ESB)- The Army's Enterprise Service Bus (ESB) provides a data integration service in which data can be extracted from the legacy human resource systems and transferred to DIMHRS. The ESB will be a middleware application which will provide a single interface to and from DIMHRS from the Army Legacy Systems. The ESB will provide the infrastructure for the integration of new and existing applications by allowing systems and applications to easily exchange information across different environments and platforms. It will also form the information bridge between IPPS-A, the Army Legacy Systems, and external systems to create more streamlined systems in support of the military mission and personnel transformation goals.

- GoArmyEd is an Army Continuing Education System (ACES) program that provides the virtual gateway for soldiers to request Tuition Assistance (TA) and DA civilians to request training funds online, anytime for classroom, distance learning, and online college courses. GoArmyEd is a dynamic online portal that automates many of the paper-based processes historically conducted in-person at Army Education Centers. GoArmyEd includes automated registration tools that enforce TA policies and procedures. GoArmyED is used by authorized users to pursue their post secondary educational goals: Army Education Counselors to provide educational guidance; CPMS and TMs to manage civilian training and Colleges to deliver degree and course offerings and to report user progress.

Modernization initiatives address continued improvements related to the integration of new users and decreasing reliance on the help desk. GoArmyEd is the Army's enterprise education solution. GoArmyEd has integrated the Reserve Component (USAR and National Guard) and the Department of the Army Civilians. In addition, GoArmyEd is working to add a new data warehouse for HQ data retrieval and user self help tools. Education benefits are paramount to recruiting and retention of quality Soldiers, Civilians and Families.

Army Human Resource Systems (AHRS) continued to provide the Warfighter with state of art standardized systems that assist the Combatant Commander sustain, train, equip, deploy and account for personnel in and out of Theater. Systems include the emerging Commanders' Risk Reduction Dashboard, Deployed Theater Accountability System, Range Facility Maint Support Systen and the electronic Military Personnel System.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: AHRS	1.519	0.289	-
Description: Funding will support continued enhancement/automation of the software functionality.			
FY 2015 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 099 / *Army Human Resource System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
GoArmy Ed will add functionality, continue automation of manual business processes, and add a virtual self help tool. ***FY 2016 Plans:*** GoArmy Ed will add functionality, continue automation of manual business processes, and add a virtual self help tool.			
Title: CRRD ***Description:*** Commanders Risk Reduction Dashboard will consolidate information from multiple Army databases and present to commanders a concise report about which soldiers in their units have been involved with at-risk behaviors, some of which may be associated with suicide, and when those instances occurred. ***FY 2017 Plans:*** Commanders Risk Reduction Dashboard will consolidate information from multiple Army databases and present to commanders a concise report about which soldiers in their units have been involved with at-risk behaviors, some of which may be associated with suicide, and when those instances occurred.	-	-	4.676
Title: VACE ***Description:*** VACE ***FY 2017 Plans:*** VACE	-	-	0.504
Accomplishments/Planned Programs Subtotals	1.519	0.289	5.180

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• GCSS-A Inc 1: *SSN W00800*	117.524	159.262	134.827	-	134.827	31.303	2.410	3.245	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

GoArmyEd - The program manager makes extensive use of Integrated Product Teams (IPTs). Sub-elements of the acquisition (engineering and design, logistics planning, testing, etc.) are intensively managed by integrated teams of government and contractor personnel. Task performance is tracked against the Work Breakdown Structure (WBS) and resources allocated to each task are adjusted based on performance against the WBS. GoArmyEd contractual efforts are acquired on a firm fixed price basis on existing contractual vehicles.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 099 / *Army Human Resource System*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 099 / *Army Human Resource System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AHRS - ECPs/SCPs/ICPs	C/FFP	Hewlit Packard : various	89.251	-		-		-		-		-	0.000	89.251	0.000
AHRS - Software Development	C/FFP	Hewlit Packard : various	51.723	-		-		-		-		-	0.000	51.723	0.000
Go Army ED	C/FFP	IBM : Various	5.440	1.519		0.289		0.504		-		0.504	Continuing	Continuing	0
CRRD	C/FFP	PEO EIS : FT Belvoir VA	0.000	-		-		4.676		-		4.676	0	4.676	0
		Subtotal	146.414	1.519		0.289		5.180		-		5.180	-	-	0.000

Remarks

AHRS Software Development contract for CRRD FY17 is TBD; est value is $4.900 million, form is FFP. Commanders Risk Reduction Dashboard will consolidate information from multiple Army databases and present to commanders a concise report about which soldiers in their units have been involved with at-risk behaviors, some of which may be associated with suicide, and when those instances occurred.

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	146.414	1.519		0.289		5.180		-		5.180	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 099 / *Army Human Resource System*

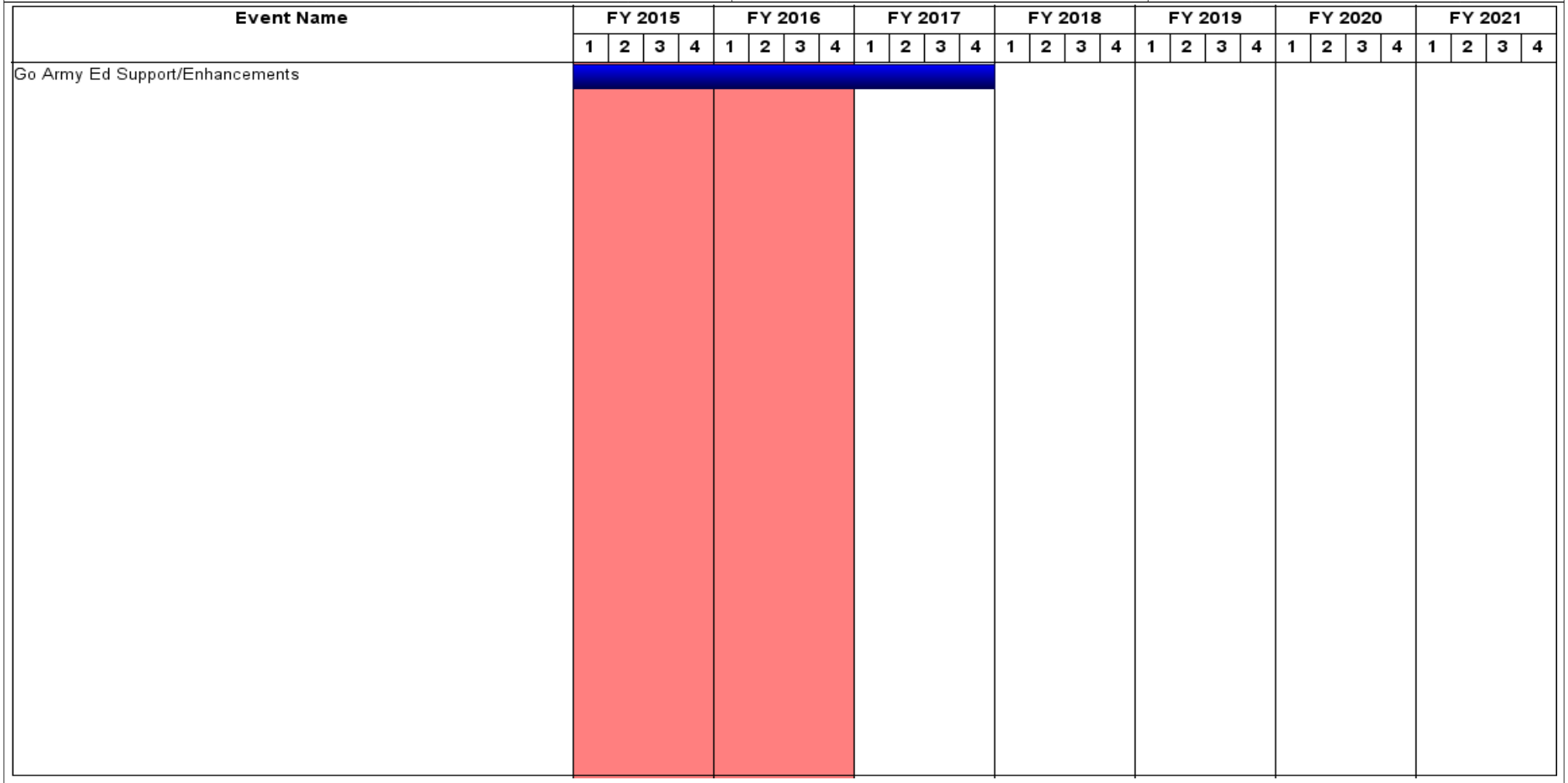

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 099 / *Army Human Resource System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Go Army Ed Support/Enhancements	1	2013	4	2017

Note

Add: Develop CRRD START 18May2015 END 30SEP2018; SUPPORT/ENHANCEMENTS START 1OCT2018 END 30SEP2025.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 184 / *Installation Support Modules*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
184: *Installation Support Modules*	-	0.734	0.907	1.254	-	1.254	1.343	1.354	1.362	1.268	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Installation Support Modules (ISM) consists of four standardized, web based, custom-developed enterprise wide applications that integrate essential installation business practices and processes throughout the Army, to meet Army Force Generation (ARFORGEN) Brigade Combat Team readiness and deployment requirements. Three modules support human resources business functions (In/Out-Processing, Transition Processing, and Personnel Locator); the fourth module, Central Issue Facility (CIF) supports management of over $9 billion combatant Organizational Clothing and Individual Equipment inventory. The web server architecture is fully internet protocol capable and allows soldiers ready access to their records and commanders and logisticians access to information affecting readiness of combat organizations.

Coalition Warfighter Interoperability Demonstration (CWID) is a mandated Joint program that requires participation by the US Army to explore near-term technologies that support Joint and Coalition Warfare Interoperability. Funding is to facilitate Coalition Force interoperability research and development and to comply with CJCSI 6230.2 date 30 April 05.

Army Behavioral Health Integrated Data Environment (ABHIDE) will be the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) Suicide Registry. Data relating to suicides and suicide attempts are collected and stored in disparate, non-related databases that cross the domains of medical, personnel and law enforcement. ABHIDE will provide the capability of integrating the non-related and dispersed data from the separate sources into a single comprehensive database to support both retrospective and predictive analysis. The information obtained will be used to conduct epidemiological surveillance, identify trends in behavior patterns and identify potential indicators for suicidal tendencies supporting the mitigation of future suicide attempts across all phases of Army service.

ISM Core funding is essential for supporting demands to research and develop improved systems to provide for soldier safety and inventory reduction without risking readiness. Funding supports research and development to comply with Dept of Defense Instruction 8320.4 Serialized Item Management. Applications to use commercial off the shelf wireless bar code equipment to ensure inventory accuracy throughout 154 warehouses in worldwide locations potentially reduces operating costs by $500.0 million.

Funding for CWID will continue to facilitate Coalition Force interoperability research and development. Funding for ABHIDE will continue development of the system.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Independent Verification and Validation (IV&V) Testing	0.031	-	-
Description: Independent Verification and Validation (IV&V) Testing			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 184 / *Installation Support Modules*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Required Independent Verification and Validation (IV&V) Testing.			
Title: Post-Deployment Software Support (PDSS) - Engineering Change Packages (ECPs)/System Change Packages (SCPs) ***Description:*** Post-Deployment Software Support (PDSS) - Engineering Change Packages (ECPs)/System Change Packages (SCPs): Develop or enhance software to meet the requirements of the soldier and installation. ***FY 2015 Accomplishments:*** Planned: testing of commercial off the shelf software for best fit to improve the use of wireless bar code equipment in Central Issue Facility warehouses. Current total inventory is over $9 billion; estimated savings by reducing the possibility of excess purchases is $500.000 million.	0.155	-	-
Title: Army Behavioral Health Integrated Data Environment ***Description:*** Army Behavioral Health Integrated Data Environment (ABHIDE) will be the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) Suicide Registry. ***FY 2015 Accomplishments:*** Army Behavioral Health Integrated Data Environment (ABHIDE) will be the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) Suicide Registry. Data relating to suicides and suicide attempts are collected and stored in disparate, non-related databases that cross the domains of medical, personnel and law enforcement. ABHIDE will provide the capability of integrating the non-related and dispersed data from the separate sources into a single comprehensive database to support both retrospective and predictive analysis. The information obtained will be used to conduct epidemiological surveillance, identify trends in behavior patterns and identify potential indicators for suicidal tendencies supporting the mitigation of future suicide attempts across all phases of Army service. ***FY 2016 Plans:*** Army Behavioral Health Integrated Data Environment (ABHIDE) will be the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) Suicide Registry. Data relating to suicides and suicide attempts are collected and stored in disparate, non-related databases that cross the domains of medical, personnel and law enforcement. ABHIDE will provide the capability of integrating the non-related and dispersed data from the separate sources into a single comprehensive database to support both retrospective and predictive analysis. The information obtained will be used to conduct epidemiological surveillance, identify trends in behavior patterns and identify potential indicators for suicidal tendencies supporting the mitigation of future suicide attempts across all phases of Army service. ***FY 2017 Plans:***	0.548	0.907	1.254

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 184 / *Installation Support Modules*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Army Behavioral Health Integrated Data Environment (ABHIDE) will be the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) Suicide Registry. Data relating to suicides and suicides attempts are collected and stored in a in disparate, non-related databases that cross the domains of medical, personnel and law enforcement. ABHIDE will provide the capability of integrating the non-related and dispersed data from the separate sources into a single comprehensive database to support both retrospective and predictive analysis. The information obtained will be used to conduct epidemiological surveillance, identify trends in behavior patterns and identify potential indicators for suicidal tendencies supporting the mitigation of future suicide attempts across all phases of Army service.			
Accomplishments/Planned Programs Subtotals	0.734	0.907	1.254

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• BE4162: *MACOM AUTOMATION SYSTEMS (BE4162)*	45.954	24.119	35.583	-	35.583	46.443	48.364	53.582	63.404	Continuing	Continuing

Remarks

D. Acquisition Strategy

Installation Support Modules is in Post Deployment Software Support (PDSS). The present concept calls for the use of full and open competition to implement enhancements as defined by the Functional Proponent, Army Chief Information Officer (CIO)/G-6. Current emphasis is to bring the ISM systems to functional readiness for transfer to an Army Data Center and virtualize the ISM systems.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 184 / *Installation Support Modules*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Behavioral Health Integrated Data Environment	C/FFP	various : various	4.162	0.548		0.907		1.254		-		1.254	Continuing	Continuing	0
Post-Deployment Solfware Support (PDSS)	C/FFP	various : various	5.875	0.186		-		-		-		-	0.000	6.061	0.000
Coalition Warfighter Interoperability Demonstration (CWID)	C/TBD	various : various	0.091	-		-		-		-		-	0	0.091	0
		Subtotal	10.128	0.734		0.907		1.254		-		1.254	-	-	0.000

Remarks

Post Deployment Software Support (PDSS) continues through 2025 as the Central issue Facility module evolves with changes in OCIE requirements.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Independent Verification and Validation (IVV) Testing	C/T&M	GDIT Corp : various	2.111	-		-		-		-		-	0.000	2.111	0.000
		Subtotal	2.111	-		-		-		-		-	0.000	2.111	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.239	0.734		0.907		1.254		-		1.254	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 184 / *Installation Support Modules*

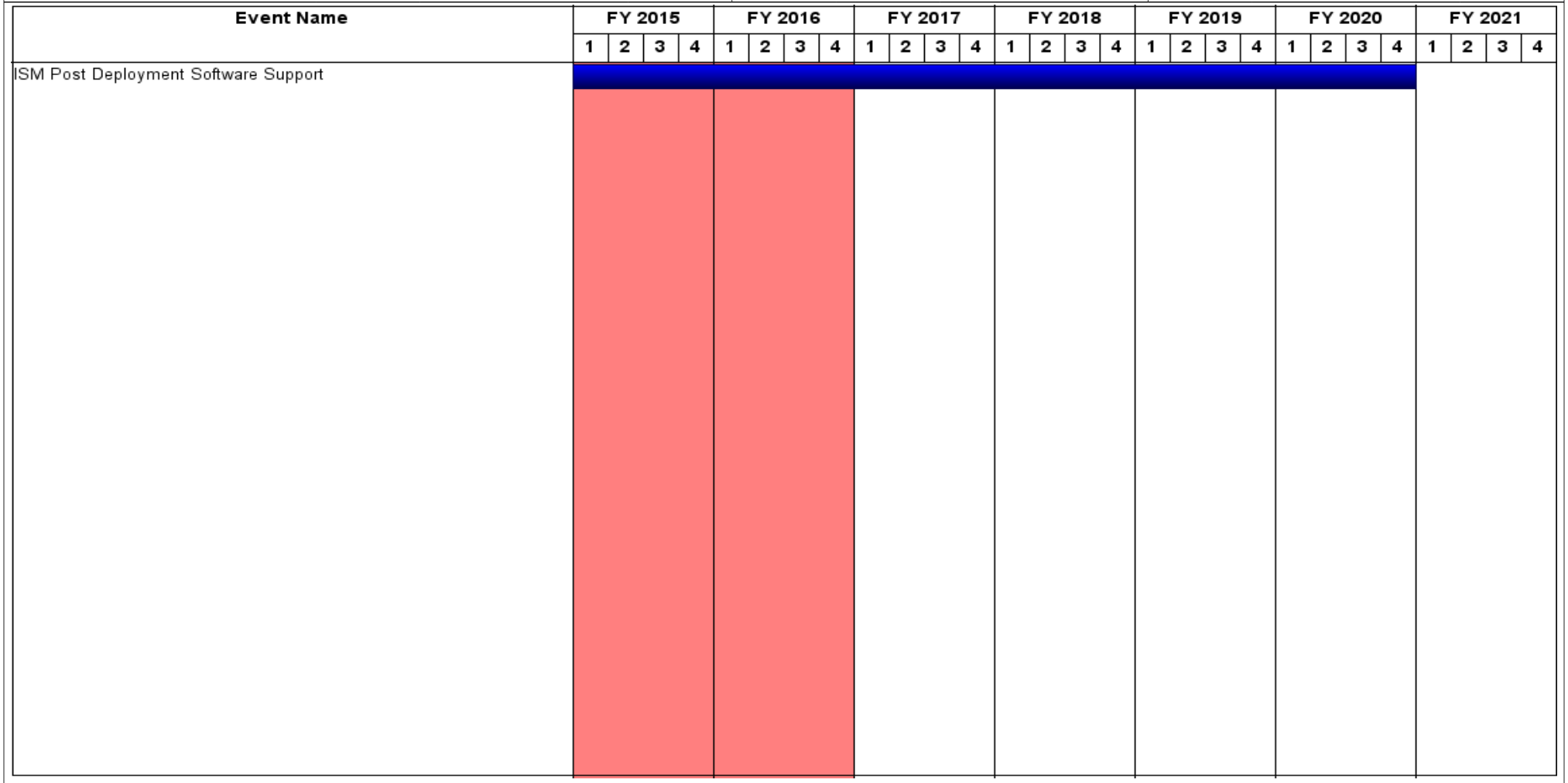

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 184 / *Installation Support Modules*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ISM Post Deployment Software Support	4	2003	4	2020

Note

ISM Core requirements are less than $1.0 million.

There are no OCO requirements. End date is revised to 30 SEP 2025. Schedule Detail should show ISM System Post Deployment in 2020 1Q - 4Q.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 193 / *Medical Communications For Combat Casualty*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
193: *Medical Communications For Combat Casualty*	-	1.409	4.611	1.207	-	1.207	0.390	0.000	0.000	0.000	0.000	7.617
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Medical Communications for Combat Casualty Care (MC4) System interfaces Force Health Protection and medical surveillance information with Army Mission Command information technology systems. The MC4 System fulfills the requirements highlighted in United States Code: Title 10, Subtitle A, Part II, Chapter 55, Section 1074f, mandating the proper documentation of deployed Servicemembers' medical treatment to include pre- and post-deployment screening and its associated medical surveillance. The MC4 System supports other Soldier protection initiatives by providing data for analyses which can be used for identification and development of critical soldier support systems such as body armor, improved helmets, traumatic brain injury protection and trauma reduction. Current MC4 Program efforts are focused on system engineering, testing, integration, and fielding automation infrastructure for Army users of the Theater Medical Information Program-Joint (TMIP-J) suite of software. Effort has also been initiated to integrate MC4 with the Army Chief Information Office (CIO) Network 2020 and Common Operating Environment (COE) and as a program of record in the Mobile/Handheld Computing Environment Working Group. Funding provides engineering, developmental testing, and integration of information management/information technology to support Force Health Protection in accordance with the Army Equipment Modernization Plan.

FY 2017 Base funding in the amount of $1.207 million will be used for the engineering effort required to provide the Defense Health Clinical Systems (DHCS) TMIP-J software on the Army platform, as well as the engineering effort for other Army unique capabilities. Activities include:
--Research of technologies to integrate software into Army future information infrastructure, such as exploration of virtualization for MC4; and Remote Desktop Services applications
--Evaluation of hardware technology obsolescence and solutions
--Interfaces with other systems, e.g. Nett Warrior

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Engineering and Technical Support	0.574	2.526	1.207
Description: Engineering and Technical Support for Preplanned Program Improvements and System Upgrades, Systems Integration, Software Support and other new initiatives to improve system performance and effectiveness.			
FY 2015 Accomplishments: Continued evaluation and development of virtualization, interface/integration with Common Operating Environment.			
FY 2016 Plans: Continued evaluation and development of virtualization, interface/integration with Common Operating Environment.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 193 / *Medical Communications For Combat Casualty*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued evaluation and development of virtualization, interface/integration with Common Operating Environment. Evaluation of Army standard mobile handheld device as hardware solution for MC4 mobile system requirement. Development of mobile handheld software application for MC4 requirement.			
Title: PMO Testing Support ***Description:*** Test augmentation by outside agencies to include test efforts for DHCS/TMIP-J and other Army unique software capabilities ***FY 2016 Plans:*** Test augmentation for DHCS/TMIP-J and MC4 Operational Test and Evaluation by outside agencies, in support of TMIP Increment 2 Release 3 software version. Also outside agency support for documentation of testing results required for fielding decision	-	0.200	-
Title: MC4/TMIP Integration and Testing ***Description:*** Development testing of DHCS/TMIP-J Increment 2 (all releases) and Increment 3; Lab site studies with technology and scenarios; Integration testing of software systems on the MC4 baseline system; test and evaluation of new capabilities for combat theater functionality. ***FY 2015 Accomplishments:*** Integrate and test DHIMS/TMIP-J Increment 2 Release 3 (TMIP-J I2R3) on the MC4 baseline system; Lab site studies with technology and scenarios. ***FY 2016 Plans:*** Complete integrate and test DHCS/TMIP-J Increment 2 Release 3 (TMIP-J I2R3) on the MC4 baseline system and any future updates for I2R3.	0.835	1.885	-
Accomplishments/Planned Programs Subtotals	1.409	4.611	1.207

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPA SSN MA8046: *OPA MA8046*	22.614	24.388	19.893	-	19.893	15.964	17.124	17.564	-	0.000	117.547
• OMA PE 432612: *OMA PE 432612*	6.177	3.412	3.467	-	3.467	3.464	2.359	2.407	2.473	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 193 / *Medical Communications For Combat Casualty*

D. Acquisition Strategy

The MC4 Program supports a number of Army Medical Information Technology/Communications initiatives. The near and mid-term focus of the MC4 program is to engineer, design, integrate, test, acquire and field the Army automation infrastructure capabilities supporting fielding of the Theater Medical Information Program-Joint (TMIP-J) integrated software application suite and other Army requirements. The MC4 hardware is procured as Commercial-off-the-Shelf (COTS) components. Since TMIP software is a major component of the MC4 System being developed in increments, the MC4 Program will deliver capabilities in increments, recognizing the need for future system updates and planned upgrades. The MC4 Program works with the user community to continually define and refine additional requirements and match them with available technologies to provide the user enhanced capabilities. These enhanced capabilities will be provided to the user at the earliest possible date. This approach yields the most operationally useful and supportable capability in the shortest time possible with Cost As an Independent Variable. Moreover, this approach provides an initial capability with the explicit intent of delivering improved and updated capability in subsequent updates and planned upgrades. This evolutionary development approach will be accomplished through a rapid prototyping process that will progress the system from its current functional capabilities to fully integrated objective capabilities. Appropriate commercial technology enhancements (e.g. advances in operating systems, voice activated technology, etc) will be incorporated into MC4 products and systems as they become available. Each MC4 System component will undergo a full range of developmental testing to include software unit testing, integration testing, interoperability testing and software qualification testing. The MC4 system updates and planned upgrades will continue to undergo follow-on testing.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 193 / *Medical Communications For Combat Casualty*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prog Mgmt Operations	Various	PMO : various	8.405	-		-		-		-		-	0.000	8.405	0.000
		Subtotal	8.405	-		-		-		-		-	0.000	8.405	0.000

Remarks

Funding (Prior Years) in Program Management Operations includes direct pay of PMO government employees, TDY, training, supplies, etc. in direct support of RDTE effort. At Milestone C, Program Management Operations efforts were moved to another appropriation.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Tech Spt/ Information Assurance (old contract)	Various	L-3 (was Titan) : various	9.390	-		-		-		-		-	0	9.390	0
Engineering & Tech Spt/ Information Assurance (new contract)	Various	L-3 : Various	3.978	0.574	Jan 2015	2.526	Jan 2016	1.207		-		1.207	0.390	8.675	0
Information Assurance	Various	ISEC Support : AZ	1.783	-		-		-		-		-	0.000	1.783	0.000
		Subtotal	15.151	0.574		2.526		1.207		-		1.207	0.390	19.848	0.000

Remarks

Information Assurance (IA) activities moved from ISEC to L3 in FY12, IA activities moved to another appropriation FY13; FY15 new competitive contract award, base year with 4 option years

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Testing Spt	MIPR	ATEC/AMEDD Board/JTIC : various	6.536	-		0.200		-		-		-	0.000	6.736	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 193 / *Medical Communications For Combat Casualty*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MC4/TMIP System Engineering	C/T&M	L-3 Communications : Frederick MD	7.889	-		-		-		-		-	0	7.889	0
MC4/TMIP System Engineering	Various	John Hopkins University (JHU) Applied Physics Lab : MD	32.124	-		-		-		-		-	0.000	32.124	0.000
MC4/TMIP System Engineering (new contract)	C/T&M	L-3 Communications : Frederick MD	2.150	0.835	Jan 2015	1.885	Jan 2016	-		-		-	0	4.870	0
		Subtotal	48.699	0.835		2.085		-		-		-	0.000	51.619	0.000

Remarks

PMO Testing Spt is provided by other Government agencies.

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	72.255	1.409		4.611		1.207		-		1.207	0.390	79.872	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 193 / *Medical Communications For Combat Casualty*

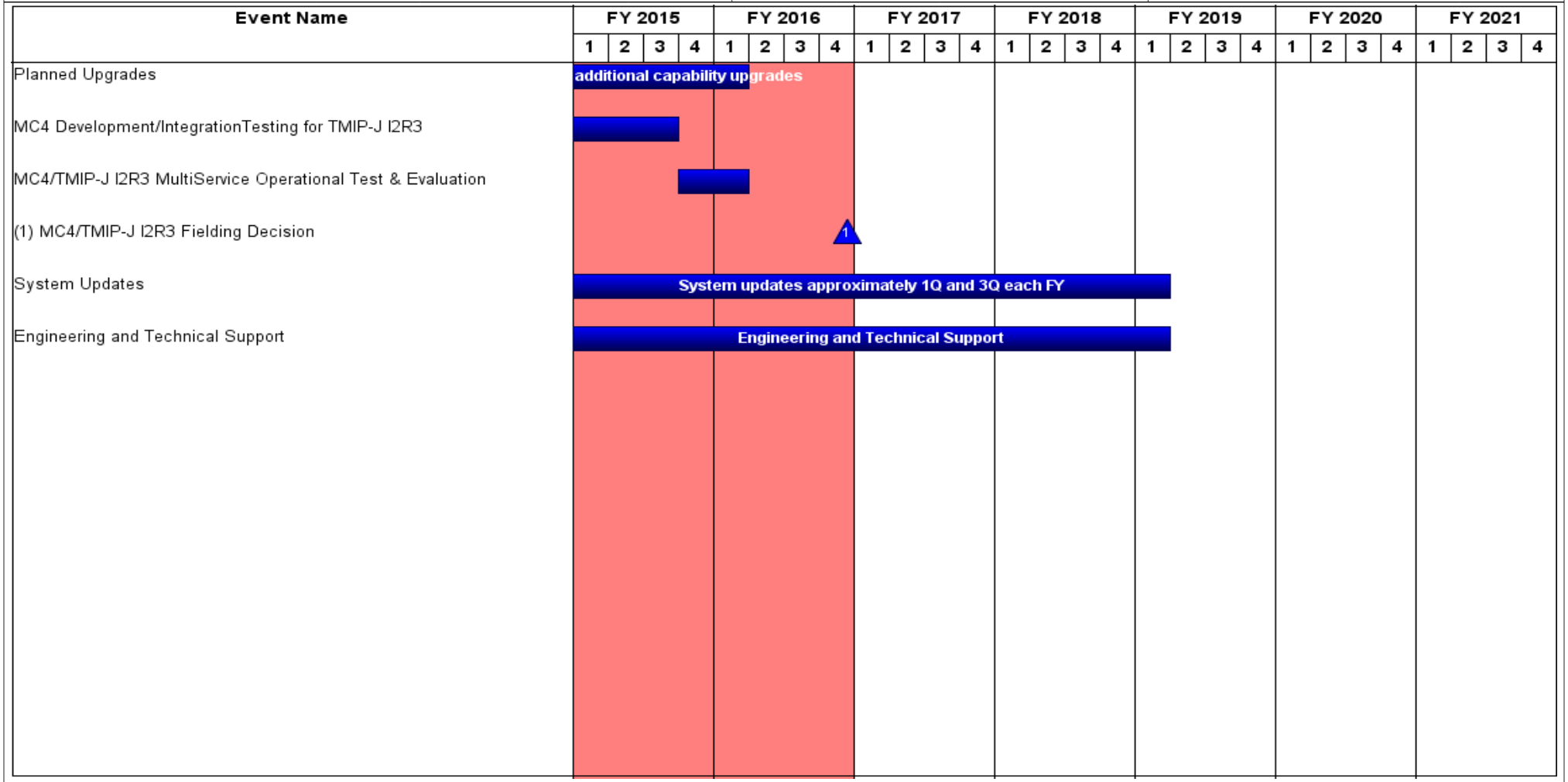

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 193 / *Medical Communications For Combat Casualty*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Planned Upgrades	1	2007	1	2016
MC4 Development/IntegrationTesting for TMIP-J I2R3	1	2014	3	2015
MC4/TMIP-J I2R3 MultiService Operational Test & Evaluation	4	2015	1	2016
MC4/TMIP-J I2R3 Fielding Decision	4	2016	4	2016
System Updates	1	2007	1	2019
Engineering and Technical Support	1	2007	1	2019

Note

Planned Upgrades correspond to current TMIP-J Acquisition Strategy schedules for upgrades and enhanced capability of the TMIP software. System Updates correspond to projected software change packages, to include security enhancements, throughout this time period. Both Upgrades and Updates require integration and testing prior to acceptance and release. Engineering and Technical support continues throughout this time period.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 738 / *AcqBiz*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
738: *AcqBiz*	-	7.444	10.454	8.737	-	8.737	4.634	4.588	5.105	4.996	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

PM Acquisition Business provides acquisition-centric enterprise solutions. Delivers innovative and adaptive solutions that streamline the collection and analysis of data to support powerful decisions across the Army acquisition enterprise. PM AcqBusiness will be the premier source of information technology solutions that enable information dominance at all levels of the Army acquisition enterprise. PM AcqBusiness provides Army Acquisition practitioners with a consistent set of unique business tools, web services, and decision support tools integrated through a common architecture, which provide visibility of authoritative data, consistency in business process, and more timely support to acquisition decisions. The enterprise tools provided via PM AcqBusiness enable the reduction and eventual elimination of stovepipe and redundant tools that exist in the domain today. PM AcqBusiness provides an environment that enables centralized, role-based access to trusted and authoritative data from disparate Acquisition Domain data sources. In addition, PM AcqBusiness provides a framework for information providers to publish their data and provide their services to authorized users.

The program also resources development requirements for the U.S. Army Accessioning Integrated Automation Architecture which provides the Information Technology solution necessary to accomplish the Army's Accessioning mission.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Program Management	3.651	3.146	3.242
Description: This effort provides program management in support of the U.S. Army Accessioning Integrated Automation Architecture mission.			
FY 2015 Accomplishments: Program Management			
FY 2016 Plans: Program Management			
FY 2017 Plans: Program Management			
Title: Design, Development, and Test	3.793	7.308	5.495
Description: This effort supports the ultimate integration of the AcqBusiness Portfolio.			
FY 2015 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 738 / *AcqBiz*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Analysis and Design, Development, Test and Integration of AcqBusiness Portfolio. ***FY 2016 Plans:*** Analysis and Design, Development, Test and Integration of AcqBusiness Portfolio. ***FY 2017 Plans:*** Analysis and Design, Development, Test and Integration of AcqBusiness Portfolio.			
Accomplishments/Planned Programs Subtotals	7.444	10.454	8.737

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OMA: *OMA APE 432615*	10.676	10.889	10.579	-	10.579	10.022	15.557	10.863	10.439	Continuing	Continuing

Remarks

D. Acquisition Strategy

PM AcqBusiness was established to acquire a centrally managed and funded suite of standard net-centric business capabilities to provide Army acquisition practitioners the data visibility necessary to optimize the acquisition of materiel, supplies, and services for the Warfighter. PM AcqBusiness is using an evolutionary acquisition strategy, incorporating the use of COTS hardware and software, when practicable, in order to realize benefits early and reduce risk. The AcqBusiness acquisition approach embraces the tenets of Subtitle III of Title 40, U.S.C. (formerly the Clinger-Cohen Act of 1996).

PM AcqBusiness leverages existing DoD and Army enterprise capabilities to fulfill Acquisition Domain business needs whenever possible. When no Army enterprise systems satisfy approved requirements, priority is given to existing acquisition business systems or services where they are scalable and in conformance with technical architecture standards. In the event neither of these options is available to satisfy a business need, capabilities are acquired as commercial off-the-shelf (COTS) products. PM AcqBusiness maximizes use of COTS technology by implementing an architecture and infrastructure based on services and virtualization. If there are no available COTS solutions, PM AcqBusiness will develop the capability, leveraging an incremental approach to enable: (1) consistent and phased definition of requirements, (2) mature technologies, and (3) collaboration among user, tester and developer.

As such, PM AcqBusiness is:

- collaborating with the ASA(ALT) community to facilitate Business Process Reengineering in advance of development of AcqBusiness capabilities.

- encouraging the purchase of commercial products and innovations from private industry.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 738 / *AcqBiz*

- involving potential suppliers early in the requirements generation process.

- employing outsourcing wherever possible, and

- acquiring AcqBusiness capabilities in interoperable modules, minimizing the time required to deliver new capabilities to users.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) 738 / *AcqBiz*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	HRC : FT Knox KY	12.733	3.651		3.146		3.242		-		3.242	Continuing	Continuing	Continuing
		Subtotal	12.733	3.651		3.146		3.242		-		3.242	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis and Design, Development, Integration	Various	Booz, Allen and Hamilton : Springfield, VA	71.736	3.793	Jun 2015	-		-		-		-	0	75.529	0
Analysis and Design, Development, Integration	Various	TBD : TBD	0.000	-		7.308	Jun 2016	5.495	Jun 2017	-		5.495	Continuing	Continuing	Continuing
		Subtotal	71.736	3.793		7.308		5.495		-		5.495	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	84.469	7.444		10.454		8.737		-		8.737	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 738 / *AcqBiz*

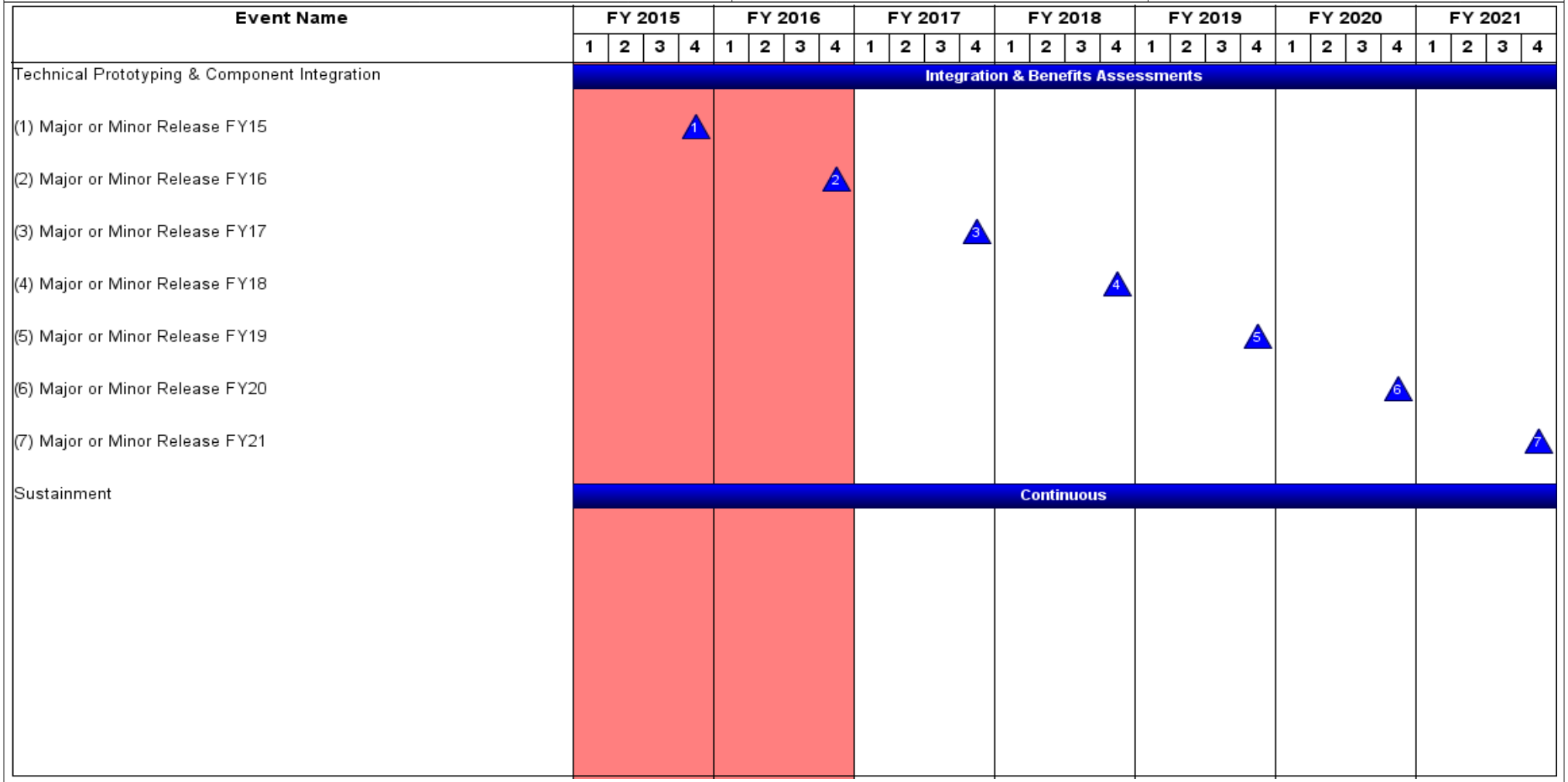

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** 738 / *AcqBiz*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technical Prototyping & Component Integration	1	2006	4	2021
Major or Minor Release FY15	4	2015	4	2015
Major or Minor Release FY16	4	2016	4	2016
Major or Minor Release FY17	4	2017	4	2017
Major or Minor Release FY18	4	2018	4	2018
Major or Minor Release FY19	4	2019	4	2019
Major or Minor Release FY20	4	2020	4	2020
Major or Minor Release FY21	4	2021	4	2021
Sustainment	1	2006	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) T04 / *USMEPCOM TRANSFORMTION - IT MODERNIZATION*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
T04: *USMEPCOM TRANSFORMTION - IT MODERNIZATION*	-	14.839	20.847	29.281	-	29.281	31.143	20.160	13.789	8.226	0.000	138.285
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

US Military Entrance Processing Command Integrated Resource System (MIRS) provides automation and communications capability to meet peacetime, mobilization and wartime military manpower accession mission for the Armed Services. MIRS interfaces with recruiting capabilities for the services, incorporating the concept of electronic data sharing using standard DoD data elements between USMEPCOM and all Armed Services recruiting commands. This project includes Computerized Adaptive Testing-Armed Services Vocational Aptitude Battery (CAT-ASVAB), automated Armed Services Vocational Aptitude Battery is given to determine applicants' mental abilities. Data Services mission consists of automatic data processing in support of USMEPCOM, the Selective Service System (SSS) and other external agencies for both peacetime and mobilization requirements. MIRS directly supports mobilization in the event of a military draft, through electronic links with the SSS and its ability to process and ship. USMEPCOM/MIRS is the only DoD organization legally authorized to collect civilian, medical and testing data for purposes of processing into military services and is the only DoD joint support system used to enforce congressional, DoD and Armed Forces qualification criteria for enlistment. USMEPCOM has established interfaces with US Citizenship and Immigration Services to verify citizenship status for applicants of military service to screen out undesired or security threat and Federal Bureau of Investigation for background screening using digital fingerprints to eliminate people with criminal records from entering military service. USMEPCOM's IT sustainment effort will maintain MIRS and the associated network certification and accreditation until the end of system lifecycle. MIRS was scheduled to be replaced by the Virtual Interactive Processing System (VIPS). VIPS program cancellation has placed USMEPCOMs legacy IT infrastructure at high risk. The resultant system leaves a non-compliant and non-networthy accession system with processing gaps that need to be addressed for secure, compliant, sustainable, and reliable capabilities to meet DoD and Service requirements. USMEPCOM must continue toward security and data integrity regulatory/security compliance (PII and HIPAA) or lose Authority to Operate.

Customers/beneficiaries of this investment include the Accessions Community of Interest (ACOI) including components of the Army, Navy, Air Force, Marines, Coast Guard, USMEPCOM and OSD (P&R).

Stakeholders include: All Uniformed Services, Asst Sec of Defense (Health Affairs), Defense Transportation Mgmt Office, USD P&R, USD Intel, Defense Manpower Data Center and Department of Veterans Affairs.

Requested funding mitigates inefficient system sustainability and scalability through an update of the applications underlying database, operating system and middleware software. The current legacy system requires time consuming and expensive efforts to make operational changes (even minor ones) to military accessions processing to meet DoD and individual Services requirements. MIRS operational processes exist in a system where business rules and workflow are hard coded throughout the system. Any changes require extensive review and analysis of the code to see what is impacted before a change can be made, then extensive testing afterwards to make sure it works correctly throughout the accession process. Currently there are over 600 Problem Reports (PR) and System Change Requests (SCRs) pending.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** T04 / *USMEPCOM TRANSFORMTION - IT MODERNIZATION*

Requested funding also provides for a follow-on acquisition plan that will be informed by the recent DCMO initiated Technical Demonstration. The acquisition will provide future enhancements and additional capabilities like those to be proven through the currently evolving Tech Demo. These efforts will culminate in new USMEPCOM business process vision of an anytime, anywhere accession processing capability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Phase 3 Application update ***Description:*** Initiate update of MIRS and associated Applicant Processing applications to secure applicant data ***FY 2015 Accomplishments:*** Initiate update of MIRS and associated Applicant Processing applications to secure applicant data ***FY 2016 Plans:*** Initiate update of MIRS and associated Applicant Processing applications to secure applicant data ***FY 2017 Plans:*** Initiate update of MIRS and associated Applicant Processing applications to secure applicant data.	8.365	12.027	20.089
Title: Project Support ***Description:*** Funding will support Information Technology ***FY 2015 Accomplishments:*** Update of MIRS and associated Applicant Processing Applications to facilitate DoDAF 2.0 and BEA compliant architecture. ***FY 2016 Plans:*** blank ***FY 2017 Plans:*** Update of MIRS and associated Applicant Processing Applications to facilitate DoDAF 2.0 and BEA compliant architecture.	6.474	8.820	9.192
Accomplishments/Planned Programs Subtotals	14.839	20.847	29.281

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** T04 / *USMEPCOM TRANSFORMTION - IT MODERNIZATION*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) T04 / *USMEPCOM TRANSFORMTION - IT MODERNIZATION*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor PM Support	Various	TBD : TBD	0.000	14.839		-		-		-		-	0	14.839	0
		Subtotal	0.000	14.839		-		-		-		-	0.000	14.839	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MEPCOM Jnt Comp Ctr(JCC) & Integ Resource Sys(IRR)	C/IDIQ	various : various	0.000	-		20.847		29.281		-		29.281	Continuing	Continuing	0
		Subtotal	0.000	-		20.847		29.281		-		29.281	-	-	0.000

Remarks

MEPCOM Jnt Comp Ctr(JCC) & Integ Resource Sys(IRR). This RDT&E will be used by USMEPCOM for continued project transformation support of VIPS.

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	14.839		20.847		29.281		-		29.281	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** T04 / *USMEPCOM TRANSFORMTION - IT MODERNIZATION*

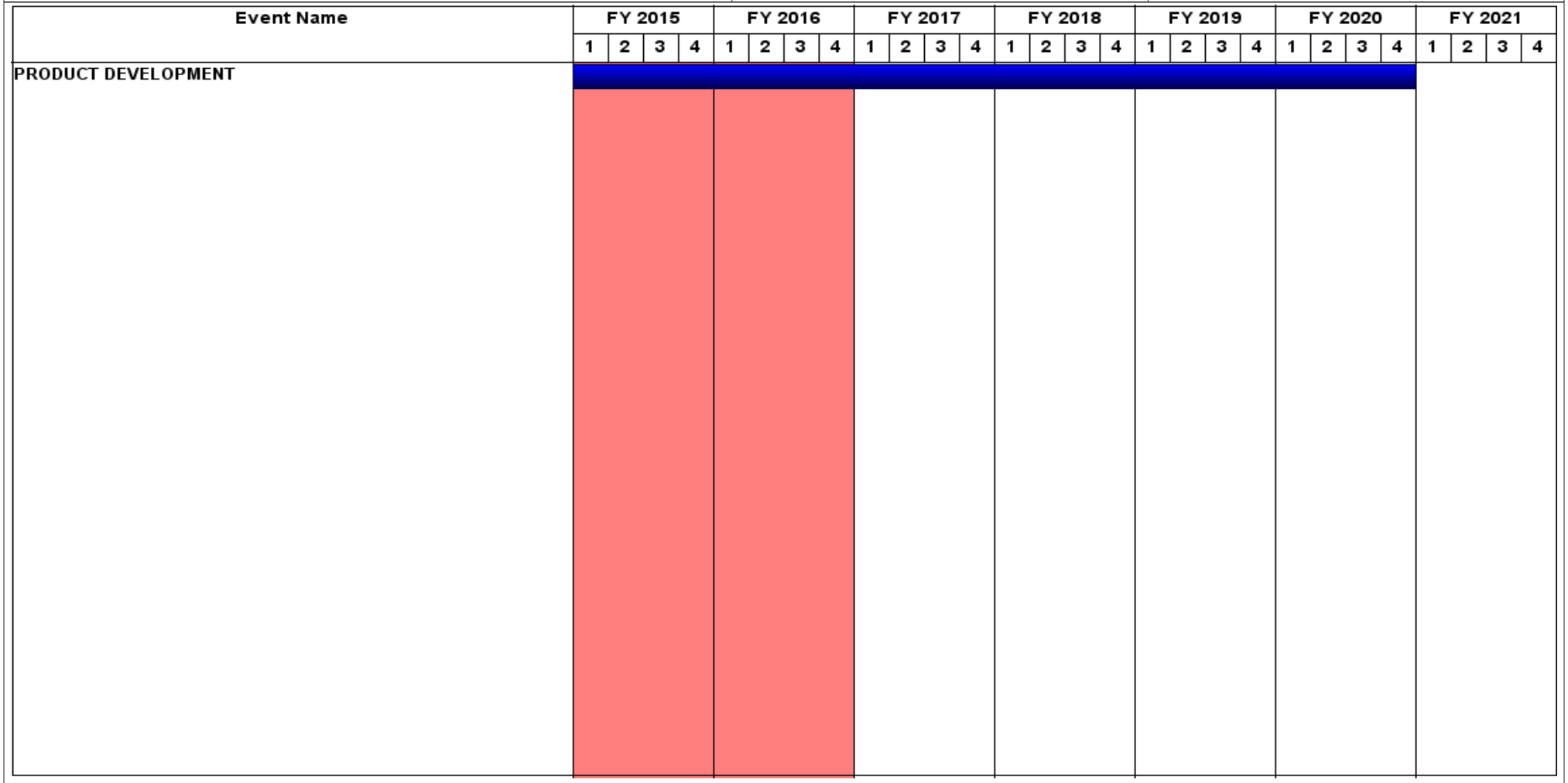

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** T04 / *USMEPCOM TRANSFORMTION - IT MODERNIZATION*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PRODUCT DEVELOPMENT	1	2015	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*				Project (Number/Name) T05 / *Army Business System Modernization Initiatives*			
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
T05: *Army Business System Modernization Initiatives*	-	39.037	23.250	28.577	-	28.577	34.917	28.069	27.200	29.219	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Army Training Information System (ATIS) will provide a common operational picture (COP) of the training environment through integrated, interoperable training development, management, scheduling, and delivery capabilities. Existing training information systems do not provide Commanders, leaders, Soldiers, and civilians a centralized COP of the training environment that enables persistent, consistent access to the Training and Education information and products necessary to support readiness to meet emerging threats. Without ATIS, Army organizations will continue to develop and maintain a multitude of TIS that are not part of an enterprise, thus inhibiting visualization, understanding, and informed decision making.
The Army Contract Writing System (ACWS) has moved to PE 0605047 beginning FY17.
Commander's Risk Reduction Dashboard (CRRD) will consolidate information from multiple Army databases and present to commanders a concise report about which Soldiers in their unit have been involved with at-risk behaviors, some of which may be associated with suicide, and when those instances occurred. The dashboard will be able to generate multiple reports, including one that highlights just Soldiers with risk factors within a certain time period; another that focuses only on newly assigned Soldiers; and another that allows commanders to look at a specific Soldier's history with at-risk behaviors

The Army Safety and Health Management System (ASHMS) initiative provides a framework of people, processes and technology to synchronize, integrate and optimize Army Safety and Occupational Health (SOH) capabilities to preserve war fighting capabilities and enhance the force by providing a safe and healthy environment for Soldiers, Families, Civilians, and contractors. An analysis of Army SOH Doctrine, Organization, Training, Materiel, Leadership and education, Personnel, Facilities and Policies (DOTMLPF-P) determined that the Army Safety Management Information System – Revised (ASMIS-R), a Defense Business System, is currently not able to satisfy current and emerging ASHMS capability requirements without modernization to resolve these capability gaps. Changes in requirements for the Army Safety and Health Management System (Programmatic) related to DoDI 6055.01, AR 385-10, Information Assurance requirements and direct feedback from the Safety professionals within the DoD and the Army have resulted in the need for changes in associated business processes. Additionally, a business gap analysis performed by the DASA(ESOH) revealed a deficiency in the system's requirements that would support Army Commands in identifying hazards in the work place, determining hazard mitigation strategies and controls, employing these strategies and controls, and measuring their potential for reducing mishaps. Addressing these problems will have an immediate and direct impact on meeting regulatory requirements, improving data integrity, improving information assurance posture (compliance), increasing the Army's ability to reduce mishaps across the force structure, and promoting Army Force Generation (ARFORGEN) capabilities.

The Army Human Resources Command (HRC) has several efforts for which RDT&E will be applied. One is to prepare those systems for subsumption into the Integrated Personnel and Pay System(IPPS-A). The other is to disconnect and upgrade those systems not being subsumed by IPPS-A. Systems that will be targeted by HRC to prepare for IPPS-A subsumption or upgrade are the Automated Orders and resources System (AORS), Army Selection Board System (ASBS), Data Base Administration Suite of System (DBA), Enlisted Distribution and Assignment system (EDAS), Enlisted Promotion Model (EPM), Enterprise Service Bus (ESB), Human Resource Command Identity Management System (HIMS), Integrated Total Army Personnel Database (ITAPDB), Officer Selection Support System (OSSS), Reserve

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** T05 / *Army Business System Modernization Initiatives*

Statistics Accounting System/Reserve Component Common Personnel Data System (RSAS/RCCPDS), Senior Enlisted Promotions Model (SEPM), Single Evaluation Processing System (SEPS), Soldier Management System Webified Suite of System (SMSWEB), Total Army Personnel Data Base - Active Enlisted (TAPDB-AE), Total Army Personnel Data Base - Active Officer (TAPDB-AO), Total Army Personnel Data Base - Active Reserve (TAPDB-AR), Total Officer Personnel Management Information System (TOPMIS), Total Officer Personnel Management Information System II (TOPMIS II), Keystone Request/Retain System, and the Interactive Personnel Electronic Records Management System (iPERMS).

The Defense Language Software Upgrade will perform a major modification to the Universal Course Authoring Tool (UCAT). The modification will enable the tool to allow the curriculum development department to author new curricula without having to know a programming language, such as HTML. Currently, the tool has limited authoring templets and doesn't support the higher language levels or contain testing templets. The tool will do the programming automatically in the proper format for online viewing regardless of the mobile device used to view the material. This will enable the author to input the content in a predetermined way and the program will convert it into the proper online format. There will also be programming support to develop and convert existing online material into the current formats for use with all mobile devices regardless of the operating system used. Our current online material does not support all mobile devices and it needs to be reprogrammed to support all current mobile devices regardless of the Operating System (OS) used (Android, Apple, Microsoft). The Defense Language Institute (DLI) doesn't have the capability to do any programming modifications to existing programs. The programs are in need of modifications to meet DLI's new graduation standards of 2+/2+.

The Program Planning Budget (PPB)- Business Operating System (BOS) will standardize and better integrate the transactional automated information systems used in the HQDA level programming and budgeting processes. These systems are core to the PPBE business processes of the HQ for gathering programmatic requirements, balancing resources and delivering the Army's program budget to OSD. This project is streamlining programming and budgeting processes and significantly improving strategic analysis capabilities. The project is architecting, reengineering, streamlining and consolidating HQDA systems, feeder data base systems, and streamlining the associated processes. These improvements will improve capability, eliminate redundancies and reduce overall cost of operations. The PPB BOS project is complementary to the Army's General Fund Enterprise Business System (GFEBS) program. It includes a new effort in FY14, the Army Contract Writing System, a replacement for the DoD Standard Procurement System (SPS).

Army Career Tracker (ACT) is a leader development tool created to change significantly the way training, education, and experiential learning support is provided to Army enlisted, officers, civilians, and their leaders/supervisors. Users can search multiple education and training resources, monitor career development, and receive advice from their leadership. ACT provides single-site, easy access, and offers a complete and personalized career picture not available until now. ACT allows users manage career objectives and monitor progress towards career requirements and goals. ACT provides an integrated approach to supporting military and civilian personnel's personal and professional development which capitalizes on the mutual (personnel and Army) need for life-long learning. The unique inter-relationship between the user's personal growth and development, and the Army's need for Soldiers to be continuously developing, building and cultivating a culture of life-long learning is critical for the Soldier's and the Army's success. ACT comprises over 780,000 users with an adoption rate of 4,000 users per week. HQDA EXORD 054-12 ISO Army Transition mandates that leaders utilize roles in ACT to promote life-long learning and development opportunities throughout the Soldier's lifecycle of service (hire to retire).

The Defense Language Software Upgrade will perform a major modification to the Universal Course Authoring Tool (UCAT). The modification will enable the tool to allow the curriculum development department to author new curricula without having to know a programming language, such as HTML. Currently, the tool has limited authoring templets and doesn't support the higher language levels or contain testing templets. The tool will do the programming automatically in the proper format for online viewing regardless of the mobile device used to view the material. This will enable the author to input the content in a predetermined way and the program will convert it into the proper online format. There will also be programming support to develop and convert existing online material into the current formats for use with all

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mobile devices regardless of the operating system used. Our current online material does not support all mobile devices and it needs to be reprogrammed to support all current mobile devices regardless of the Operating System (OS) used (Android, Apple, Microsoft). The Defense Language Institute (DLI) doesn't have the capability to do any programming modifications to existing programs. The programs are in need of modifications to meet DLI's new graduation standards of 2+/2+.
Criminal Information Management System (CIMS): CIMS formerly known as the Law Enforcement Advisory Program (LEAP), is a collection of mission essential information technology (IT) systems within the Criminal Investigation Command (CIDC) and the Office of the Provost Marshal General (OPMG). Thru the CIMS, USACIDC and OPMG developed an integrated and unified, comprehensive enterprise program / system that houses Classified and Unclassified - Law Enforcement Sensitive (LES) data, leveraging existing and future Army LE enterprise information technology (IT) assets and other external data sources providing a full range of law enforcement functions to support business objectives and mission. The primary component is a comprehensive enterprise system, known as the Army Law Enforcement Reporting and Tracking System (ALERTS), provides US Army Law Enforcement stakeholders the enhanced capability to rapidly and efficiently manage a variety of Law Enforcement and criminal intelligence (CrimIntel) functions; as well as a broader range of senior executive reporting requirements. RDT&E dollars are required to further enhance ALERTS and other CIMS systems to continue the consolidation/rationalization of LE applications, and to give the LE community the tools to more quickly investigate, solve, and prevent Army crime.

Educational Outreach Initiative: Defense Forensic Science Center requires funding for educational outreach initiatives including internship positions at the undergraduate, graduate, and doctoral candidate levels. Defense Forensic Science Center was designated as the leader for forensic science disciplines (DAPM Memo 4 Oct 2011). This memorandum states that the DFSC will establish a forensic RDT&E program that provides the integration of joint operational research, including procedures for establishing customer requirements, and identifying gaps and needs that lead to RDT&E priorities. The program includes developing a scholarly environment across the Defense Forensic Enterprise through the use of educational partnerships, internships and fellowships to facilitate participation in RDT&E projects. The Educational Outreach program will provide an opportunity for students to contribute to forensic science research and influence shared research priorities across the forensic science communities, while supporting the DFSC and laboratory operations. Through the internship program, a variety of innovative research will be conducted that supports research capabilities across the entire range of military operations including traditional, expeditionary (forward deployed laboratories), and reach-back operations.

Research & Development Identified through the Broad Agency Announcement Initiative: The Defense Forensic Science Center (DFSC) requires funds to coordinate the execution of forensic research projects that will enhance the capability of forensic science applications for DoD customers both in traditional law enforcement/criminal justice purviews and in expeditionary environments. The DFSC staff will manage federally funded research and development contracts identified through a two year rolling Broad Agency Announcement (BAA) procedure. The BAA is issued under the provisions of paragraph 6.102(d) (2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of proposals. Research proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provisions of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments.

Financial Integrated Reporting Environment (FIRE): FIRE is a U.S. Army Material Command (AMC) Enterprise Resource Planning (ERP) system currently deployed at the Armament, Research, Development and Engineering Center (ARDEC). FIRE supports the funding and manpower required to accomplish ARDEC's reimbursable workload. RDTE is required to develop and expand the system as an enterprise solution across all AMC reimbursable activities. This strategy is in line with existing Army Portfolio Management System (APMS) and Business Enterprise Architecture (BEA) Objectives.

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Contract Writing System (ACWS) ***Description:*** ACWS is the Army strategy for a single enterprise-wide contract writing and management solution that will meet the Army's current critical functional contract writing requirement and can expand to meet future functional needs. The Army's goal is to streamline Acquistion, Technology and Logistics (AL&T) end-to-end business processes; reduce operating, maintenance and support costs; decrease, and where applicable, mitigate the number of existing and future interfaces. ***FY 2015 Accomplishments:*** FY15 funds will be used to develop Army Contract Writing System capabilities, perform development efforts and system integration. ***FY 2016 Plans:*** FY16 funds are to perform all requisite activities to carry the program through the source selection process, a contract award authority to proceed decision (ATP-1)	25.355	4.170	-
Title: Army Training Information System (ATIS) ***Description:*** Army Training Information System (ATIS) is an enterprise system that will provide a common operational picture (COP) of the training environment through integrated, interoperable training development, management, scheduling, and delivery capabilities. These capabilities will enable Commanders, leaders, Soldiers, and civilians to better understand, visualize, describe, direct, lead, and assess training requirements so they can more effectively plan, prepare, execute, and assess training. End result is an ATIS that enables Soldiers to train as they will fight, so they can effectively fight as they have trained. ***FY 2016 Plans:*** Complete the Analysis of Alternatives to include the incremental developmental plan. ***FY 2017 Plans:*** RDTE funding will be used to complete the Army Cost Estimate, Complete Capability Development Document and enter the Engineering, Manufacturing & Development phase of development of ATIS.	-	7.976	15.670
Title: Commanders Risk Reduction Dashboard (CRRD) ***Description:*** CRRD will consolidate information from multiple Army databases and present to commanders a concise report about which Soldiers in their unit have been involved with at-risk behaviors, some of which may be associated with suicide, and when those instances occurred. ***FY 2016 Plans:***	-	0.723	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Develop database and system capabilities, perform design efforts and preparatory development.			
Title: The Army Safety and Health Management System (ASHMS)	-	3.765	4.846
Description: The Army Safety and Health Management System (ASHMS) initiative provides a framework of people, processes and technology to synchronize, integrate and optimize Army Safety and Occupational Health (SOH) capabilities to preserve war fighting capabilities and enhance the force by providing a safe and healthy environment for Soldiers, Families, Civilians, and contractors. An analysis of Army SOH Doctrine, Organization, Training, Materiel, Leadership and education, Personnel, Facilities and Policies (DOTMLPF-P) determined that the Army Safety Management Information System – Revised (ASMIS-R), a Defense Business System, is currently not able to satisfy current and emerging ASHMS capability requirements without modernization to resolve these capability gaps. Changes in requirements for the Army Safety and Health Management System (Programmatic) related to DoDI 6055.01, AR 385-10, Information Assurance requirements and direct feedback from the Safety professionals within the DoD and the Army have resulted in the need for changes in associated business processes. Additionally, a business gap analysis performed by the DASA(ESOH) revealed a deficiency in the system's requirements that would support Army Commands in identifying hazards in the work place, determining hazard mitigation strategies and controls, employing these strategies and controls, and measuring their potential for reducing mishaps. Addressing these problems will have an immediate and direct impact on meeting regulatory requirements, improving data integrity, improving information assurance posture (compliance), increasing the Army's ability to reduce mishaps across the force structure, and promoting Army Force Generation (ARFORGEN) capabilities. .			
FY 2016 Plans: FY16 funds are being used for development of products and tools to modernize mishap reporting through the addition of an Initial Notification capability for Commanders, offline capability for mishap reporting in low/no bandwidth areas, and mobile application capabilities as well as Human Factors risk management.			
FY 2017 Plans: FY17 funds are being used to continue development of products and tools to modernize mishap reporting through the addition of an Initial Notification capability for Commanders, offline capability for mishap reporting in low/no bandwidth areas, and mobile application capabilities as well as Human Factors risk management.			
Title: Army Business System Modernization Initiatives, CPOL & iPERMS	13.313	6.036	1.413
Description: Modernization requirements will add new capabilities to legacy IT systems that support human resource functions such as organization and position management, training, and employment. The PPB BOS system standardize and integrate the transactional information systems used in the Headquarters Department of Army (HQDA) Programming and Budgeting processes. The program is streamlining programming and budgeting business processes and significantly improving strategic analysis capabilities. The PPB BOS architecture reengineers, streamlines, and consolidates HQDA systems and financial feeder			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017

systems; aligns to the DoD Business Enterprise Architecture (BEA); implements powerful business intelligence analytical tools to support strategic planning, programming, and budgeting within HQDA; and provides access to GFEBS funds management and execution data through system interfaces with required SFIS compliancy integral to the PPB BOS data model. The LEAP program will provide criminal intelligence querying and reporting capabilities in compliance with regulatory and policy standards for Army Law Enforcement regarding investigation of felony crimes. LEAP captures criminal case investigative information regarding incidents, location descriptors, entities (name, social security number, rank, title, physical characteristics, sex, birth place, and date), agent assignment, crime description and identifiers, statements, property data, laboratory tests; verifies and stores this data for criminal intelligence purposes: and reports this information to the proper authorities from the Division Commanding Officer to the United States Grand Jury. The system will extract necessary data for consolidation and input to Defense Incident-Based Reporting System (DIBRS) monthly reports, National Incident-Based Reporting System (NIBRS) monthly reports and the Defense Clearance and Investigations Index (DCII) daily updates. The LIMS system will automate business processes that support the forensic examiners. These processes include, but are not limited to, analytics, materials management, management reporting, Freedom of Information Act requests (FOIA), legal discovery request, court preparation and outsource processing.

Civilian Personnel Online - Portal (CPOL-Portal) is a one stop secure site which provides Army civilian employees and HR specialists access to a private portal with a complete set of employment related resources, links and web based applications that require single sign-on access - Army Regional Tools (ART). CPOL-Portal will provide an Integrated Management System (IMS) in support of Civilian Workforce Transformation (CWT). It will support Civilian human capital decision making and allow leaders and employees to perform their roles more efficiently in support of Army goals and missions. CPOL Portal will provide the full spectrum of IT application support and access to Acquire, Develop, Distribute and Sustain components of the Army Civilian HCM Life-Cycle and link to G3 'Structure' IT Enterprise Applications.

The Fully Automated System for Classification (FASCLASS) is a centralized, web-based system that maintains civilian position descriptions and position related information across Department of the Army. It provides classifiers and managers capability to create, edit, and verify position descriptions. Also it offers robust search, report generation, and lookup & support capabilities.

The Overseas Entitlement Tracker (OET) provides the capability to accurately track Living Quarters Allowance (LQA). LQA is provided to reimburse employees for suitable, adequate living quarters at posts where the U.S. Government does not provide quarters. OET also tracks these other overseas entitlements for employees: Advance Pay, Danger Pay, Imminent Danger Pay, Foreign Differential, Home Leave, Post Allowance, Separation Maintenance Allowance, and Temporary Quarters Subsistence Allowance.

FY 2015 Accomplishments:

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Modernization requirements will add new capabilities to legacy IT systems that support human resource functions such as organization and position management, training, and employment. Will continue deployment and final fielding of the enterprise-level PPB BOS application throughout HQDA and the transfer of budget data to the Army's financial enterprise resource system, the General Fund Enterprise Business System. Will field the full operating capability of the Army Mapper system, which is the Army Geospatial data base of record and the HQDA repository for all Installation & Environment related geo-spatial data systems. ***FY 2016 Plans:*** Modernization requirements will add new capabilities to legacy IT systems that support human resource functions such as organization and position management, training, and employment. Will continue deployment and final fielding of the enterprise-level PPB BOS application throughout HQDA and the transfer of budget data to the Army's financial enterprise resource system, the General Fund Enterprise Business System. Will field the full operating capability of the Army Mapper system, which is the Army Geospatial data base of record and the HQDA repository for all Installation & Environment related geo-spatial data systems. ***FY 2017 Plans:*** Modernization requirements will add new capabilities to legacy IT systems that support human resource functions such as organization and position management, training, and employment. Will develop technologies for Army Installation Support, PM Personnel Employee Records Management System, HRC Core Automation Support, Records Management and Army Civilian Personnel Operations. Army Civilian Human Resources Agency will deliver additional capability increments of OET in FY 2016, through FY 2019. The FY 2016 increment consists of the initial set of Civilian Employee Interface functions. The FY 2017 increment delivers enhancements to the Civilian Employee Interface. The FY 2018 and FY 2019 increments include electronic files in place of paper, embed additional calculations, auto-generate additional notifications, online document review, and automate flow of data to Defense Civilian Personnel Data System.			
Title: Army Career Tracker (ACT)	0.366	0.580	0.748
Description: Provide competency management tool to manage leader attributes characteristics of the individual that shape the motivations for actions and bearing, and how thinking affects decisions and interactions with others; enhancement of counseling capabilities linked to the Individual Development Plan and current Counselor functions to provide greater functions and access to specific information by various counselors in support of Army Transition; enhance sponsorship functions to provide ease of execution and enhanced workflow between the many sponsorship Stakeholders ***FY 2015 Accomplishments:*** Provide competency management tool to manage leader attributes characteristics of the individual that shape the motivations for actions and bearing, and how thinking affects decisions and interactions with others; enhancement of counseling capabilities			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
linked to the Individual Development Plan and current Counselor functions to provide greater functions and access to specific information by various counselors in support of Army Transition; enhance sponsorship functions to provide ease of execution and enhanced workflow between the many sponsorship Stakeholders. ***FY 2016 Plans:*** Provide competency management tool to manage leader attributes characteristics of the individual that shape the motivations for actions and bearing, and how thinking affects decisions and interactions with others; enhancement of counseling capabilities linked to the Individual Development Plan and current Counselor functions to provide greater functions and access to specific information by various counselors in support of Army Transition; enhance sponsorship functions to provide ease of execution and enhanced workflow between the many sponsorship Stakeholders ***FY 2017 Plans:*** Provide competency management tool to manage leader attributes characteristics of the individual that shape the motivations for actions and bearing, and how thinking affects decisions and interactions with others; enhancement of counseling capabilities linked to the Individual Development Plan and current Counselor functions to provide greater functions and access to specific information by various counselors in support of Army Transition; enhance sponsorship functions to provide ease of execution and enhanced workflow between the many sponsorship Stakeholders.			
Title: Criminal Information Management System (CIMS) ***Description:*** CIMS formerly known as the Law Enforcement Advisory Program (LEAP), is a collection of mission essential information technology (IT) systems within the Criminal Investigation Command (CIDC) and the Office of the Provost Marshal General (OPMG). Thru the CIMS, USACIDC and OPMG developed an integrated and unified, comprehensive enterprise program / system that houses Classified and Unclassified - Law Enforcement Sensitive (LES) data, leveraging existing and future Army LE enterprise information technology (IT) assets and other external data sources providing a full range of law enforcement functions to support business objectives and mission. The primary component is a comprehensive enterprise system, known as the Army Law Enforcement Reporting and Tracking System (ALERTS), provides US Army Law Enforcement stakeholders the enhanced capability to rapidly and efficiently manage a variety of Law Enforcement and criminal intelligence (CrimIntel) functions; as well as a broader range of senior executive reporting requirements. RDT&E dollars are required to further enhance ALERTS and other CIMS systems to continue the consolidation/rationalization of LE applications, and to give the LE community the tools to more quickly investigate, solve, and prevent Army crime. ***FY 2015 Accomplishments:*** Preliminary development of LEAP database ***FY 2017 Plans:***	0.003	-	2.254

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY17 funds will be used in the research and development of the LEAP Database and to increase and improve law enforcement data sharing in the Army Law Enforcement Community			
Title: Educational Outreach Initiative ***Description:*** Defense Forensic Science Center requires funding for educational outreach initiatives including internship positions at the undergraduate, graduate, and doctoral candidate levels. Defense Forensic Science Center was designated as the leader for forensic science disciplines (DAPM Memo 4 Oct 2011). This memorandum states that the DFSC will establish a forensic RDT&E program that provides the integration of joint operational research, including procedures for establishing customer requirements, and identifying gaps and needs that lead to RDT&E priorities. The program includes developing a scholarly environment across the Defense Forensic Enterprise through the use of educational partnerships, internships and fellowships to facilitate participation in RDT&E projects. The Educational Outreach program will provide an opportunity for students to contribute to forensic science research and influence shared research priorities across the forensic science communities, while supporting the DFSC and laboratory operations. Through the internship program, a variety of innovative research will be conducted that supports research capabilities across the entire range of military operations including traditional, expeditionary (forward deployed laboratories), and reach-back operations. ***FY 2017 Plans:*** FY17 funds will be used to explore 7 innovative internship positions at the undergraduate, graduate, and doctoral candidate levels. Through this startup program interns would provide an invaluable contribution to forensic research…	-	-	0.156
Title: Research & Development Identified through the Broad Agency Announcement Initiative ***Description:*** The Defense Forensic Science Center (DFSC) requires funds to coordinate the execution of forensic research projects that will enhance the capability of forensic science applications for DoD customers both in traditional law enforcement/ criminal justice purviews and in expeditionary environments. The DFSC staff will manage federally funded research and development contracts identified through a two year rolling Broad Agency Announcement (BAA) procedure. The BAA is issued under the provisions of paragraph 6.102(d) (2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of proposals. Research proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provisions of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments. ***FY 2017 Plans:*** FY17 funds will provide for new forensic research and testing of new technology. Funds will assist the Defense Forensic Science Center to comply with DODD 5205.15E	-	-	2.340
Title: Defense Language Software Upgrade	-	-	1.150

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Modify the Universal Course Authoring Tool (UCAT). This tool will enable the curriculum development department to author new curricula without having to program in HTML. The tool will do the programming automatically in the proper format for online viewing. There will also be programming support to develop and convert existing online material into the current formats for use with all mobile devices regardless of the operating system used. ***FY 2017 Plans:*** Base FY 2017 Description: Modify the Universal Course Authoring Tool (UCAT). This tool will enable the curriculum development department to author new curricula without having to program in HTML. The tool will do the programming automatically in the proper format for online viewing. There will also be programming support to develop and convert existing online material into the current formats for use with all mobile devices regardless of the operating system used.			
Accomplishments/Planned Programs Subtotals	39.037	23.250	28.577

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SSN BE4162: *MACOM AUTOMATION: Army Contract Writing System (ACWS)*	3.654	-	0.992	-	0.992	4.959	8.296	5.874	5.927	0.000	29.702

Remarks

D. Acquisition Strategy

Modernize IT legacy systems across Army IT domains by adapting/improving government off the shelf (GOTS), commercial off the shelf (COTS), and new software development to perform various tasks in a networked environment. These efforts include Army Contract Writing System (ACWS), Army Training Information System (ATIS),Soldier Management System (SMS), Commander's Risk Reduction Dashboard (CRRD), the Army Strategic Readiness Update (ASRU), Law Enforcement Advisory Program (LEAP),Educational Outreach Program, R&D Broad Agency Program, Program Planning Budget Execution (PPBE) - Business Operating System (BOS), Automated Orders and Resources System (AORS), Army Selection Board System (ASBS), Data Base Administration Suite of System (DBA), Enlisted Distribution and Assignment system (EDAS), Enlisted Promotion Model (EPM), Enterprise Service Bus (ESB), Human Resource Command Identity Management System (HIMS), Integrated Total Army Personnel Database (ITAPDB), Officer Selection Support System (OSSS), Reserve Statistics Accounting System/Reserve Component Common Personnel Data System (RSAS/RCCPDS), Senior Enlisted Promotions Model (SEPM), Single Evaluation Processing System (SEPS), Soldier Management System Webified Suite of System (SMSWEB), Total Army Personnel Data Base - Active Enlisted (TAPDB-AE), Total Army Personnel Data Base - Active Officer (TAPDB-AO), Total Army Personnel Data Base -Active Reserve (TAPDB-AR), Total Officer Personnel Management Information System (TOPMIS), Total Officer Personnel Management Information System II (TOPMIS II), KEYSTONE Retain System, Army Contract Writing System (ACWS), Army Mapper, and the Interactive Personnel Electronic Records Management System (iPERMS).

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ACWS strategy is to perform all requisite activities to concurrently develop pre-milestone A/B documentation and perform pre-solicitation/source selection activities to meet the USD AT&L timelines for building a contract writing system to replace legacy contract systems to include the Standard Procurement System (SPS).

ASMIS-R is comprised of legacy modules (applications) that require modernization to maintain their relevancy to the Army in support of mishap reduction. As stated above, these are primarily related to meeting minimum DoD regulatory requirements related to the collection of mishap information, safety information storage, and resolving inefficiencies in data quality control and information flow.

Additionally, advances in technology allow for improvements in performance and data integrity that currently are deficiencies in the system. ASMIS-R, in its current state, does not provide any IT (material solution) to the business requirements identified above. The Command has utilized a FFP contract to execute specific Task Orders to develop the tools and products through mid-year FY15. The CRC will be competing a new contract vehicle to support the development of products and tools from midyear FY15 through FY19.

HQDA AG-1 Civilian Personnel (CP) Systems' Acquisition Strategy – The HQDA AG-1 Civilian Personnel (CP) office, Civilian Information Services Division (CISD) Chief and Program Managers will manage these modernization efforts and will utilize the HQDA AG-1 CP's Configuration Control Committee (CCC), Configuration Control Board (CCB), and Integrated Product Teams (IPT) to ensure the appropriate functionality is implemented into OET, CPOL Portal, and FASCLASS. Development tasks will be performed by AG-1 CP's contractor staff, whose performance is monitored according to the Quality Assurance Surveillance Program. In addition, unit testing and operational testing will be implemented to ensure the new functionality performs as required. This work will be performed on a firm- fixed- price contract vehicle.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT FOR KEYSTONE RETAIN SYSTEM, i-PERMS PRODUCT DEVELOPMENT	MIPR	M&RA/G-1 : ARLINGTON, VA	16.570	-		-		-		-		-	0	16.570	0
PPBOS PRODUCT DEVELOPMENT	MIPR	OAA : FORT BELVOIR, VA	23.230	-		-		-		-		-	0	23.230	0
Product Development for ACWS	C/IDIQ	PEO EIS : Alexandria, VA	16.289	25.355		4.170		-		-		-	Continuing	Continuing	Continuing
ATIS	C/IDIQ	PEO EIS : FT Eustice VA	0.000	-		7.976		15.670	Nov 2016	-		15.670	Continuing	Continuing	0
CRRD	C/IDIQ	TBD : TBD	0.000	-		0.723		-		-		-	Continuing	Continuing	0
The Army Safety and Health Management System	C/IDIQ	TBD : TBD	0.000	-		3.765		4.846		-		4.846	Continuing	Continuing	0
Army Career Tracker	C/FFP	TBD : TBD	0.000	-		0.580		0.748		-		0.748	Continuing	Continuing	0
Army Business System Modernization Initiatives	C/IDIQ	TBD : TBD	0.000	13.679		6.036		1.413		-		1.413	Continuing	Continuing	0
CIMS	C/IDIQ	ACC : NCR	0.000	0.003		-		2.254		-		2.254	0	2.257	0
Educational Outreach Initiative:	C/IDIQ	DFSC : FT Gillem	0.000	-		-		0.156		-		0.156	0	0.156	0
Research & Development Identified through the Broad Agency Announcement Initiative	C/IDIQ	DFSC : Ft Gillem	0.000	-		-		2.340		-		2.340	0	2.340	0
Defense Language Software Upgrade	TBD	TBD : TBD	0.000	-		-		1.150		-		1.150	0	1.150	0
		Subtotal	56.089	39.037		23.250		28.577		-		28.577	-	-	-

Remarks

Army Contract Writing System: The Under Secretary of Defense, Acquisition, Technology and Logistics directed that the Standard Procurement System (SPS) be decommissioned by FY17. In order for the Army to meet appropriate legislative mandates, the new capability will provide improved functionality in general contract writing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) T05 / *Army Business System Modernization Initiatives*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

and contract administration while seamlessly operating in the NIPR, SIPR, CONUS, OCONUS, and in low/no bandwidth environments. In addition, the replacement capability will produce data that is trackable and auditable by the Army designated finance account system(s) and will be in compliance with the Secretary of Defense's mandate for implementing internal controls to facilitate full financial audit readiness and accountability.
Army Training Information System (ATIS) is an enterpirse system that will provide a common operational picture of the training environment through integrated, interoperable training development, management, scheduling, and delivery capabilities. These capabilities will enable commanders, leaders, soldiers, and civilians to better understand, visualize, describe, direct, lead and assess training requirements so they can more effectively plan, prepare, execute, and assess training. End result is an ATIS that enables soldiers to train as they fight so they can effectively fight as they have trained.

Adapt/improve/install/field government off the shelf (GOTS), commercial off the shelf (COTS), and new software to perform various tasks in a networked environment such as data warehousing, force management, personnel, installation and environmental databases and applications to support Business System Transformation and Installation Management, to include Commander's Risk Reduction Dashboard.

The Army Human Resources Command (HRC) has several efforts for which RDT&E will be applied. One is to prepare those systems for subsumption into the Integrated Personnel and Pay System(IPPS-A). The other is to disconnect and upgrade those systems not being subsumed by IPPS-A. Systems that will be targeted by HRC to prepare for IPPS-A subsumption or upgrade are the Automated Orders and resources System (AORS), Army Selection Board System (ASBS), Data Base Administration Suite of System (DBA), Enlisted Distribution and Assignment system (EDAS), Enlisted Promotion Model (EPM), Enterprise Service Bus (ESB), Human Resource Command Identity Management System (HIMS), Integrated Total Army Personnel Database (ITAPDB), Officer Selection Support System (OSSS), Reserve Statistics Accounting System/ Reserve Component Common Personnel Data System (RSAS/RCCPDS), Senior Enlisted Promotions Model (SEPM), Single Evaluation Processing System (SEPS), Soldier Management System Webified Suite of System (SMSWEB), Total Army Personnel Data Base - Active Enlisted (TAPDB-AE), Total Army Personnel Data Base - Active Officer (TAPDB-AO), Total Army Personnel Data Base - Active Reserve (TAPDB-AR), Total Officer Personnel Management Information System (TOPMIS), Total Officer Personnel Management Information System II (TOPMIS II), Keystone Request/Retain System, and the Interactive Personnel Electronic Records Management System (iPERMS).
Criminal Information Management System (CIMS): CIMS formerly known as the Law Enforcement Advisory Program (LEAP), is a collection of mission essential information technology (IT) systems within the Criminal Investigation Command (CIDC) and the Office of the Provost Marshal General (OPMG). Thru the CIMS, USACIDC and OPMG developed an integrated and unified, comprehensive enterprise program / system that houses Classified and Unclassified - Law Enforcement Sensitive (LES) data, leveraging existing and future Army LE enterprise information technology (IT) assets and other external data sources providing a full range of law enforcement functions to support business objectives and mission. The primary component is a comprehensive enterprise system, known as the Army Law Enforcement Reporting and Tracking System (ALERTS), provides US Army Law Enforcement stakeholders the enhanced capability to rapidly and efficiently manage a variety of Law Enforcement and criminal intelligence (CrimIntel) functions; as well as a broader range of senior executive reporting requirements. RDT&E dollars are required to further enhance ALERTS and other CIMS systems to continue the consolidation/rationalization of LE applications, and to give the LE community the tools to more quickly investigate, solve, and prevent Army crime.
Educational Outreach Initiative: Defense Forensic Science Center requires funding for educational outreach initiatives including internship positions at the undergraduate, graduate, and doctoral candidate levels. Defense Forensic Science Center was designated as the leader for forensic science disciplines (DAPM Memo 4 Oct 2011). This memorandum states that the DFSC will establish a forensic RDT&E program that provides the integration of joint operational research, including p

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605013A / *Information Technology Development*	Project (Number/Name) T05 / *Army Business System Modernization Initiatives*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IPPS-A SUPPORT COSTS	MIPR	HRC : FORT KNOX, KY	15.357	-		-		-		-		-	0.000	15.357	0.000
HRC SYSTEMS KEYSTONE, IPERMS	MIPR	HRC : FORT KNOX, KY	0.385	-		-		-		-		-	0.000	0.385	0
Law Enforcement Advisory Program(LEAP)	MIPR	ACC/NCR : Quantico, VA	2.677	-		-		-		-		-	Continuing	Continuing	0
ARMY MAPPER	C/T&M	TBD : TBD	0.220	-		-		-		-		-	0	0.220	0
		Subtotal	18.639	-		-		-		-		-	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	74.728	39.037		23.250		28.577		-		28.577	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** T05 / *Army Business System Modernization Initiatives*

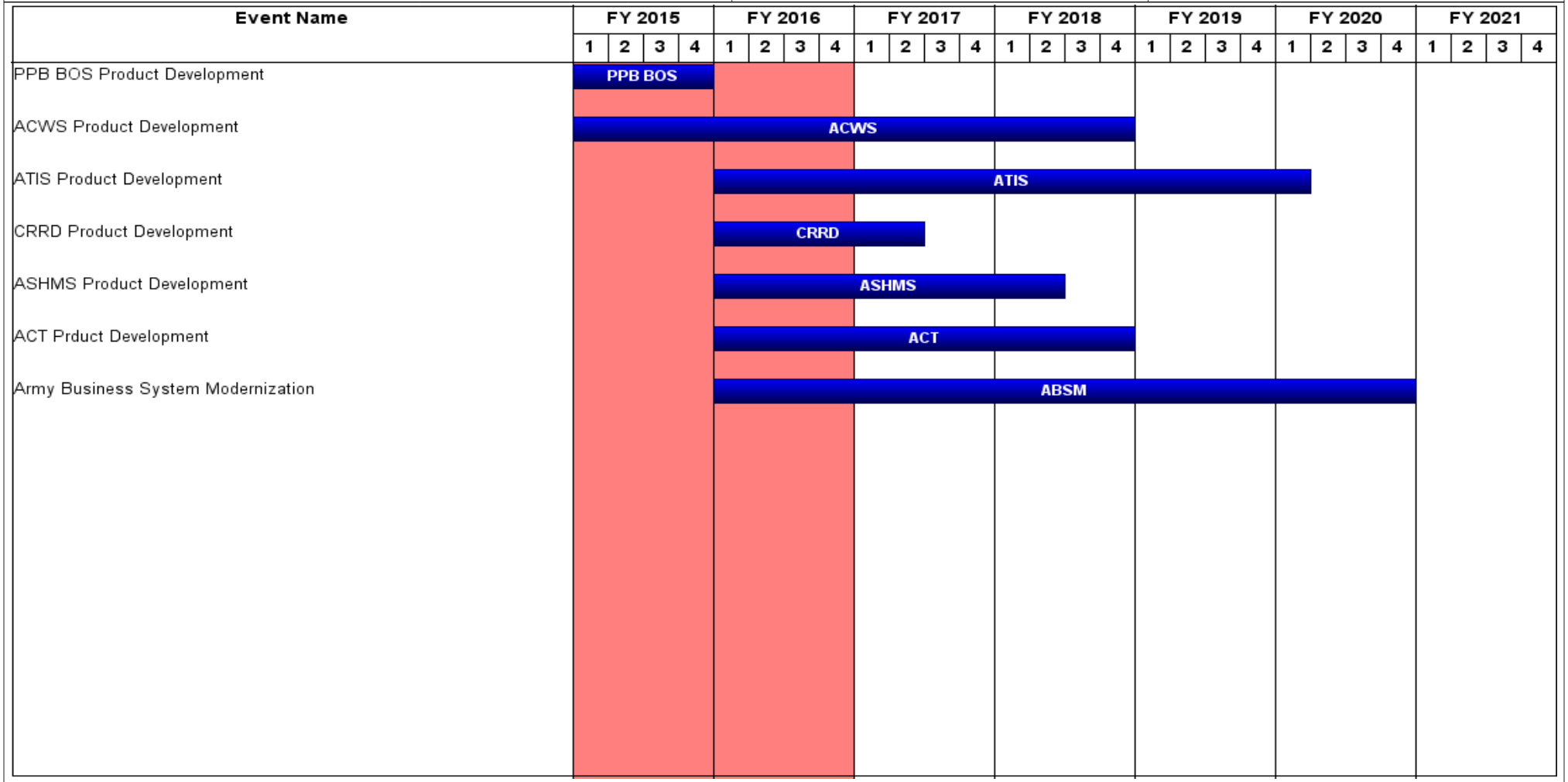

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605013A / *Information Technology Development*	**Project (Number/Name)** T05 / *Army Business System Modernization Initiatives*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PPB BOS Product Development	1	2014	4	2015
ACWS Product Development	1	2014	4	2018
ATIS Product Development	1	2016	1	2020
CRRD Product Development	1	2016	2	2017
ASHMS Product Development	1	2016	2	2018
ACT Prduct Development	1	2016	4	2018
Army Business System Modernization	1	2016	4	2020

Note

Army Contract Writing System moves to 0605047 FY17.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605018A *I Integrated Personnel and Pay System-Army (IPPS-A)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	62.831	121.011	155.584	-	155.584	150.582	120.395	36.173	36.895	Continuing	Continuing
ED9: *Integrated Personnel and Pay System - Army Inc 2*	-	62.831	121.011	155.584	-	155.584	150.582	120.395	36.173	36.895	Continuing	Continuing

Note

IPPS-A Increment II (Project ED9) is a designated Major Automated Information System (MAIS) program.

A. Mission Description and Budget Item Justification

The Integrated Personnel and Pay System - Army (IPPS-A) provides the Army with an integrated, multi-Component, personnel and pay system which streamlines Army Human Resources (HR), enhances the efficiency and accuracy of Army personnel and pay procedures, and supports Soldiers and their families. IPPS-A will subsume approximately 43 Army legacy systems across the Army, Army Reserve, and National Guard, into an integrated system. IPPS-A will be a web-based tool, available 24 hours a day, accessible to HR professionals, combatant commanders, personnel and pay managers, and other authorized users throughout the Army. IPPS-A addresses major deficiencies in the delivery of military personnel and pay services and also provides internal controls and audit procedures that prevent erroneous payments and loss of funds.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	68.434	136.011	174.749	-	174.749
Current President's Budget	62.831	121.011	155.584	-	155.584
Total Adjustments	-5.603	-15.000	-19.165	-	-19.165
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-15.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.000	-			
• SBIR/STTR Transfer	-2.603	-			
• Adjustments to Budget Years	-	-	-19.165	-	-19.165

Change Summary Explanation

Program initiated re-phasing of FY17 to align with current program schedule in FY18 & FY19

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	Project (Number/Name) ED9 / *Integrated Personnel and Pay System - Army Inc 2*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
ED9: *Integrated Personnel and Pay System - Army Inc 2*	-	62.831	121.011	155.584	-	155.584	150.582	120.395	36.173	36.895	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

IPPS-A Increment II is a designated Major Automation Information System (MAIS).

A. Mission Description and Budget Item Justification

The Integrated Personnel and Pay System - Army (IPPS-A) Increment II will deliver fully integrated personnel and pay services for all Army Components, building on the trusted database delivered by the IPPS-A Increment I program. Increment II will be able to link the personnel and pay functions for all Army personnel, eliminating duplicate data entry, reducing complex system maintenance, and minimizing pay discrepancies. IPPS-A Increment II will account for status changes between Active, Reserve, and National Guard components to ensure accurate service time minimizing impact on individual pay, credit for service, and other benefits as well as enable disciplined human resource management.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Analysis and Design, Development, and Integration of IPPS-A Increment II	62.831	121.011	155.584
Description: Funding is provided for the following efforts: ***FY 2015 Accomplishments:*** IPPS-A obtained a Milestone B Decision on 19 December 2014, and authority to award Engineering, Manufacturing and Development contract for System Integration support. IPPS-A began System Requirements Review (SRR). Major activities include Integrated Baseline Review (IBR), blueprinting of Authoritative Data Sources, preparation for DISA migration, Business Process Re-engineering (BPR), support MilPay transition, legacy system analysis with Functional Proponents, define development environment, develop PeopleSoft Training, and evaluating Risk Management Framework. ***FY 2016 Plans:*** IPPS-A will complete System Requirements Review (SRR), System Functional Review (SFR) and Integrated Baseline Review (IBR) with System Integrator. Begin Preliminary Design Review (PDR) for Increment II. Complete all activities leading to Integrated Baseline Review (IBR), Primary Design Review (PDR), and Critical Design Review (CDR). Begin configuration, development, integration, and testing activities for Release 2.0. Support an Integrated Progress Review (IPR) with Milestone Decision Authority (MDA) for Releases 3.0. ***FY 2017 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	**Project (Number/Name)** ED9 / *Integrated Personnel and Pay System - Army Inc 2*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
IPPS-A will complete the design, development, integration, and developer integration test for Release 2.0. Support an Integrated Progress Review (IPR) with Milestone Decision Authority (MDA) for both Releases 3.0 and 4.0. Prepare for IBR, PDR, and CDR. Begin development, integration, and testing activities for Release 3.0.			
Accomplishments/Planned Programs Subtotals	62.831	121.011	155.584

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• System Implementation/Fielding: *OPA - Army Integrated Personnel and Pay System - Army (IPPS-A)*	16.970	4.446	4.214	-	4.214	16.077	46.378	9.503	9.625	3.500	110.713

Remarks

D. Acquisition Strategy

IPPS-A Increment II will be developed in accordance with DoDI 5000.02, Enclosure 12 requirements and will deliver full integrated personnel and pay services for all Army Components (Active, National Guard, and Reserve), building on the trusted database delivered by the IPPS-A Increment I program. IPPS-A Increment II will consist of four releases (Releases 2.0-5.0). Each release will build upon the previous release, providing pre-defined personnel and/or pay capabilities. IPPS-A will pursue a single MS B decision at the start of Increment II and a separate Authorization to Proceed (ATP) at the start of each subsequent release. Each release will also hold separate Preliminary and Critical Design Reviews prior to the start of development and test activities. The Increment II Full Deployment Decision is anticipated at the conclusion of Release 4.0 when the system will provide integrated personnel and pay capabilities.

Release 2.0 - SIDPERS Functionality Only - Release 2.0, begins in FY15 and delivers capability in FY18, building upon Increment I capabilities and provide the functionality from Peoplesoft necessary to subsume the SIDPERS system for all ARNG locations. End-to-end Business Process development considerations will be evaluated to support various HR activities to include, but not be limited to, promotions/demotions, training requirements, member benefits, duty status, and unit level manning.

Release 3.0 - Accountability and Essential Personnel Services - Release 3.0, begins in FY17 and delivers capability in FY19, supporting accountability and essential personnel services necessary to subsume numerous legacy field systems including eMILPO and TAPDB-R. IPPS-A will establish a consolidated system that provides accountability of Soldiers and tracking of all personnel to include deployed Soldiers. It will allow Commanders in the field to access timely, accurate, and standardized personnel data for Soldiers in all components and provide a basic means to identify Soldiers who should be on the payroll. In addition to delivering most of the functions required to establish an Army-wide HR system, Release 3.0 will bring HR payroll drivers on board to enhance accuracy of pay, credit for service, and benefits. IPPS-A will serve as the authoritative data source for all personnel within the system.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	**Project (Number/Name)** ED9 / *Integrated Personnel and Pay System - Army Inc 2*

Release 4.0 - Pay Services - Release 4.0, begins in FY17 and delivers capability in FY20, focusing on pay services and building upon Releases 2.0 and 3.0 to provide the basis for the fully integrated personnel and pay system. IPPS-A will incorporate pay functionality to include, but not be limited to, base pay, taxes, allowances, bonuses, allotments and leave. At deployment, Release 4.0 will serve as the authoritative data source for all personnel and pay transactions within IPPS-A and will be able to produce initial data in support of the Army's audit readiness goals.

Release 5.0 - Personnel Services - Release 5.0, begins in FY18 and delivers capability in FY20, focusing on the personnel services not yet addressed by the previous releases. Specifically, it will incorporate remaining functions related to record evaluation and retention management, along with some predominant manual activities.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	Project (Number/Name) ED9 / *Integrated Personnel and Pay System - Army Inc 2*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPIF	TBD : TBD	0.000	2.749		1.991		3.591		-		3.591	Continuing	Continuing	Continuing
In-house Government Management Support	Allot	Program oversight, resource justification, budget and programming, milestone and schedule tracking : Alexandria, VA	0.000	2.993		5.089		4.047		-		4.047	Continuing	Continuing	Continuing
		Subtotal	0.000	5.742		7.080		7.638		-		7.638	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Licenses - All Others	C/FFP	Various : Various	0.000	2.720		2.802		3.500		-		3.500	Continuing	Continuing	Continuing
Software Licenses - IBM	C/FFP	Immixtechnology, INC. : Mclean, VA	0.000	1.100		0.417		0.438		-		0.438	Continuing	Continuing	Continuing
Software Lincenses - GRC	C/FFP	Mythics : Virginia Beach, VA	0.000	0.906		0.769		0.951		-		0.951	Continuing	Continuing	Continuing
Software License Ab Initio	C/FFP	Various : Various	0.000	-		3.000		0.263		-		0.263	Continuing	Continuing	0
Software Licenses - PeopleSoft Enterprise Licenses	SS/FFP	Oracle America, INC : Reston, VA	0.000	2.348		2.419		0.936		-		0.936	Continuing	Continuing	Continuing
Oracle ULA - Software	C/FFP	Mythics INC. : Virginia Beach, VA	0.000	-		-		1.800		-		1.800	Continuing	Continuing	0
Software Licenses - CA	SS/FFP	ImmixTechnology : McLean, VA	0.000	0.829		0.854		0.897		-		0.897	Continuing	Continuing	Continuing
Software Licenses - Actuate eReport/BIRT	SS/FFP	Actuate Corp : San Mateo, CA	0.000	0.585		0.602		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	Project (Number/Name) ED9 / *Integrated Personnel and Pay System - Army Inc 2*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Product Level SME Consulting Service	SS/FFP	TBD : TBD	0.000	2.158		2.580		2.709		-		2.709	Continuing	Continuing	Continuing
In-house contract support of system development	C/CPFF	TBD : TBD	0.000	10.675		14.812		15.553		-		15.553	Continuing	Continuing	Continuing
Functional In-house contract support of system development - Army National Guard/Army Reserve/FMD	MIPR	Various : Various	0.000	5.000		-		-		-		-	Continuing	Continuing	Continuing
Design, Development, and Integration - Increment II	C/CPIF	CACI, : Chantilly, VA	0.000	7.601		53.982		54.897		-		54.897	Continuing	Continuing	Continuing
Network Support/ Production Hosting Services/Hardware Leasing	MIPR	DEFENSE INFORMATION SYSTEMS AGENCY (DISA) DEFENSE ENTERPRISE COMPUTING CENTER (DECC) : Various	0.000	16.071		15.025		36.722		-		36.722	Continuing	Continuing	0
System Interface	MIPR	Various : Various	0.000	-		7.183		7.542		-		7.542	Continuing	Continuing	0
Peoplesoft V9.2 Talent Management Capability Support	MIPR	TBD : TBD	0.000	-		1.636		1.719		-		1.719	Continuing	Continuing	0
		Subtotal	0.000	49.993		106.081		127.927		-		127.927	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Facilities/Lease/Rents	MIPR	Facilities/Lease/ Rents : Various	0.000	3.128		3.222		4.675		-		4.675	Continuing	Continuing	Continuing
Equipment and Supplies, MISC	Various	Various : Various	0.000	2.987		0.500		1.000		-		1.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	Project (Number/Name) ED9 / *Integrated Personnel and Pay System - Army Inc 2*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	6.115		3.722		5.675		-		5.675	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment II - Government Acceptance Testing/ Operational Test and Evaluation	MIPR	Various Government Agencies : Various	0.000	-		1.761		7.382		-		7.382	64.037	73.180	Continuing
Increment II - Capability Acceptance Testing (CAT)/ DT	Various	Government & Support Contractors : Various	0.000	0.981		2.367		6.962		-		6.962	0	10.310	Continuing
		Subtotal	0.000	0.981		4.128		14.344		-		14.344	64.037	83.490	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	62.831		121.011		155.584		-		155.584	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	**Project (Number/Name)** ED9 / *Integrated Personnel and Pay System - Army Inc 2*

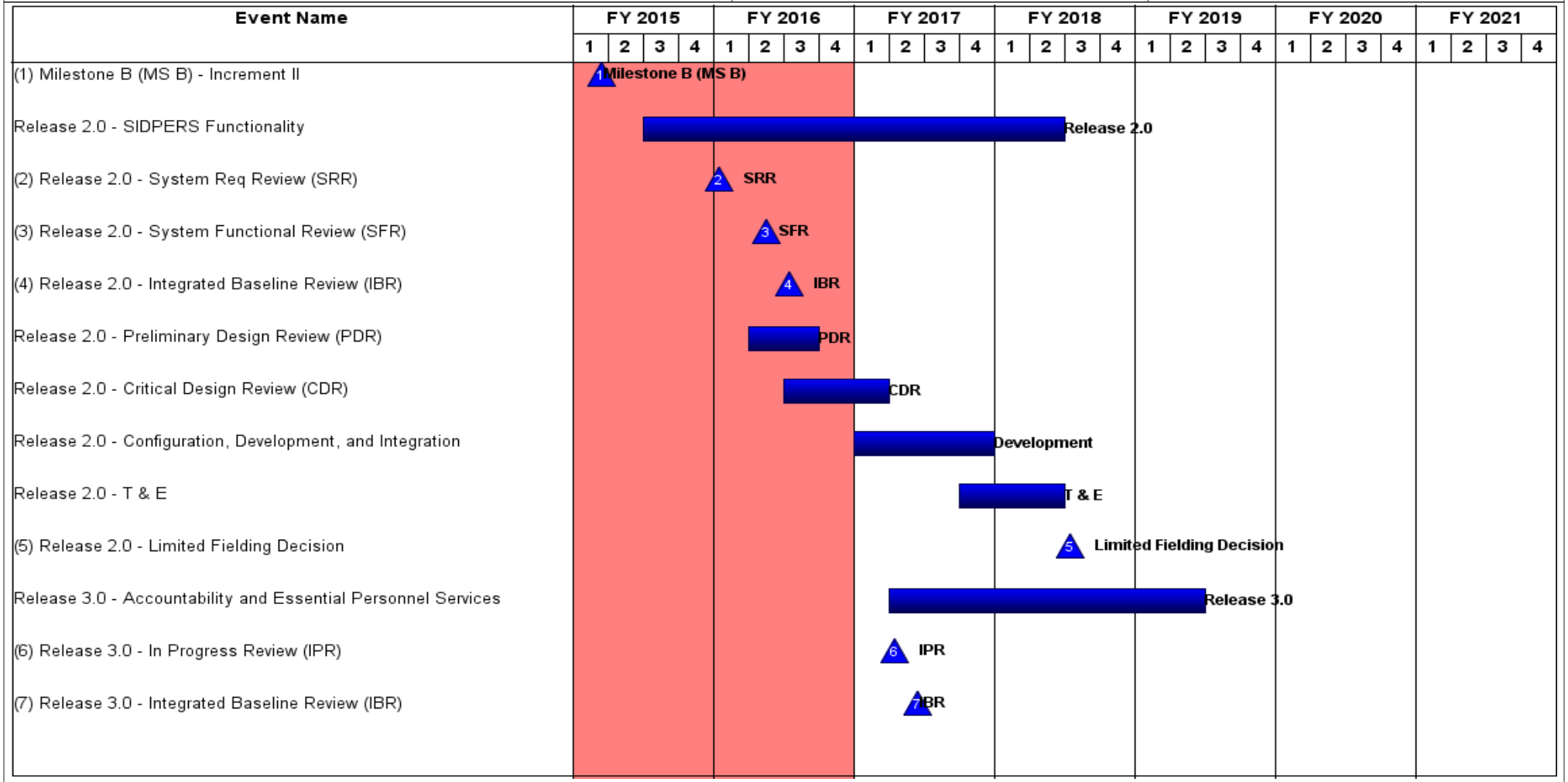

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	**Project (Number/Name)** ED9 / *Integrated Personnel and Pay System - Army Inc 2*

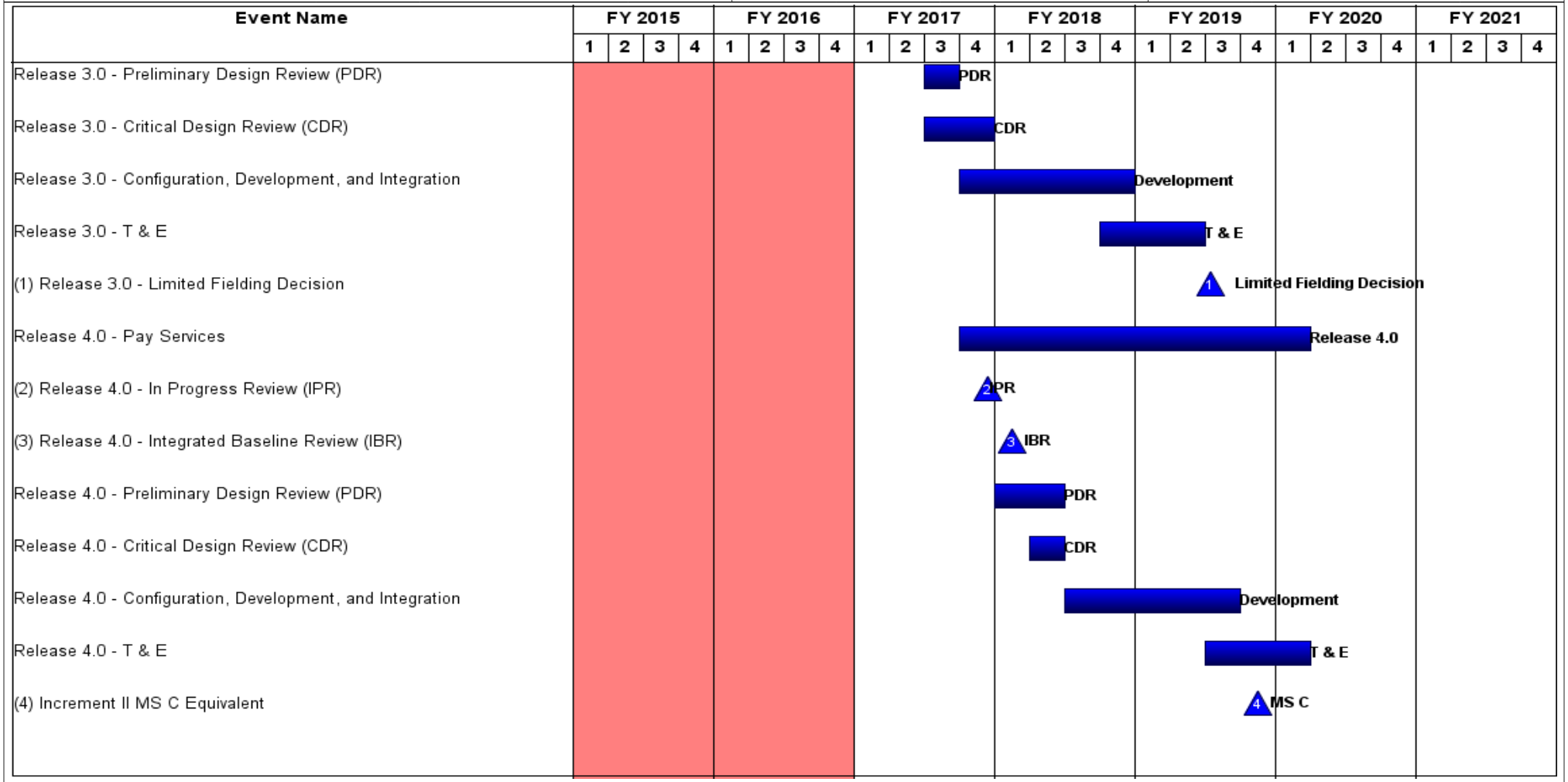

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	**Project (Number/Name)** ED9 / *Integrated Personnel and Pay System - Army Inc 2*

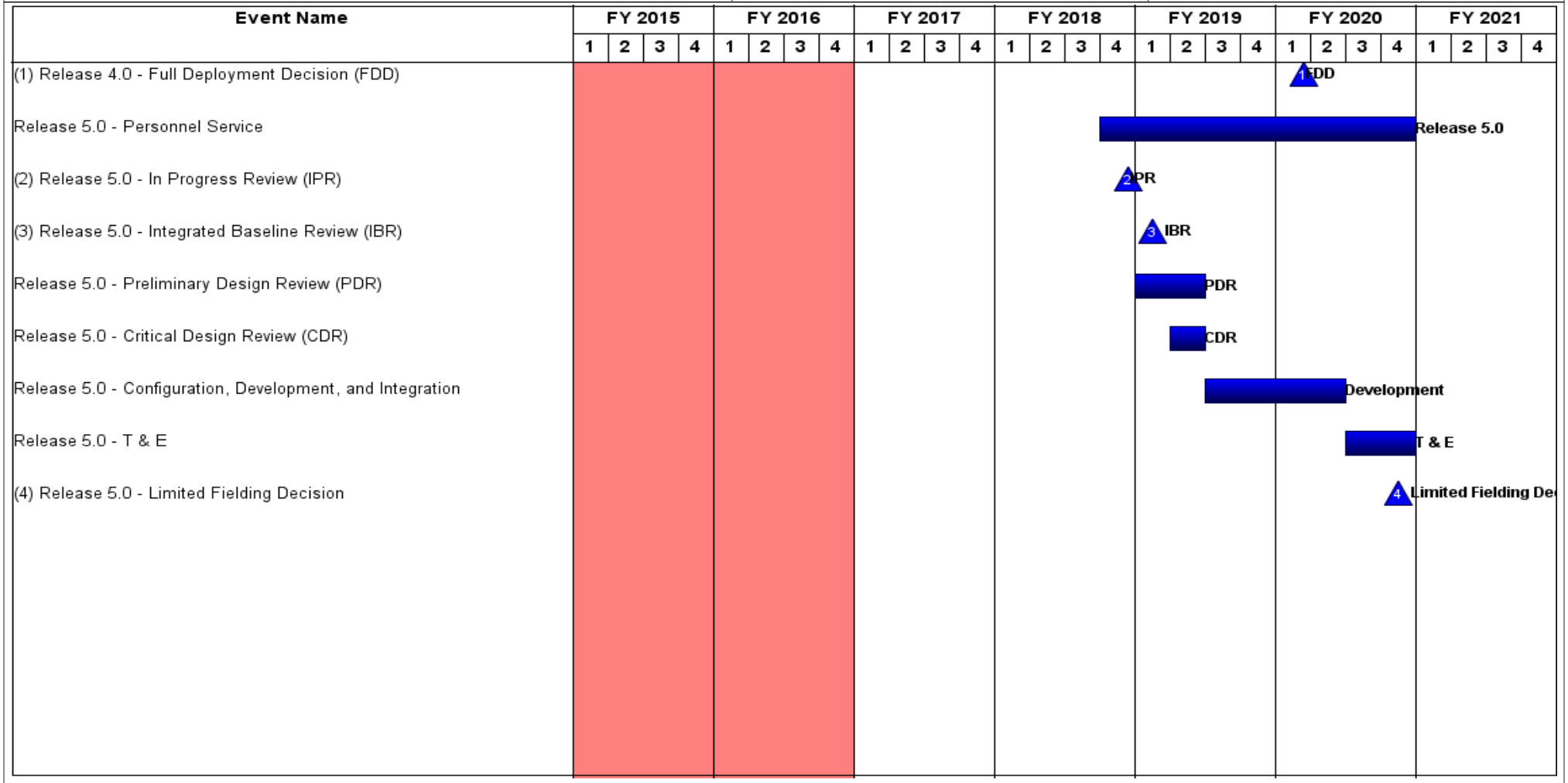

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	**Project (Number/Name)** ED9 / *Integrated Personnel and Pay System - Army Inc 2*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone B (MS B) - Increment II	1	2015	1	2015
Release 2.0 - SIDPERS Functionality	3	2015	2	2018
Release 2.0 - System Req Review (SRR)	1	2016	1	2016
Release 2.0 - System Functional Review (SFR)	2	2016	2	2016
Release 2.0 - Integrated Baseline Review (IBR)	3	2016	3	2016
Release 2.0 - Preliminary Design Review (PDR)	2	2016	3	2016
Release 2.0 - Critical Design Review (CDR)	3	2016	1	2017
Release 2.0 - Configuration, Development, and Integration	1	2017	4	2017
Release 2.0 - T & E	4	2017	2	2018
Release 2.0 - Limited Fielding Decision	3	2018	3	2018
Release 3.0 - Accountability and Essential Personnel Services	2	2017	2	2019
Release 3.0 - In Progress Review (IPR)	2	2017	2	2017
Release 3.0 - Integrated Baseline Review (IBR)	2	2017	2	2017
Release 3.0 - Preliminary Design Review (PDR)	3	2017	3	2017
Release 3.0 - Critical Design Review (CDR)	3	2017	4	2017
Release 3.0 - Configuration, Development, and Integration	4	2017	4	2018
Release 3.0 - T & E	4	2018	2	2019
Release 3.0 - Limited Fielding Decision	3	2019	3	2019
Release 4.0 - Pay Services	4	2017	1	2020
Release 4.0 - In Progress Review (IPR)	4	2017	4	2017
Release 4.0 - Integrated Baseline Review (IBR)	1	2018	1	2018
Release 4.0 - Preliminary Design Review (PDR)	1	2018	2	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605018A / *Integrated Personnel and Pay System-Army (IPPS-A)*	**Project (Number/Name)** ED9 / *Integrated Personnel and Pay System - Army Inc 2*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Release 4.0 - Critical Design Review (CDR)	2	2018	2	2018
Release 4.0 - Configuration, Development, and Integration	3	2018	3	2019
Release 4.0 - T & E	3	2019	1	2020
Increment II MS C Equivalent	4	2019	4	2019
Release 4.0 - Full Deployment Decision (FDD)	1	2020	1	2020
Release 5.0 - Personnel Service	4	2018	4	2020
Release 5.0 - In Progress Review (IPR)	4	2018	4	2018
Release 5.0 - Integrated Baseline Review (IBR)	1	2019	1	2019
Release 5.0 - Preliminary Design Review (PDR)	1	2019	2	2019
Release 5.0 - Critical Design Review (CDR)	2	2019	2	2019
Release 5.0 - Configuration, Development, and Integration	3	2019	2	2020
Release 5.0 - T & E	3	2020	4	2020
Release 5.0 - Limited Fielding Decision	4	2020	4	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	88.797	226.210	184.221	-	184.221	200.809	124.314	95.925	95.226	0.000	1,015.502
EB5: *Armored Multi-Purpose Vehicle*	-	88.797	226.210	184.221	-	184.221	200.809	124.314	95.925	95.226	0.000	1,015.502

Note

The previous program element was 0203735A, Project DS5, Combat Vehicle Improvement Program. FY2014 President's Budget established the new program element, 0605028A, Project EB5, Armored Multi-Purpose Vehicle (AMPV).

A. Mission Description and Budget Item Justification

The Armored Multi-Purpose Vehicle (AMPV) is the materiel solution for replacement of the Army's Armored Personnel Carrier (M113) Family of Vehicles (FoV) within the Armored Brigade Combat Team (ABCT). It will mitigate current and future capability gaps in force protection, mobility, reliability, and interoperability across the Spectrum of Conflict. The AMPV will replace five mission roles currently performed by the M113 FoV by transferring the current M113 Mission Equipment Packages (MEP) to a new Military Vehicle Derivative (MVD) platform. In total, the AMPV FOV will account for approximately 30% of the ABCT's tracked fleet and consists of the following five variants:

1. Mission Command (MCmd) Vehicle: This platform enables effective mission command planning and execution for both the Tactical Operations Center (TOC) and Tactical Command Vehicle (TAC) versions of the MCmd. It will host current Battle Command Systems, future replacements, and upgrades of hardware and software.
2. Medical Treatment (MT) Vehicle: This platform will provide a protected surgical environment, with adequate lighting and accessible medical equipment. It will provide a capability for immediate medical care for one patient by a medical crew of four.
3. Medical Evacuation (ME) Vehicle: This platform will conduct ambulance type activities and provide casualty evacuation for up to four litter or six ambulatory patients, with a crew of three medical attendants.
4. General Purpose (GP) Vehicle: This platform will operate throughout the battle space by conducting re-supply, maintenance, casualty evacuation, and other tasks within the formation.
5. Mortar Carrier (MC) Vehicle: This platform will provide immediate responsive fire support to conduct fast-paced offensive operations.

The AMPV program has been initiated on the basis of a Capability Development Document (CDD) that was approved on 21 June 2013. The CDD reflects a set of stable, technologically achievable requirements. A Milestone B (MS B) Defense Acquisition Board (DAB) was held on 9 December 2014 and it was followed by an Acquisition Decision Memorandum (ADM) that was signed on 22 December 2014. The ADM approved MS B for the AMPV program and entry into the Engineering and Manufacturing Development (EMD) phase. In addition, the ADM authorized the Army to proceed with award of the EMD prime contract, which occurred on 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). The FY2015 Accomplishments described below largely reflect the lead-up to the Preliminary Design Review (PDR) and initiation of detailed design activities. Included are efforts that are related to the preparation and review of all PDR artifacts, as well as efforts related to PDR close-out. The FY2016 Planned Program is primarily related to efforts that support the Critical Design Review (CDR) and, following CDR, the procurement of prototype

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605028A *I Armored Multi-Purpose Vehicle (AMPV)*

hardware. The FY2017 Planned Program is related to the integration, assembly, and delivery of 29 full system prototypes and the initiation of the AMPV development test program.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	92.309	230.210	185.505	-	185.505
Current President's Budget	88.797	226.210	184.221	-	184.221
Total Adjustments	-3.512	-4.000	-1.284	-	-1.284
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.512	-			
• Adjustments to Budget Years	-	-	-1.284	-	-1.284

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	Project (Number/Name) EB5 / *Armored Multi-Purpose Vehicle*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EB5: *Armored Multi-Purpose Vehicle*	-	88.797	226.210	184.221	-	184.221	200.809	124.314	95.925	95.226	0.000	1,015.502
Quantity of RDT&E Articles	-	-	-	29	-	29	-	-	-	-		

Note

The previous program element was 0203735A, Project DS5, Combat Vehicle Improvement Program. FY2014 President's Budget established the new program element, 0605028A, Project EB5, Armored Multi-Purpose Vehicle (AMPV).

A. Mission Description and Budget Item Justification

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1. Mission Command (MCmd) Vehicle: This platform enables effective mission command planning and execution for both the Tactical Operations Center (TOC) and Tactical Command Vehicle (TAC) versions of the MCmd. It will host current Battle Command Systems, future replacements, and upgrades of hardware and software.
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The AMPV program has been initiated on the basis of a Capability Development Document (CDD) that was approved on 21 June 2013. The CDD reflects a set of stable, technologically achievable requirements. A Milestone B (MS B) Defense Acquisition Board (DAB) was held on 9 December 2014 and it was followed by an Acquisition Decision Memorandum (ADM) that was signed on 22 December 2014. The ADM approved MS B for the AMPV program and entry into the Engineering and Manufacturing Development (EMD) phase. In addition, the ADM authorized the Army to proceed with award of the EMD prime contract, which occurred on 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). The FY2015 Accomplishments described below largely reflect the lead-up to the Preliminary Design Review (PDR) and initiation of detailed design activities. Included are efforts that are related to the preparation and review of all PDR artifacts, as well as efforts related to PDR close-out. The FY2016 Planned Program is primarily related to efforts that support the Critical Design Review (CDR) and, following CDR, the procurement of prototype

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	**Project (Number/Name)** EB5 / *Armored Multi-Purpose Vehicle*

hardware. The FY2017 Planned Program is related to the integration, assembly, and delivery of 29 full system prototypes and the initiation of the AMPV development test program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Armored Multi-Purpose Vehicle (AMPV) Product Development	64.439	195.377	134.033

Description: AMPV Product Development costs include all efforts provided under the AMPV EMD prime contract along with Government Furnished Material (GFM). Significant examples of prime contract effort include: development engineering, system engineering/program management, prototype hardware procurement, prototype system level fabrication and integration, software development, support to the government test program, and oversight of subcontractors/suppliers. Also included are all efforts performed by subcontractors/suppliers who are under contract to the AMPV EMD prime contractor.

FY 2015 Accomplishments:
Following award of the AMPV EMD contract in 1QFY2015, the prime contractor initiated and completed detailed planning efforts that culminated in a Performance Measurement Baseline (PMB) and related Integrated Master Schedule (IMS). These were validated through a government led Integrated Baseline Review (IBR) 4QFY2015. The prime contractor supported the IBR. The prime contractor awarded key subsystem and component level provider contracts early 2QFY2015. A formal start-of-work meeting took place 2QFY2015 and work commenced on the vehicle design. A Preliminary Design Review (PDR) occurred 15-18 June 2015. Approximately 30 artifacts were generated and delivered in support of PDR. Following successful completion of the PDR, the prime contractor commenced detailed design activities and began to order low risk hardware that have long lead times. The prime contractor operated in an Integrated Product Team (IPT) environment and used tools such as Earned Value Management and Technical Performance Measures to evaluate and report cost, schedule, and technical status.

FY 2016 Plans:
The prime contractor will continue to operate in an Integrated Product Team (IPT) environment consisting of eight unique teams. The prime contractor will support team meetings and reviews and will report program progress through the use of Earned Value Management (EVM) and Technical Performance Measures (TPMs). Based on successful completion of the PDR, activities have transitioned to detailed design of components and subsystems in FY2016. These detailed design efforts will be focused on integration of existing components into the AMPV chassis, which will be tailored to the five mission roles. Final prototype designs and related drawings will be completed early in FY2016. In addition, as nearly all of the subsystems that will be integrated into the prototype structures will be existing designs, most of the hardware at a component level is expected to be ordered in 2QFY2016. Integration of these components into subsystems will commence 3QFY2016 and will be mostly complete by 4QFY2016. Prototype final integration, assembly, and checkout will be initiated to allow full vehicle prototypes to begin to be delivered late 1QFY2017. In addition to prototype development and fabrication, the engineering work will be focused on the Critical Design Review (CDR), which will occur in 3QFY2016. All artifacts that support CDR will be developed and delivered to the government 60 days prior to the review. Approximately 50 artifacts are expected to be delivered in support of CDR. Government Furnished Material for the system prototypes, mainly consisting of Mission Equipment Packages and communication hardware, will be procured by

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	**Project (Number/Name)** EB5 / *Armored Multi-Purpose Vehicle*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
2QFY2016. Final builds for armor coupons and ballistic hull test articles will be completed to support live fire/survivability testing in FY17. ***FY 2017 Plans:*** Prototype efforts in FY2017 will consist of the integration, assembly, checkout, and shipment of 29 full system prototype vehicles. The prime contractor will support the de-processing, functional testing, instrumentation, training, fielding and maintenance of the prototypes at government test sites. In addition, for each of the first 5 prototype vehicles, the prime contractor will conduct 1,500 miles of shakedown testing prior to beginning government run system level tests. Also related to the prototype vehicles, the prime contractor will deliver and manage System Support Packages (SSPs) that consist of the necessary spare parts required to facilitate government testing. From an engineering perspective, the prime contractor will make informed design changes to respond to hardware and software upgrades and CDD updates, as well as utilize knowledge gained from system level testing to update vehicle designs, as required. Any updates will be presented in an Interim Design Review (IDR), currently planned for early 2QFY2018. In addition, the Vehicle Tactical Integration Lab (VTIL) and the Computer Software Integration Lab (CSIL) will continue to be used to trouble-shoot any emerging issues and, if necessary, verify design updates. During FY2017, the final three software builds will be delivered. These builds are primarily expected to be clean-up builds that will resolve any problems uncovered during system level testing. The prime contractor will perform significant work related to Logistics/Product Support in FY2017. This will include an update to the Level of Repair Analysis (LORA), provisioning of repair parts, development of packaging information, training at test sites, and the validation of technical manual tasks in preparation for the Logistics Demonstration starting in 2QFY2018. Logistics related documentation to be completed by BAE in FY2017 includes the Logistics Demonstration Plan, System Demilitarization and Disposal Plan, Preservation and Storage of Unique Tooling, Core Logistics Assessment, Core Depot Assessment, Depot Source of Repair, and Analysis of Product Support Alternatives.			
Title: AMPV Government Program Management Costs ***Description:*** AMPV Government Program Management costs include efforts to provide Government oversight of the AMPV program. This includes Systems Engineering and Program Management. Government and support Contractor salaries are included, as well as travel and other support costs that are required to effectively manage the program. Costs in this category do not include Government Furnished Material or efforts that are specific and unique to end item testing that is performed at Government test locations. ***FY 2015 Accomplishments:*** Following award of the AMPV EMD prime contract, the AMPV Project Management Office (PMO) initiated oversight to the EMD contractor. Integrated Product Teams (IPTs) began oversight of the development efforts of the EMD contractor in order to monitor and track technical progress. This included review and acceptance of all formal contract deliverables. Of note were the conduct of the Systems Requirements Review and the review of approximately 30 deliverables in support of the Preliminary Design Review	24.358	23.847	25.414

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	**Project (Number/Name)** EB5 / *Armored Multi-Purpose Vehicle*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
(PDR) which occurred 3QFY2015. In addition, the Government management team led the Integrated Baseline Review (IBR), conducted 4QFY2015. ***FY 2016 Plans:*** Provide integrated program management for all development activities, to include providing oversight to the Engineering Manufacturing and Development (EMD) contractor. Eight AMPV Integrated Product Teams (Program Management; Business Management; Engineering; Product Assurance and Test; Reliability, Availability, Maintainability (RAM) Product Support; Product Support Management; Manpower and Personnel Integration; and Government Furnished Material) will continue to oversee the technical development efforts of the EMD contractor in order to monitor and track technical progress related to the development of the various subsystems. This includes review and acceptance of all formal contract deliverables. The AMPV Earned Value Management (EVM) team will continue to evaluate cost and schedule performance against the established Performance Measurement Baseline (PMB) and Integrated Master Schedule (IMS). An emphasis for the Government team in FY2016 will be on supporting the contractor's Critical Design Review (CDR), currently planned for 3QFY2016. ***FY 2017 Plans:*** Provide integrated program management for all development activities, to include providing oversight to BAE. Eight Integrated Product Teams will continue to oversee the technical development efforts of BAE in order to monitor and track technical progress related to the development of the various subsystems. This includes review and acceptance of all formal contract deliverables. The AMPV Earned Value Management (EVM) team will continue to evaluate cost and schedule performance against the established Performance Measurement Baseline (PMB) and Integrated Master Schedule (IMS). Areas of emphasis for the Government team in FY2017 include inspection and acceptance of 29 full system vehicle prototypes, management and oversight of the system level testing program, and preparation for the Logistics Demonstration in early FY2018. Significantly, Government efforts in FY2017 will begin to transition from being engineering focused to being focused on testing and product support.			
Title: Government Test Costs ***Description:*** Government Test costs are for efforts required to perform and validate system-related tests. This element includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing. Also included are costs necessary to acquire data during the conduct of the Government tests. The actual test articles (i.e., functionally configured systems) are excluded from this element. Also excluded are prime contractor costs incurred in support of the Government system level test. ***FY 2016 Plans:*** Acquire Government Furnished Material (GFM) and construct/integrate three base stations for use at Government test sites. Base stations consist of radios, displays, input devices and other related hardware necessary to monitor tests and to collect data.	-	6.986	24.774

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	**Project (Number/Name)** EB5 / *Armored Multi-Purpose Vehicle*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
GFM must be on-hand by 3QFY2016 and base stations must be available at test sites by 4QFY2016 so that tests can commence January, 2017. ***FY 2017 Plans:*** System level detailed planning will conclude with the Developmental Test Readiness Review (DTRR) in 3QFY2017. Other system level test milestones include the Blue Team Vulnerability Assessment in 3QFY2017 and the Reliability, Availability, and Maintainability (RAM) In-Process Review (IPR) in 4QFY2017. System level Live Fire Test & Evaluation will begin with Ballistic Hull testing that will be conducted 1Q-2QFY2017. EMD Prototypes will be delivered to Army proving grounds and Government Developmental Testing will begin 3QFY2017. Government full system prototype vehicle testing will commence with mortar carrier ballistic firing tests. In addition to the prototype vehicles utilized for Technical Manual validation, another 12 prototype vehicles will begin system level testing in FY2017. Besides mortar carrier ballistic similitude tests, initial system level testing will focus on system reliability and automotive performance. The Government will begin requirements verification efforts with emerging prototype test data and failure review boards will be initiated, as needed. Test ammunition and test threat management, forecasting, and procurement will continue for future test efforts.			
Accomplishments/Planned Programs Subtotals	88.797	226.210	184.221

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Armored Multi Purpose Vehicle(AMPV): *Armored Multi Purpose Vehicle(AMPV) G80819*	-	-	-	-	-	193.715	397.355	495.713	691.216	11,079.085	12,857.084

Remarks

D. Acquisition Strategy

The Armored Multi-Purpose Vehicle (AMPV) program entered the acquisition process at Milestone B. This was accomplished via an Acquisition Decision Memorandum (ADM) that was signed on 22 December 2014. The ADM also authorized the Army to proceed with award of the Engineering and Manufacturing Development (EMD) prime contract with three Low Rate Initial Production (LRIP) options. The contract was awarded on 23 December 2014 to BAE Systems Land & Armaments, L.P. (BAE). The award was on a competitive basis utilizing formal Source Selection Evaluation Board (SSEB).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	Project (Number/Name) EB5 / *Armored Multi-Purpose Vehicle*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Development Engineering	C/CPIF	BAE : Sterling Heights, MI	0.000	64.439	Dec 2014	45.886	Dec 2015	48.283	Dec 2016	-		48.283	35.890	194.498	0
Prototype Material Contractor	C/CPIF	BAE : Sterling Heights, MI	0.000	-		78.998	Dec 2015	18.444	Dec 2016	-		18.444	27.839	125.281	0
Prototype Material Government Furnished	Various	Various : .	0.000	-		21.192	Dec 2015	-		-		-	3.620	24.812	0
Contractor System Engineering, Data, Test and Program Management	C/CPIF	BAE : Sterling Heights, MI	0.000	-		49.301	Dec 2015	67.306	Dec 2016	-		67.306	248.075	364.682	0
		Subtotal	0.000	64.439		195.377		134.033		-		134.033	315.424	709.273	0.000

Remarks

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

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	PMO : Warren, MI	27.345	24.358	Dec 2014	23.847	Dec 2015	25.414	Dec 2016	-		25.414	57.997	158.961	0
		Subtotal	27.345	24.358		23.847		25.414		-		25.414	57.997	158.961	0.000

Remarks

Armored Multi Purpose Vehicle Support Costs.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Testing	MIPR	Various : .	0.000	-		6.986	Dec 2015	24.774	Dec 2016	-		24.774	142.853	174.613	0
		Subtotal	0.000	-		6.986		24.774		-		24.774	142.853	174.613	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	Project (Number/Name) EB5 / *Armored Multi-Purpose Vehicle*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	27.345	88.797		226.210		184.221		-		184.221	516.274	1,042.847	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	**Project (Number/Name)** EB5 / *Armored Multi-Purpose Vehicle*

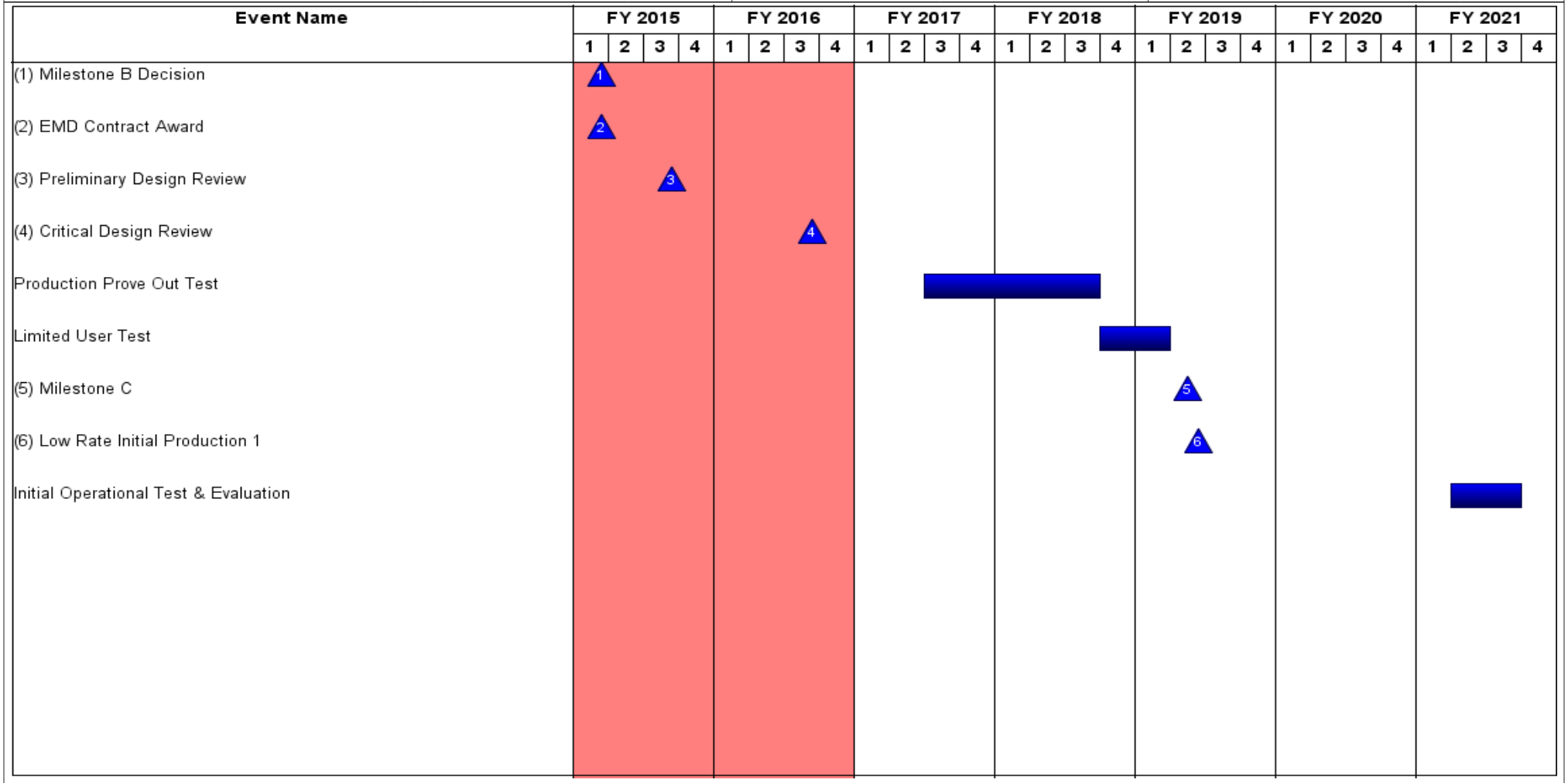

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605028A / *Armored Multi-Purpose Vehicle (AMPV)*	**Project (Number/Name)** EB5 / *Armored Multi-Purpose Vehicle*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone B Decision	1	2015	1	2015
EMD Contract Award	1	2015	1	2015
Preliminary Design Review	3	2015	3	2015
Critical Design Review	3	2016	3	2016
Production Prove Out Test	3	2017	3	2018
Limited User Test	4	2018	1	2019
Milestone C	2	2019	2	2019
Low Rate Initial Production 1	2	2019	2	2019
Initial Operational Test & Evaluation	2	2021	3	2021

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605029A *I Integrated Ground Security Surveillance Response Capability (IGSSR-C)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	4.980	-	4.980	2.100	1.774	0.000	0.000	0.000	8.854
EQ2: *IntegGrdSecSurvRespC(IGSSR-C)*	-	0.000	0.000	4.980	-	4.980	2.100	1.774	0.000	0.000	0.000	8.854

Note

Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) was previously funded in Integrated Base Defense (IBD) Program Element: 0205402A EF2. This is not a new start program in FY17.

A. Mission Description and Budget Item Justification

IGSSR-C: The Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) is an Automated Information System (AIS) program. IGSSR-C has a requirement to provide a layered approach to integrate sensors, sensor systems and unmanned systems with automated fusion capabilities. The system will provide a Force Protection (FP) Common Operational Picture (COP) capability for CONUS fixed, OCONUS semi-fixed or expeditionary elements in all Operating Environments (OE).

This capability will enable rapid decision analysis, speed the response process as well as increase information dissemination horizontally and vertically along the chain of command and with outside supporting organizations. IGSSR-C is a software centric fusion engine that connects legacy and emerging FP systems, legacy Chemical, Biological, Radiological, and Nuclear (CBRN), unmanned systems, biometric identification and forensic data systems. The desired end state is to achieve interoperability and COP with current and emerging FP systems used by Joint Forces, Department of Defense (DoD) agencies and multi-national forces.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	4.980	-	4.980
Total Adjustments	0.000	0.000	4.980	-	4.980
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	4.980	-	4.980

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605029A *I Integrated Ground Security Surveillance Response Capability (IGSSR-C)*

Change Summary Explanation

Increase in FY 2017 is due to funding being realigned from Integrated Base Defense (IBD) Program Element: 0205402A Project EF2 for Integrated Ground Security, Surveillance and Response Capability (IGSSR-C).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605029A / *Integrated Ground Security Surveillance Response Capability (IGSSR-C)*	Project (Number/Name) EQ2 / *IntegGrdSecSurvRespC(IGSSR-C)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EQ2: *IntegGrdSecSurvRespC(IGSSR-C)*	-	0.000	0.000	4.980	-	4.980	2.100	1.774	0.000	0.000	0.000	8.854
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) was previously funded in Integrated Base Defense (IBD) Program Element: 0205402A EF2. This is not a new start program in FY17.

A. Mission Description and Budget Item Justification

IGSSR-C: The Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) is an Automated Information System (AIS) program. IGSSR-C has a requirement to provide a layered approach to integrate sensors, sensor systems and unmanned systems with automated fusion capabilities. The system will provide a Force Protection (FP) Common Operational Picture (COP) capability for CONUS fixed, OCONUS semi-fixed or expeditionary elements in all Operating Environments (OE).

This capability will enable rapid decision analysis, speed the response process as well as increase information dissemination horizontally and vertically along the chain of command and with outside supporting organizations. IGSSR-C is a software centric fusion engine that connects legacy and emerging FP systems, legacy Chemical, Biological, Radiological, and Nuclear (CBRN), unmanned systems, biometric identification and forensic data systems. The desired end state is to achieve interoperability and COP with current and emerging FP systems used by Joint Forces, Department of Defense (DoD) agencies and multi-national forces.

FY 2017 Base Funding in the amount of $4.980 million supports the development of release 3 of the Integrated Ground Security, Surveillance and Response – Capability (IGSSR-C) software baseline which is focused on Key System Attributes (KSAs) and Additional Performance Parameters (APAs), completion of the Critical Design Review (CDR), initiation of the training analysis and development, development of three prototype hardware platforms and for developmental testing events.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: IGSSR-C Design and Development	-	-	4.980
Description: Completes IGSSR-C design efforts and initiates software integration activities.			
FY 2017 Plans: Complete IGSSR-C design efforts and initiates software integration activities.			
Accomplishments/Planned Programs Subtotals	-	-	4.980

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605029A / *Integrated Ground Security Surveillance Response Capability (IGSSR-C)*	**Project (Number/Name)** EQ2 / *IntegGrdSecSurvRespC(IGSSR-C)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• IGSSR-C (M90106): *IGSSR-C (M90106)*	-	-	-	-	-	1.766	3.566	8.990	7.084	Continuing	Continuing
• Integrated Base Defense (0205402A): *Integrated Base Defense (0205402A)*	4.196	10.750	-	-	-	-	-	-	-	0	14.946

Remarks

Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) was previously funded in Integrated Base Defense (IBD) Program Element: 0205402A EF2, which was a shared funding line between IGSSR-C, Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)), and Integrated Base Defense (IBD). IGSSR-C portion was $3.500 million in FY 2016.

D. Acquisition Strategy

The Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) provides a layered approach to integrate sensors, sensor systems and unmanned systems. The IGSSR-C Capability Design Document (CDD) was approved September 2013. IGSSR-C is made up of a suite of software that achieves integration, fusion and interoperability in support of the Army Acquisition Executive's Common Operating Environment (COE) Command Post Compute Environment (CPCE) and Sensor CE efforts.

In FY 2014, the Department of Defense (DoD) Physical Security Enterprise and Analysis Group (PSEAG) provided funds to conduct pre-milestone B activities. IGSSR-C received an approved Materiel Development Decision (MDD) from the Milestone Decision Authority (MDA) on 4 December 2015. The acquisition strategy for FY 2017 is pending approval from the MDA, with plans to leverage the Night Vision and Electronic Sensors Directorate (NVESD), Fort Belvoir, Virginia to develop, integrate and test the Initial Capability (IC). No production activities are planned for FY 2017. Milestone C is planned for FY 2019 to align Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)), Tactical Security System (TSS) and Integrated Ground Security, Surveillance and Response Capability (IGSSR-C) in order to gain programmatic efficiencies.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605029A / *Integrated Ground Security Surveillance Response Capability (IGSSR-C)*	Project (Number/Name) EQ2 / *IntegGrdSecSurvRespC(IGSSR-C)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IGSSR-C Project Management	MIPR	PM EO/IR : Fort Belvoir, VA	0.000	-		-		0.151	Dec 2016	-		0.151	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.151		-		0.151	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IGSSR-C Design	TBD	TBD : TBD	0.000	-		-		1.873	Dec 2016	-		1.873	Continuing	Continuing	Continuing
IGSSR-C Prototypes	TBD	TBD : TBD	0.000	-		-		1.865	Dec 2016	-		1.865	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		3.738		-		3.738	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IGSSR-C Design Support	MIPR	RDECOM CERDEC : Fort Belvoir, VA	0.000	-		-		0.505	Dec 2016	-		0.505	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.505		-		0.505	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IGSSR-C Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	0.000	-		-		0.586	Dec 2016	-		0.586	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.586		-		0.586	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605029A / *Integrated Ground Security Surveillance Response Capability (IGSSR-C)*	Project (Number/Name) EQ2 / *IntegGrdSecSurvRespC(IGSSR-C)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		4.980		-		4.980	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605029A / *Integrated Ground Security Surveillance Response Capability (IGSSR-C)*	**Project (Number/Name)** EQ2 / *IntegGrdSecSurvRespC(IGSSR-C)*

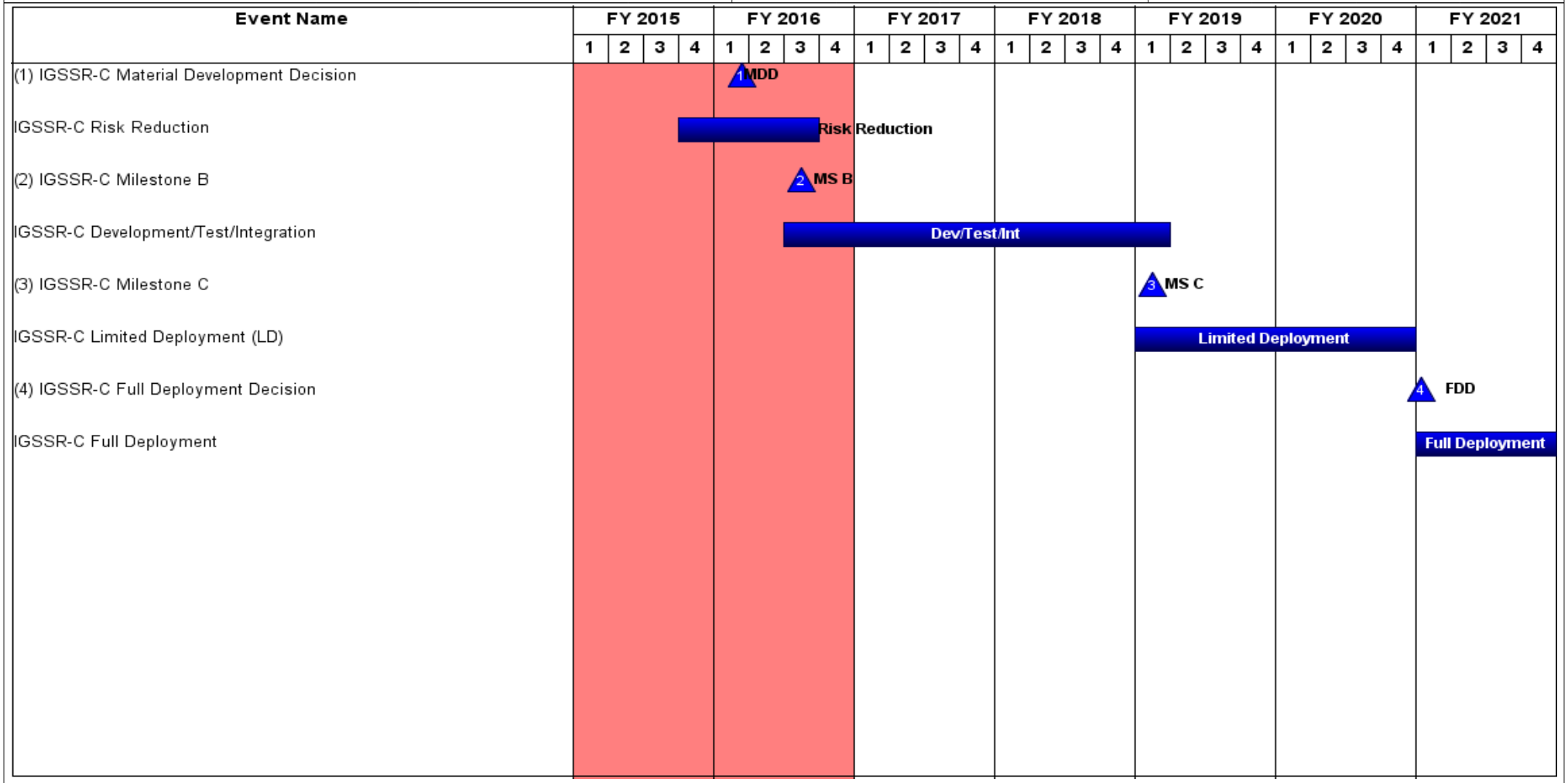

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605029A / *Integrated Ground Security Surveillance Response Capability (IGSSR-C)*	**Project (Number/Name)** EQ2 / *IntegGrdSecSurvRespC(IGSSR-C)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IGSSR-C Material Development Decision	1	2016	1	2016
IGSSR-C Risk Reduction	4	2015	3	2016
IGSSR-C Milestone B	3	2016	3	2016
IGSSR-C Development/Test/Integration	3	2016	1	2019
IGSSR-C Milestone C	1	2019	1	2019
IGSSR-C Limited Deployment (LD)	1	2019	4	2020
IGSSR-C Full Deployment Decision	1	2021	1	2021
IGSSR-C Full Deployment	1	2021	4	2022

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605030A *I Joint Tactical Network Center (JTNC)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	8.615	13.357	15.041	-	15.041	5.393	5.518	5.639	5.793	Continuing	Continuing
EA8: *Joint Tactical Network Center (JTNC)*	-	8.615	13.357	15.041	-	15.041	5.393	5.518	5.639	5.793	Continuing	Continuing

Note

In FY 2013, the Joint Tactical Networking Center (JTNC) and Joint Tactical Networks (JTN) were funded in the Navy Program Element (PE) 0604280N (Joint Tactical Radio System (JTRS)), Project No.3076 (formally known as JTRS Network Enterprise Domain (JNED)). JNED was renamed JTN and the Joint Executive Program Office (JPEO) JTRS transitioned to the JTNC in FY 2013, in accordance with the Acquisition Decision Memorandum (ADM) dated 11 July 2012. FY 2013 and FY 2014 JTNC funding was provided by the JTN Program via PE 0604280N and PE 0605030A, respectively.

In accordance with the Acquisition Decision Memorandum (ADM) and Charter dated 20 January 2014, the JTNC Program will remain under a joint budget strategy funded by the three MILDEPs (funding resides in Army PE 0605030A, Navy PE 0605030N, shared line, and Air Force PE 0605030F, shared line). As part of the joint program budget strategy, each MILDEP budgets for approximately one-third of the total program RDT&E funds. Prior to the year of execution, the JTNC funding is consolidated in Army PE 0605030A for execution. FY2015-FY2017 reflects the full funding for JTNC. FY2018 and out reflects the Army share of the budget requirement.

A. Mission Description and Budget Item Justification

The JTNC is responsible for ensuring interoperable, secure, and affordable waveform and wireless communications by recommending standards, conducting compliance and certification assessments in accordance with Department of Defense (DoD) policies, and maintaining a DoD Waveform Information Repository (IR). JTNC (1) provides DoD Waveform Standards and Software Communications Architecture (SCA), (2) DoD Waveform IR management and configuration control, (3) technical assessments of DoD Waveform IR products, and (4) serves as a technical advisor to the JTNC Board of Directors (BoD).

This mission is executed in conjunction with other government agencies to include the National Security Agency (NSA), the Joint Interoperability Test Command (JITC), and the National Telecommunication and Information Administration (NTIA), as well as the Services. Particular attention is paid to ensuring that interagency work is collaborative and eliminates duplicative capability. JTNC efforts support Software Defined Radio (SDR) programs and industry. JTNC enables a common software baseline that is hardware agnostic leading to increased competition.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0605030A *I Joint Tactical Network Center (JTNC)*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	8.436	13.357	5.201	-	5.201
Current President's Budget	8.615	13.357	15.041	-	15.041
Total Adjustments	0.179	0.000	9.840	-	9.840
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.179	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	9.840	-	9.840

Change Summary Explanation

FY15 increase to meet BoD approved mission requirements. FY17 increase is the consolidation of other Service funding into the Army PE for execution. In accordance with the Acquisition Decision Memorandum (ADM) and Charter dated 20 January 2014, the JTNC Program will remain under a joint budget strategy funded by the three MILDEPs (funding is in Army PE 0605030A, Navy PE 0605030N, and Air Force PE 0605030F). As part of the joint program budget strategy, each MILDEP budgets for approximately one-third of the total program RDT&E funds. Prior to the year of execution, the JTNC funding is consolidated in Army PE 0605030A for execution.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605030A / *Joint Tactical Network Center (JTNC)*	Project (Number/Name) EA8 / *Joint Tactical Network Center (JTNC)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EA8: *Joint Tactical Network Center (JTNC)*	-	8.615	13.357	15.041	-	15.041	5.393	5.518	5.639	5.793	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY2015 and beyond contains funding only for JTNC. Prior to FY2015, JTNC funding consisted of shared lines with the Joint Tactical Networks (JTN) program. In FY 2014, PE 0605030A contains shared funding for JTN and JTNC. In FY2013, JTNC was funded via PE 0604280N. FY2015-FY2017 reflects the full JTNC requirement with the consolidated funding from the other Services. FY2018 and out reflects only the Army portion of the JTNC budget.

A. Mission Description and Budget Item Justification

The JTNC is responsible for ensuring interoperable, secure, and affordable waveform and wireless communications by recommending standards, conducting compliance and certification assessments in accordance with Department of Defense (DoD) policies, and maintaining a DoD Waveform Information Repository (IR). JTNC (1) provides DoD Waveform Standards and Software Communications Architecture (SCA), (2) DoD Waveform IR management and configuration control, (3) technical assessments of DoD Waveform IR products, and (4) serves as a technical advisor to the JTNC Board of Directors (BoD).

This mission is executed in conjunction with other government agencies to include the National Security Agency (NSA), the Joint Interoperability Test Command (JITC), and the National Telecommunication and Information Administration (NTIA), as well as the Services. Particular attention is paid to ensuring that interagency work is collaborative and eliminates duplicative capability. JTNC enables a common software baseline that is hardware agnostic leading to increased competition for Software Defined Radios.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: JTNC IR Engineering Development and Program Management Support	8.615	13.357	15.041
Description: Joint Tactical Networking Center (JTNC) will achieve alignment with the JTNC BoD, USD(AT&L), DoD CIO, Joint Staff, the Services, and other key stakeholders for those JTNC chartered processes that ensure interoperable, secure, and affordable waveform and wireless communications. Facilitate the reuse of waveform and wireless communications and foster product capability improvements by making government owned waveform and wireless communications products available to developers. Provide open architecture DoD Waveform Standards in support of service, multi-service, and coalition forces. Provide certification recommendations on wireless communications products in support of service, multiservice, and coalition forces. Foster a culture of continuous improvement through the application of techniques such as Lean Six Sigma (LSS), efficiency recommendations, and use of common processes, to achieve efficiencies on behalf of JTNC customers.			
FY 2015 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605030A / *Joint Tactical Network Center (JTNC)*	**Project (Number/Name)** EA8 / *Joint Tactical Network Center (JTNC)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Completed the SRW V1.01.1 assessment process pilot and implemented lessons learned. Completed SINCGARV2.0 assessment and received JTNC Board of Directors approval to induct SRW v1.01.1 into the DoD Waveform Information Repository (IR). Opened the DoD Waveform IR for requests, receipt, and processing. Successfully submitted and had 6 standards and 16 Application Program Interfaces (APIs) listed in the DoD IT Standards Registry (DISR) as mandatory standards. Transitioned the PM JTN Developmental IR to JTNC management. Supported export requests and assessments of products for exportability. ***FY 2016 Plans:*** Complete analyses on 2 waveforms to include: Mobile Objective User System (MUOS) v3.1.3 and Wideband Networking Waveform (WNW) v4.2. Initiate analysis of Link-16 vCMN4. Validate start requirements for Standard Common Data Link (STD CDL) and SRW v1.2.2 in preparation for future analysis. Evolve DoD Waveform Standards to facilitate common development, interoperability and re-use. Support export requests and assessments of products for exportability. ***FY 2017 Plans:*** Complete analyses on Service prioritized waveforms for induction into the DoD Waveform IR. Evolve DoD Waveform Standards to facilitate common development, interoperability and re-use. Support export requests and assessments of products for exportability.			
Accomplishments/Planned Programs Subtotals	8.615	13.357	15.041

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0605030N: *0605030N: JTNC, RDTE,N*	-	-	-	-	-	4.528	4.620	4.714	4.823	Continuing	Continuing
• 0605030F: *0605030F: JTNC, RDTE,F*	-	-	-	-	-	5.585	5.698	5.811	5.968	Continuing	Continuing

Remarks

In FY 2013, the Joint Tactical Networking Center (JTNC) was funded in the Navy Program Element (PE) 0604280N, Project No. 3076 formally known as Joint Tactical Radio System (JTRS) Network Enterprise Domain (JNED). This was a shared line with PM Joint Tactical Networks (JTN). In FY 2014, the funding that resided in Army PE 0605030A represented the total JTNC and PM JTN Budget. In FY 2015 PE 0605030A represented only the JTNC funding.

Other Funding: 0605030N represents Navy allocated funding for JTNC from FY2018-2021. 0605030F represents Air Force allocated funding for JTNC from FY2018-2021. FY2015-FY2017 amounts are zero due to Joint Funding Strategy. Prior to the year of execution, the JTNC funding is consolidated in Army PE 0605030A for execution. In accordance with the Joint Tactical Networking Center Acquisition Decision Memorandum and Charter dated 20 January 2014, the JTNC will remain

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605030A / *Joint Tactical Network Center (JTNC)*	**Project (Number/Name)** EA8 / *Joint Tactical Network Center (JTNC)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

under a Joint Budget Strategy funded by the three MILDEPs. As part of the Joint Program Budget Strategy, each MILDEP budgets for approximately one-third of the total program RDT&E funds.

D. Acquisition Strategy

Joint Tactical Networking Center (JTNC) is classified as a Joint Support Program to Acquisition, Technology & Logistics (AT&L), DoD Chief Information Officer (CIO), and the Services. Joint Tactical Networking Center core functions as defined in the JTNC Acquisition Decision Memorandum and Charter signed on 20 January 2014 include: Department of Defense (DoD) Waveform Standards and Software Communications Architecture (SCA), technical assessments of DoD Waveform Information Repository (IR) products, DoD Waveform IR Management and Configuration Control. The services derived from these core functions reinforce an acquisition environment where wireless communications products are interoperable, secure, and affordable.

The FY 2017 Budget supports continued development/maturation of the DoD Waveform Information Repository, support of the National Security Agency (NSA) Commercial Communications Security (COMSEC) Evaluation Program (CCEP), and the JTNC Standards Interface Control Working Group (ICWG).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605030A / *Joint Tactical Network Center (JTNC)*	**Project (Number/Name)** EA8 / *Joint Tactical Network Center (JTNC)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Multiple Contract Awards : Various	5.898	0.292	Jan 2015	0.220	Oct 2015	0.244	Oct 2016	-		0.244	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	G2 Software Systems 01/04 : San Diego, CA	0.000	0.426	Nov 2014	0.766	Nov 2015	0.849	Nov 2016	-		0.849	Continuing	Continuing	Continuing
Program Management Support	Allot	Aberdeen Proving Grounds : Aberdeen. MD	0.000	0.178	Oct 2014	0.358	Oct 2015	0.403	Oct 2016	-		0.403	Continuing	Continuing	Continuing
Program Management Support	MIPR	SSC PACIFIC : San Diego, CA	0.000	0.092	Nov 2014	0.131	Oct 2015	0.147	Nov 2016	-		0.147	Continuing	Continuing	Continuing
Program Management Support	FFRDC	MITRE : McLean, VA	0.000	-		-		0.058	Dec 2016	-		0.058	Continuing	Continuing	Continuing
		Subtotal	5.898	0.988		1.475		1.701		-		1.701	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JTNC Product Development	MIPR	SSC PACIFIC : San Diego, CA	0.000	0.662	Oct 2014	1.389	Nov 2015	1.542	Oct 2016	-		1.542	Continuing	Continuing	Continuing
JTNC Product Development Support	C/CPFF	G2 Software Systems 04 : San Diego, CA	0.000	0.562	Oct 2014	1.141	Oct 2015	1.285	Nov 2016	-		1.285	Continuing	Continuing	Continuing
JTNC Product Development Support	C/CPFF	G2 Software Systems 01 : San Diego, CA	0.000	-		1.261	Oct 2015	1.441	Oct 2016	-		1.441	Continuing	Continuing	Continuing
JTNC Product Development	C/CPFF	Booz Allen Hamilton : San Diego, CA	0.000	1.184	Nov 2014	-		-		-		-	0.000	1.184	1.184
JTNC Product Development - Other	Allot	Aberdeen Proving Grounds : Aberdeen, MD	0.000	0.382	Nov 2014	-		-		-		-	0.000	0.382	0.382

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605030A / *Joint Tactical Network Center (JTNC)*	Project (Number/Name) EA8 / *Joint Tactical Network Center (JTNC)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification (Interim SCA Compliance Testing)	MIPR	NSA: : Ft. Meade, MD	0.421	-		-		-		-		-	0	0.421	0.421
Post FQT / Software Sustainment	MIPR	SSC PAC: : San Diego, CA	9.805	-		-		-		-		-	0	9.805	9.805
Post FQT/ Software Sustainment	MIPR	CERDEC : APG, MD	1.397	-		-		-		-		-	0	1.397	1.397
Post FQT/ software Sustainment	MIPR	SSC LANT : Charleston, SC	5.200	-		-		-		-		-	0	5.200	5.200
Post Formal Qualification Testing- LINK 16	C/CPIF	BAE: : Wayne, NJ	3.045	-		-		-		-		-	0	3.045	3.045
Product Development WNW	C/CPIF	General Dynamics : Scottsdale, AZ	2.079	-		-		-		-		-	0	2.079	2.079
Post Formal Qualification Testing- JENM	C/CPIF	Boeing: : Huntington Beach, CA	0.796	-		-		-		-		-	0	0.796	0.796
Network Enterprise Services Development	C/CPIF	Boeing: : Huntington Beach, CA	14.860	-		-		-		-		-	0	14.860	14.860
Product Development SRW	C/CPIF	Harris Corp : Rochester, NY	1.070	-		-		-		-		-	0	1.070	1.070
Post Formal Qualification Testing- MUOS	C/CPIF	Lockheed Martin Corp : Sunnyvale, CA	0.593	-		-		-		-		-	0	0.593	0.593
Post Formal Qualification Testing- WNW	C/CPIF	General Dynamics: : Scottsdale, AZ	0.967	-		-		-		-		-	0	0.967	0.967
Post Formal Qualification Testing: JENM	C/CPFF	Exelis Inc. : Alexandria, VA	4.525	-		-		-		-		-	0	4.525	4.525
		Subtotal	44.758	2.790		3.791		4.268		-		4.268	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605030A / *Joint Tactical Network Center (JTNC)*	Project (Number/Name) EA8 / *Joint Tactical Network Center (JTNC)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JTNC Engineering/ Technical Support	C/CPFF	G2 Software Systems 01/04 : San Diego, CA	0.000	1.214	Nov 2014	1.546	Oct 2015	1.795	Nov 2016	-		1.795	Continuing	Continuing	Continuing
JTNC Engineering/ Technical Support	FFRDC	MITRE Corporation : McLean, VA	0.228	0.129	Dec 2014	0.149	Oct 2015	0.167	Nov 2016	-		0.167	Continuing	Continuing	Continuing
JTNC Engineering/ Technical Support	MIPR	Aberdeen Proving Grounds : Aberdeen, MD	0.000	0.274	Nov 2014	0.484	Oct 2015	0.545	Nov 2016	-		0.545	Continuing	Continuing	Continuing
JTNC Engineering/ Technical Support	MIPR	SSC PACIFIC : San Diego, CA	0.000	-		0.620	Nov 2015	0.639	Oct 2016	-		0.639	Continuing	Continuing	Continuing
JTNC Engineering/ Technical Support	C/CPFF	Booz Allen Hamilton : San Diego	14.965	-		-		-		-		-	0	14.965	14.965
		Subtotal	15.193	1.617		2.799		3.146		-		3.146	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development/Test & Evaluation	MIPR	SSC PACIFIC : San Diego, CA	0.000	1.286	Nov 2014	1.316	Oct 2015	1.476	Nov 2016	-		1.476	Continuing	Continuing	Continuing
Development/Test & Evaluation	C/CPFF	G2 Software Systems 01 : San Diego, CA	0.000	-		0.929	Oct 2015	1.032	Oct 2016	-		1.032	Continuing	Continuing	Continuing
Development/Test & Evaluation	C/CPFF	Multiple Awards : Various	0.000	0.221	Dec 2014	0.468	Oct 2015	0.526	Nov 2016	-		0.526	Continuing	Continuing	Continuing
Development/Test & Evaluation	C/CPFF	G2 Software Systems 04 : San Diego, CA	0.000	0.471	Nov 2014	2.213	Nov 2015	2.479	Nov 2016	-		2.479	Continuing	Continuing	Continuing
Development/Test & Evaluation	MIPR	National Security Agency : Ft. Meade, MD	0.000	-		0.289	Dec 2015	0.326	Dec 2016	-		0.326	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605030A / *Joint Tactical Network Center (JTNC)*	Project (Number/Name) EA8 / *Joint Tactical Network Center (JTNC)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development/Test & Evaluation	MIPR	SSC ATLANTIC : Charleston, SC	0.000	-		0.077	Dec 2015	0.087	Dec 2016	-		0.087	Continuing	Continuing	Continuing
Development/Test & Evaluation	C/CPFF	Booz Allen Hamilton : San Diego, CA	0.000	1.242	Nov 2014	-		-		-		-	0.000	1.242	1.242
		Subtotal	0.000	3.220		5.292		5.926		-		5.926	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.849	8.615		13.357		15.041		-		15.041	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605030A / *Joint Tactical Network Center (JTNC)*	**Project (Number/Name)** EA8 / *Joint Tactical Network Center (JTNC)*

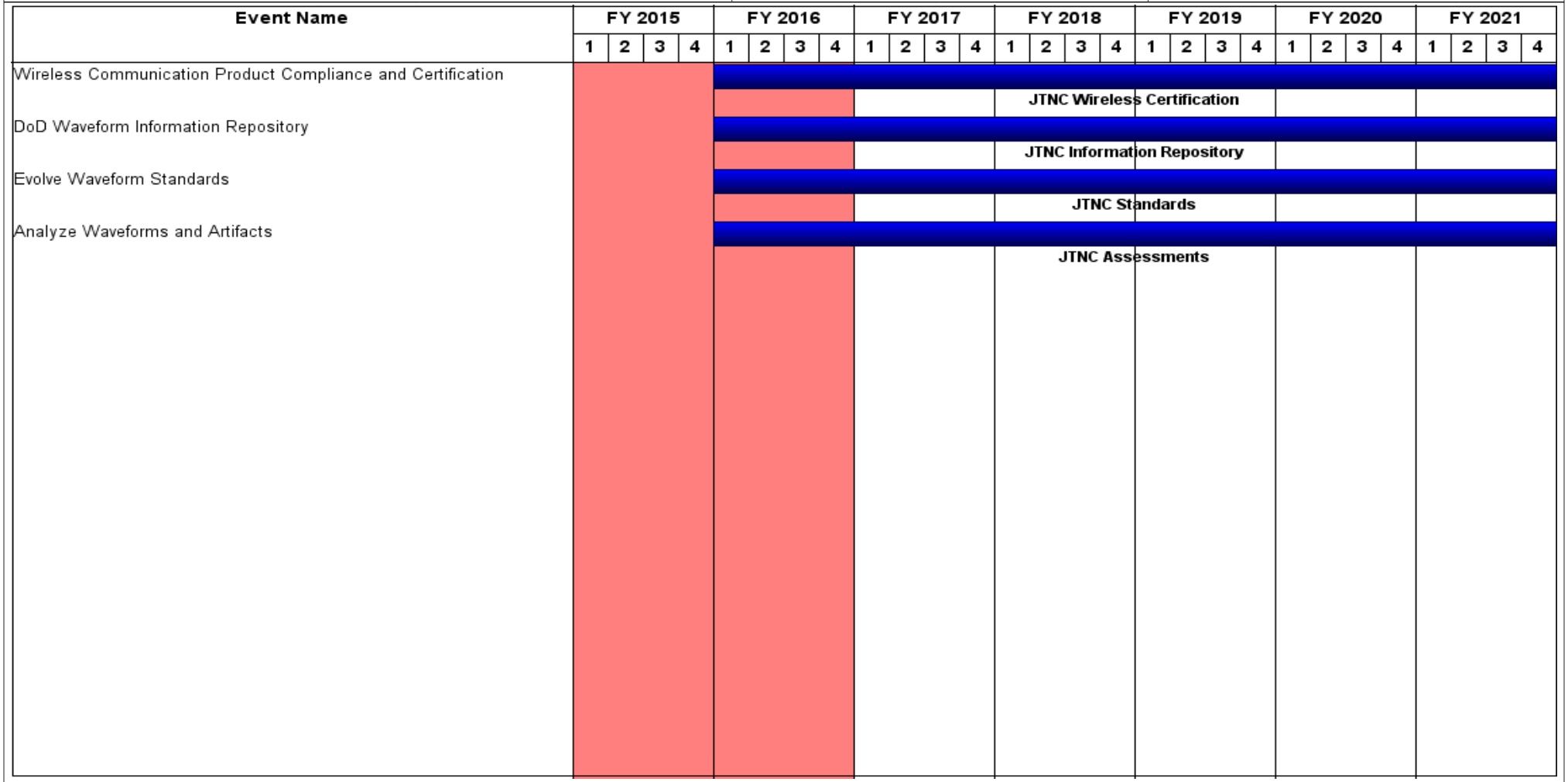

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605030A / *Joint Tactical Network Center (JTNC)*	**Project (Number/Name)** EA8 / *Joint Tactical Network Center (JTNC)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Wireless Communication Product Compliance and Certification	1	2016	4	2021
DoD Waveform Information Repository	1	2016	4	2021
Evolve Waveform Standards	1	2016	4	2021
Analyze Waveforms and Artifacts	1	2016	4	2021

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	17.305	18.055	16.014	-	16.014	24.258	24.025	23.338	22.895	Continuing	Continuing
EF5: *Joint Tactical Network (JTN)*	-	17.305	18.055	10.038	-	10.038	7.315	5.670	4.729	3.806	Continuing	Continuing
EX6: *Waveforms*	-	0.000	0.000	5.976	-	5.976	16.943	18.355	18.609	19.089	Continuing	Continuing

Note

In FY 2013, Joint Tactical Networks (JTN) was funded in the Navy Program Element (PE) 0604280N (Joint Tactical Radio System (JTRS)), Project No.3076 (formally known as JTRS Network Enterprise Domain (JNED)). JNED was renamed JTN and the Joint Executive Program Office (JPEO) JTRS transitioned to the JTNC in FY 2013, in accordance with the Acquisition Decision Memorandum (ADM) dated 11 July 2012. FY 2013 and FY 2014 JTNC funding was provided by the JTN Program via PE 0604280N and PE 0605030A, respectively.

As per the ADM dated 20 January 2014, JTN and JTNC became separate entities and PE 0605031A (Project Code EF5) was created for JTN. The 2014 ADM also directed that the waveform development and sustainment responsibilities transition to the Services in 4QFY15. PdM Waveforms (SRW, WNW) transitioned to PM TR; PdM Joint Enterprise Network Manager (JENM) transitioned to PM WIN-T; and Mobile User Objective System (MUOS) and Link16 transitioned to the Navy. For FY 2015 and out, the Army PE 0605031 contains only the JTN (Waveforms & JENM) RDT&E funding. As part of the joint program budget strategy for JENM, each Military Department (MILDEP) budgets for approximately one-third of the total program RDT&E funds for joint efforts. Joint funding is held at the Navy PE 0605030N and Air Force PE 0605030F. Prior to the year of execution, the funding is consolidated in the Army PE (0605031A) for execution.

In FY17 and out Waveform funding will now be in the Army PE 0605031A, Project Code EX6, while JENM funding will remain in Army PE 0605031A, Project Code EF5.

A. Mission Description and Budget Item Justification

Join Tactical Networks (JTN) efforts are executed by PdM Waveforms and PdM JENM. They are responsible for the portable, interoperable, mobile ad hoc networking waveforms and network enterprise services to enhance tactical warfighting capabilities. PdM Waveforms and PdM JENM applications are: (1) Interoperable - among all Services, capable of operating in a variety of hardware items, for both Program of Record and commercial Non-Developmental Item (NDI) radios; (2) Secure - meet all DoD and US Government information assurance requirements; (3) Operationally relevant - quickly and effectively meet evolving network mission requirements of Combatant Commanders and the Services; (4) Affordable - drive down procurement and support costs via a robust, competitive Non-Developmental Item (NDI) market which adheres to open government standards.

In accordance with the Joint Tactical Networking Center (JTNC) Acquisition Decision Memorandum (ADM) and Charter dated 20 January, 2014, the JTN active efforts include the Soldier Radio Waveform (SRW), the Wideband Networking Waveform (WNW) and JENM. Due to the PdM Waveforms extensive knowledge and expertise, PdM Waveforms will also enhance, update, and sustain the following Legacy Waveforms on a reimbursable basis: the High Frequency (HF) waveform, the merged HAVE QUICK II (HQII) and Very High Frequency (VHF)/Ultra High Frequency (UHF) Line of Sight (VULOS) waveforms, the Joint Tactical Radio System

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605031A *I Joint Tactical Network (JTN)*

(JTRS) Bowman waveform (JBW), the Single Channel Ground and Airborne Radio System (SINCGARS) waveform and the UHF Satellite Communications (SATCOM) waveform.

FY2017 Base RDTE dollars in the amount of $16.014 million supports the continued development of the Waveforms and JENM, testing support and the program management office. Starting in FY2017, PdM Waveforms will be executing from project code EX6.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	17.999	18.055	21.580	-	21.580
Current President's Budget	17.305	18.055	16.014	-	16.014
Total Adjustments	-0.694	0.000	-5.566	-	-5.566
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.694	-			
• Adjustments to Budget Years	-	-	-5.566	-	-5.566

Change Summary Explanation

$5.566 million of FY17 RDT&E funds were aligned to Operation and Maintenance, Army (OMA) in order to properly execute sustainment activities.

In accordance with the signed JTNC ADM and Charter dated 20 January 2014, Program Element (PE) 0605031A was established to execute JTN requirements in PB2015. FY 2015 was the first year funds were aligned to that PE. The Army has aligned their Service share of JENM and Waveform funding fully within the JTN PE for PB 2016. The Navy and Air Force funding for the JENM joint requirements remains in Navy PE 0605030N (shared) and Air Force PE 0605030F (shared). As part of the joint program budget strategy, each Military Department (MILDEP) budgets for approximately one-third of the total program RDT&E funds for joint efforts. Prior to the year of execution, the funding is consolidated in the Army PE for execution.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*	Project (Number/Name) EF5 / *Joint Tactical Network (JTN)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EF5: *Joint Tactical Network (JTN)*	-	17.305	18.055	10.038	-	10.038	7.315	5.670	4.729	3.806	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2013, Joint Tactical Networks (JTN) was funded in the Navy Program Element (PE) 0604280N (Joint Tactical Radio System (JTRS)), Project No.3076 (formally known as JTRS Network Enterprise Domain (JNED)). JNED was renamed JTN and the Joint Executive Program Office (JPEO) JTRS transitioned to the Joint Tactical Networking Center (JTNC) in FY 2013, in accordance with the Acquisition Decision Memorandum (ADM) dated 11 July 2012. FY 2013 and FY 2014 JTNC funding was provided by the JTN Program via PE 0604280N and PE 0605030A, respectively.

As per the ADM dated 20 January 2014, JTN and JTNC became separate entities and PE 0605031A (Project Code EF5) was created for JTN. The 2014 ADM also directed that the waveform development and sustainment responsibilities transition to the Services in 4QFY15. PdM Waveforms Soldier Radio Waveform (SRW) and Wideband Networking Waveform (WNW)transitioned to PM Tactical Radios; PdM Joint Enterprise Network Manager (JENM) transitioned to PM WIN-T; and Mobile User Objective System (MUOS) and Link16 transitioned to the Navy. For FY 2015 and FY 2016, the Army PE 0605031 contains only the JTN (Waveforms & JENM) RDT&E funding. As part of the joint program budget strategy for JENM, each Military Department (MILDEP) budgets for approximately one-third of the total program RDT&E funds for joint efforts. Joint funding is held at the Navy PE 0605030N and Air Force PE 0605030F. Prior to the year of execution, the funding is consolidated in the Army PE (0605031A) for execution.

In FY17 and out, PdM Waveforms funding will now be in the Army PE 0605031A, Project Code EX6, while JENM funding will remain in Army PE 0605031A, Project Code EF5.

A. Mission Description and Budget Item Justification

PdM JENM provides the ability to Plan, Monitor, Configure and Control the Army's Software Defined Radio (SDR) communication networks. JENM configures numerous Soldier Defined Radios (SDR) such as the Manpack, Mid-Tier Networking Vehicular Radio (MNVR) and Rifleman, enabling them to utilize the Mobile Ad Hoc Networking (MANET) waveforms such as the SRW, WNW, MUOS and Single Channel Ground and Airborne Radio (SINCGARs) waveforms. Furthermore, JENM provides the Commander the ability to quickly reconfigure critical networks using its' Over the Air Management (OTAM) functionality. JENM enhances the S6's ability to conduct Course of Action Analysis (COA) and the Military Decision Making Process (MDMP) providing commander’s critical information regarding their ability to effectively communicate.

In accordance with the JTNC ADM and Charter dated 20 January 2014, the JTN active efforts include the SRW, the WNW and the JENM.

FY 2015 and FY 2016, Army PE 0605031.EF5 contains only the JTN (Waveforms & JENM) RDT&E funding. Starting in FY17, PdM Waveforms will be executing from Project Code EX6.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EF5 / *Joint Tactical Network (JTN)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: SRW Development	0.961	2.066	-
Description: SRW will operate on tactical radio sets to provide a networked battlefield communications capability for users engaged in land combat operations and will support voice, data, and video communications on the immediate battlefield. These forces include vehicles, rotary wing, dismounted soldiers, munitions, sensors, and unmanned air vehicles (UAV). Functional software applications will use SRW radio enabled sets over Internet Protocol (IP) capable networks and sub-networks. SRW will be interoperable with higher throughput, IP based network waveforms, such as Wideband Networking Waveform (WNW). As applicable, these IP-based networking waveforms will enable information exchanges through the Global Information Grid (GIG) to the soldier and provide entirely new capabilities for battlefield communications and information sharing. SRW is currently ported on 21 different radio platforms with 9 different vendors. FY15 effort: JTN Enterprise Over-the-Air Management (OTAM) design provides Non-Developmental Integration (NDI) vendors a portable Operating Environment (OE)-centric OTAM approach extensible to SRW, WNW, and future networking waveforms. The Enterprise OTAM is platform and waveform agnostic and provides remote Unit Task Reorganization and radio management capabilities. ***FY 2015 Accomplishments:*** Continued to develop, evolve and enhance SRW to provide improved performance and address user concerns identified in operational testing. Maintain test facility to conduct SRW test and evaluation. Released SRW v1.2.1, Enterprise OTAM v1.0 and v1.1. Begin SRW v1.2.2 efforts. ***FY 2016 Plans:*** Continue to develop, evolve and enhance SRW to provide improved performance. Maintain test facility to conduct SRW test and evaluation. Release of SRW v1.2.2 and v1.3 will provide Emissions Control (EMCON) with Push to Talk (PTT) capability, and network performance. Begin SRW v2.0 efforts.			
Title: WNW Development	2.758	5.440	-
Description: WNW is a high data rate Mobile Adhoc NETworking (MANET) waveform application that provides the mid tier tactical Internet backbone and connects tactical forces across the battle sphere. WNW will provide high throughput, dynamically adaptable connectivity for the exchange of IP based voice, data, and video traffic. WNW will feature two signals-in-space (SiS), which are the Orthogonal Frequency Division Multiplexing (OFDM) and Anti-Jam (AJ). WNW will support network nodes on mobile, airborne, and maritime platforms. WNW includes networking services, security, High Assurance IP Equipment (HAIPE) capabilities, red black switching, and internal routing of other WNW signals. WNW is currently ported on 7 different radio platforms with 5 different vendors. ***FY 2015 Accomplishments:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EF5 / *Joint Tactical Network (JTN)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue enhancements, software modifications and version drop. Maintain test facility to conduct WNW test and evaluation. Develop test plans and procedures for full WNW Waveform Conformance for WNW v4.1 and v5.0. Released v4.2 with performance and reliability improvements critical to mid-tier operations. ***FY 2016 Plans:*** Orient on an agile software approach to support the System of Systems Risk Reduction of the WNW dependent system at NIE 16.2 and a positive Milestone C decision for MNVR; deliver security updates and an optimized parametric package for Army Aviation WNW subnets, higher order modulation, and Anti-Jam subnets (WNW 4.2.1).			
Title: PdM JENM Program Office Support ***Description:*** Program Management Office support in the development of the JENM system. ***FY 2017 Plans:*** Funding will provide for JENM program office support to develop the JENM system as well as Dynamic Network Connectivity, a STARNET objective.	-	-	1.551
Title: JENM Development ***Description:*** JENM provides consolidated communications planning, network configuration, network activation, position reporting, fault management, security management, and network health and status reporting needed to establish and maintain a mobile wireless network comprised of JTN network waveforms. JENM can interface with other external network managers, mission planning systems, network planning systems, key management systems, and spectrum planning systems. JENM is considered a mission essential system. JENM is also considered a critical element within the J-TNT configuration management tool kit. ***FY 2015 Accomplishments:*** JENM released v3.2 in support of MUOS test events, technical evaluation and supported MUOS Multi-Service Operational Test and Evaluation (MOT&E). JENM final engineering release of v3.3 to support all networking waveform program of record radios to include: Handheld, Manpack, and Small Form Fit (HMS), Man Pack (MP), and Rifleman Radio (RR) running the Soldier Radio Waveform (SRW), Single Channel Ground and Airborne Radio System (SINCGARS), MUOS, UHF SATCOM 181/182/183 waveforms; MNVR running SRW and WNW. ***FY 2016 Plans:*** JENM Functional Qualification Tested (FQT) v3.3 will be released 1QFY16 to support MUOS MOT&E, Mid-Tier Networking Evaluation, JENM Operational Test (OT) and Network Integration Evaluation (NIE) 16.2. ***FY 2017 Plans:*** JENM will develop software products for Capability Set Fielding Team and support systems engineering for Navy Digital Modular Radio (DMR) for the MUOS system to include the Airborne Radio Communication (ARC) 210, and the Army/Navy Portable	2.477	4.987	8.487

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EF5 / *Joint Tactical Network (JTN)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Radio Communications (PRC) 117G. JENM will initiate development of Dynamic Network Connectivity as part of the STARNET objective.			
Title: MUOS Waveform Development ***Description:*** MUOS Waveform will enable MUOS satellites to provide worldwide communication satellite coverage for DoD requirements. MUOS will provide functionality comparable to commercial mobile phone systems. MUOS offers secure streaming video, netted communications, and voice/data in real time to provide essential connectivity. The JTN program will modify this waveform, making it compatible and certifiable with DoD security requirements while enabling porting to tactical radio sets. MUOS is currently being ported by 8 vendors on 6 different platforms. ***FY 2015 Accomplishments:*** Continue software testing, upgrades, enhancements, software modifications and software version drop v3.1.3 to meet DoD requirements. On 25June2015 the MUOS waveform was transferred to the MIDS Program Office.	0.871	-	-
Title: Legacy Radio Waveforms/Program Office Support ***Description:*** Legacy Radio Waveforms/Program Office Support: Includes the continued development, incremental upgrades, and software efficiencies of legacy software and other related activities to support the legacy waveform integration into hardware solutions in the field. ***FY 2015 Accomplishments:*** Continue to support waveform integration, test and evaluation, Legacy Radio Waveforms support and program office support for PdM JENM and PdM Waveforms Program office. ***FY 2016 Plans:*** Locked control for PdM JENM and PdM Waveforms Program office and Legacy Radio Waveforms support. Shared costs.	10.238	5.562	-
Accomplishments/Planned Programs Subtotals	17.305	18.055	10.038

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0605031N: *0605031N; JTN, RDTE,N*	-	-	-	-	-	4.691	3.725	3.735	3.798	Continuing	Continuing
• 0605030F: *0605030F; JTNC, RDTE,F*	-	-	6.427	-	6.427	6.281	6.194	6.092	6.149	Continuing	Continuing
• 4326750A: *4326750A: JTN, O&M,A*	28.408	8.993	-	-	-	-	-	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EF5 / *Joint Tactical Network (JTN)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

Remarks

In FY2014, the Joint Tactical Networks (JTN) was funded in the Army Program Element (PE) 0605030A. This was a shared line with JTNC. In FY16 and beyond PE 0605030A will be JTNC only.

In FY 2015 and beyond PE 0605031A contains only the JTN (PdM Waveforms and PdM JENM) RDTE funding.

In accordance with the Acquisition Decision Memorandum (ADM) dated 11 July 2012, the Joint Tactical Radio System (JTRS) Program of Records (PORs) transitioned to Military Department (MILDEP) managed programs. As per the ADM dated 20 January 2014, JTN and JTNC became separate entities. FY 2015 and out, Army PE 0605031 contains only the JTN RDT&E funding. For FY2017 and out, the continuing JTN efforts are funded in Army PE 0605031A (JTN), Navy PE 0605030N (shared), and Air Force PE 0605030F (shared). As part of the joint program budget strategy, each Military Department (MILDEP) budgets for approximately one-third of the total program RDT&E funds for JENM joint efforts. Prior to the year of execution, funding is consolidated in the Army PE (0605031A) and software sustainment funds are realigned from RDT&E to O&M,A PE (4326750A) to support the joint program acquisition strategy.

In FY 2017 and out Waveform funding will now be on the Army PE 0605031A, Project Code EX6. JENM funding will remain under Army PE 0605031A Project Code EF5.

D. Acquisition Strategy

PdM JENM is responsible for development of common networking services to include interface standards and network managers. PdM JENM develops waveforms and Cryptographic Equipment Applications (CEAs) for use within the software-defined radio community.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*	Project (Number/Name) EF5 / *Joint Tactical Network (JTN)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JENM Program Management Support	C/CPFF	G2 Software Systems : San Diego, CA	0.000	-		-		0.909		-		0.909	Continuing	Continuing	Continuing
JENM Program Management Support	C/CPIF	Pending Contract Award : Aberdeen, MD	0.000	-		-		0.448		-		0.448	Continuing	Continuing	Continuing
JENM Program Management Support	Allot	USAASC : Aberdeen, MD	0.000	-		-		0.238		-		0.238	Continuing	Continuing	Continuing
JENM Program Management Support	MIPR	SSC PACIFIC : San Diego, CA	0.000	-		-		0.347		-		0.347	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Booz Allen Hamilton : San Diego, CA	0.000	0.336		0.337		-		-		-	0	0.673	0.673
Program Management	C/CPFF	G2 Software Systems : San Diego, CA	0.000	0.840		0.843		-		-		-	0	1.683	1.683
		Subtotal	0.000	1.176		1.180		1.942		-		1.942	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JENM NMRIL Development	C/CPFF	G2 Software Systems : San Diego, CA	0.000	-		-		0.992		-		0.992	Continuing	Continuing	Continuing
JENM NMRIL Development	C/CPFF	Pending Contract Award : Aberdeen, MD	0.000	-		-		0.875		-		0.875	Continuing	Continuing	Continuing
JENM NMRIL Development	MIPR	SSC PACIFIC : San Diego, CA	0.000	-		-		1.741		-		1.741	Continuing	Continuing	Continuing
Post Formal Qualification Testing-JENM	C/CPIF	Boeing : Huntington Beach, CA	0.000	1.876		2.896		-		-		-	0	4.772	4.991
Post Formal Qualification Testing-WNW	C/CPIF	General Dynamics : Scottsdale, AZ	0.000	1.217		1.540		-		-		-	0	2.757	2.976

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*	Project (Number/Name) EF5 / *Joint Tactical Network (JTN)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Post Formal Qualification Testing-SRW	C/CPIF	Harris : Rochester, NY	0.000	1.225		1.329		-		-		-	0	2.554	2.554
Software Communications Architecture (SCA) Compliance	MIPR	NSA : Fort Meade, MD	0.000	0.476		0.477		-		-		-	0	0.953	0.953
Post FQT/Software Support	MIPR	SSC PAC : San Diego, CA	0.000	3.670		3.808		-		-		-	0	7.478	7.604
Post FQT/Software Support	MIPR	CERDEC : APG, MD	0.000	0.305		0.306		-		-		-	0	0.611	0.611
Post FQT/Software Support	MIPR	SSC LANT : Charleston, SC	0.000	2.610		2.619		-		-		-	0	5.229	5.229
Post Formal Qualification Testing-MUOS	C/CPIF	Lockheed Martin Corp. : Sunnyvale, CA	0.000	0.660		-		-		-		-	0	0.660	0.660
Post Formal Qualification Testing-Link 16	C/CPIF	BAE : Wayne, NJ	0.000	0.332		-		-		-		-	0	0.332	0.332
		Subtotal	0.000	12.371		12.975		3.608		-		3.608	-	-	-

Remarks

FY 2015 & FY16 PE 0605031A represents the total JTN RDTE budget.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JENM v3 Software Support	C/CPFF	G2 Software Systems : San Diego, CA	0.000	-		-		0.442		-		0.442	Continuing	Continuing	Continuing
JENM v3 Software Support	C/CPFF	Pending Contract Award : Aberdeen, MD	0.000	-		-		0.607		-		0.607	Continuing	Continuing	Continuing
JENM v3 Software Support	MIPR	SSC PACIFIC : San Diego, CA	0.000	-		-		0.694		-		0.694	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*	Project (Number/Name) EF5 / *Joint Tactical Network (JTN)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development/Engineering/ Technical Support	C/CPFF	Various : various	0.000	0.861	Jan 2015	0.994		-		-		-	0	1.855	1.985
		Subtotal	0.000	0.861		0.994		1.743		-		1.743	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JENM v3 System Engineering and Test	MIPR	SSC PACIFIC : San Diego, CA	0.000	-		-		1.104		-		1.104	0	1.104	0
JENM v3 System Engineering and Test	C/CPFF	Pending Contract Award : Aberdeen, MD	0.000	-		-		1.641		-		1.641	Continuing	Continuing	Continuing
JTN Test and Evaluation Support	C/CPFF	Booz Allen Hamilton : San Diego, CA	0.000	0.702		0.704		-		-		-	0	1.406	1.406
JTN Test and Evaluation	FFRDC	MITRE : San Diego, CA	0.000	1.600		1.605		-		-		-	0	3.205	3.205
JTN Test and Evaluation Support	C/CPFF	G2 Software Systems : San Diego, CA	0.000	0.595		0.597		-		-		-	0	1.192	1.192
		Subtotal	0.000	2.897		2.906		2.745		-		2.745	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	17.305		18.055		10.038		-		10.038	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EF5 / *Joint Tactical Network (JTN)*

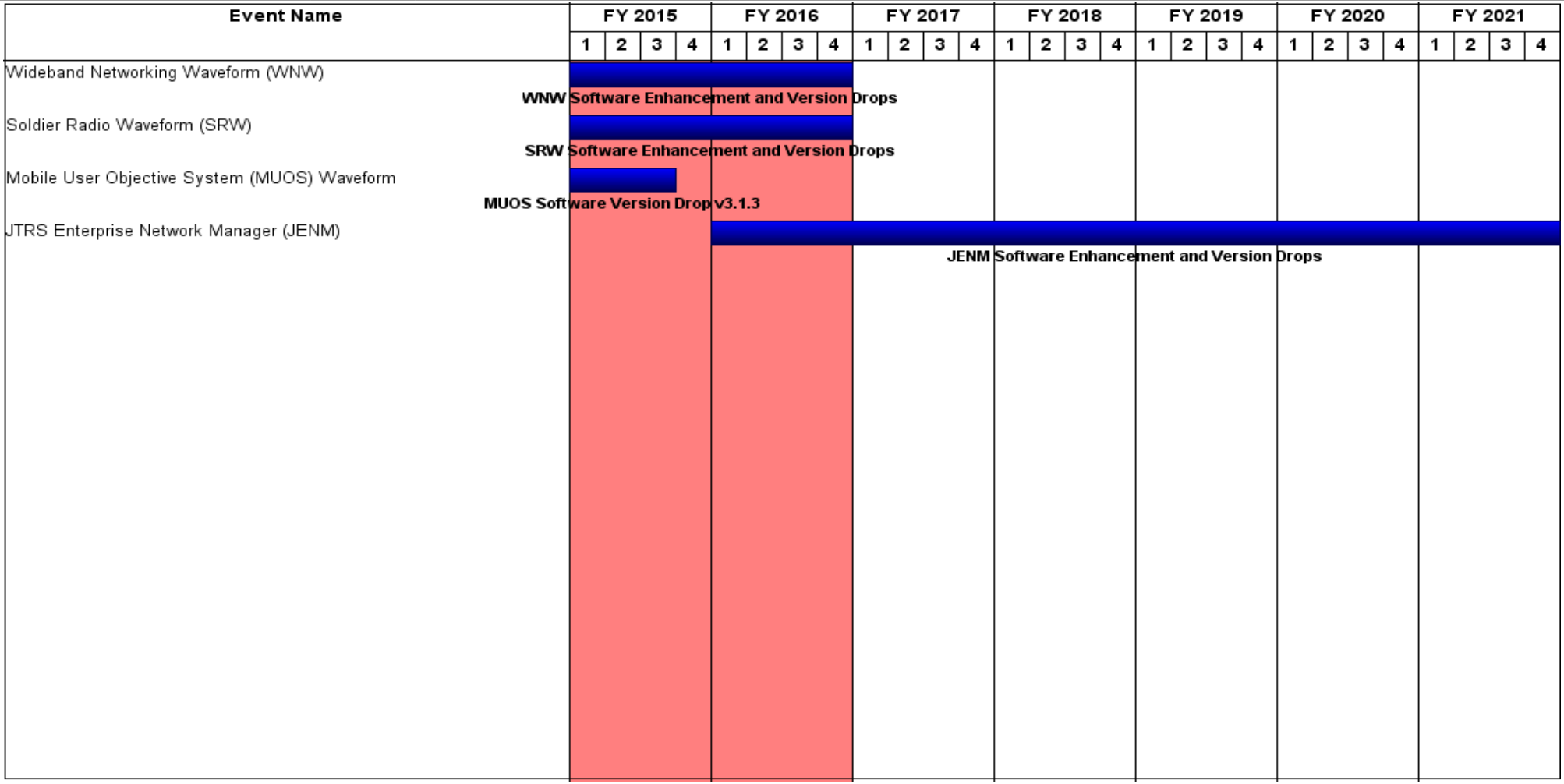

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EF5 / *Joint Tactical Network (JTN)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Wideband Networking Waveform (WNW)	1	2015	4	2016
Soldier Radio Waveform (SRW)	1	2015	4	2016
Mobile User Objective System (MUOS) Waveform	1	2015	3	2015
JTRS Enterprise Network Manager (JENM)	1	2016	4	2021

Note

In FY17 and out Waveform funding will now be on the Army PE 0605031A, Project Code EX6. Starting in FY17, Waveforms Software Enhancements and Versions Drops will reflect on the Project Code EX6 Exhibit R4 and R4A.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*	Project (Number/Name) EX6 / *Waveforms*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EX6: *Waveforms*	-	0.000	0.000	5.976	-	5.976	16.943	18.355	18.609	19.089	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2013, Joint Tactical Networks (JTN) was funded in the Navy Program Element (PE) 0604280N (Joint Tactical Radio System (JTRS)), Project No.3076 (formally known as JTRS Network Enterprise Domain (JNED)). JNED was renamed JTN and the Joint Executive Program Office (JPEO) JTRS transitioned to the JTNC in FY 2013, in accordance with the Acquisition Decision Memorandum (ADM) dated 11 July 2012. FY 2013 and FY 2014 Joint Tactical Network Center (JTNC) funding was provided by the JTN Program via PE 0604280N and PE 0605030A, respectively. In accordance with the ADM dated 20 Jan 2014, JTN and JTNC became separate entities and PE 0605031A (Project Code EF5) was created for JTN.

The 2014 ADM also directed that the waveform development and sustainment responsibilities transition to the Services in 4QFY2015. On 25 June 2015, Product Manager (PdM) Waveforms transitioned to Program Manager (PM) Tactical Radios.

PdM Waveforms was previously funded under JTN Army Program Element (APE) 0605031A (Project Code EF5). Starting in FY2017, PdM Waveforms will be executing from Project Code EX6.

A. Mission Description and Budget Item Justification

PdM Waveforms delivers, maintains, and upgrades portable, interoperable, mobile ad hoc networking waveforms and network enterprise services to enhance tactical warfighting capabilities. PdM Waveforms provides the Lower Tactical Internet with a suite of waveforms and network services that are: (1) Interoperable - used by all Services; (2) Capable of operating on a variety of hardware platforms, both Program of Record and non-developmental commercial radios; (3) Secure - meet all Department of Defense and US Government information assurance requirements; (4) Operationally relevant - quickly and effectively meet evolving network mission requirements of Combatant Commanders and the Services; and (5) Affordable - drive down procurement and support costs via a robust, competitive market which adheres to open government standards.

Project code EX6 funds the continued development of the Waveforms. FY2015-FY2016 development efforts were previously executed from JTN APE 0605031A (Project Code EF5).

FY2017 Base RDTE dollars in the amount of $5.976 million supports the continued development of the waveforms, testing support and the program management office.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Soldier Radio Waveform (SRW)	-	-	2.646
Description: Soldier Radio Waveform (SRW) will operate on tactical radio sets to provide a networked battlefield communications capability for users engaged in land combat operations and will support voice, data, and video communications on the immediate			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EX6 / *Waveforms*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
battlefield. These forces include vehicles, rotary wing aircraft, dismounted Soldiers, munitions, sensors, and unmanned aerial vehicles (UAV). Functional software applications will use SRW radio enabled sets over Internet Protocol (IP) capable networks and sub-networks. SRW will be interoperable with higher throughput, IP based network waveforms, such as Wideband Networking Waveform (WNW). As applicable, these IP-based networking waveforms will enable information exchanges through the Global Information Grid (GIG) to the Soldier and provide entirely new capabilities for battlefield communications and information sharing. SRW is currently ported on 21 different radio platforms with 9 different vendors. ***FY 2017 Plans:*** Continue to develop, evolve and enhance SRW to provide improved performance. Maintain test facility to conduct SRW test and evaluation. Release of v2.0 will provide Enhanced Electronic Protection (EEP), network performance and scalability improvements, and address SRW Narrowband requirements.			
Title: Wideband Networking Waveform (WNW) Development ***Description:*** WNW is a high data rate Mobile Adhoc NETworking (MANET) waveform application that provides the mid-tier tactical Internet backbone and connects tactical forces across the battle sphere. WNW will provide high throughput, dynamically adaptable connectivity for the exchange of IP based voice, data, and video traffic. WNW will feature two signals-in-space (SiS), which are the Orthogonal Frequency Division Multiplexing (OFDM) and Anti-Jam (AJ). WNW will support network nodes on mobile, airborne, and maritime platforms. WNW includes networking services, security, High Assurance IP Equipment (HAIPE) capabilities, red black switching, and internal routing of other WNW signals. WNW is currently ported on 7 radio platforms with 5 different vendors. ***FY 2017 Plans:*** Integrate HAIPE 4.2 interoperable core and designated extensions in collaboration with Joint Enterprise Net Manager (JENM) and Warfighter Information Network-Tactical (WIN-T) high efficiency routing deployments and enhanced electronic protection requirements assessments. Develop capability for expanded scale and high mobility subnets, continued electronic protection enhancements as well as Disruption Tolerant and Virtualized Networking functionality for WNW. Develop, test, and deploy a security enhanced, non-proprietary development environment. Evolve an expanded test bed for validation of performance and interoperability of waveform applications and radio platform services to support to Mid-tier Networking Vehicular Radio (MNVR) and Small Airborne Networking Radio (SANR) milestones.	-	-	2.537
Title: Program Management Office Support ***Description:*** Program Management Office support in the enhancements of Waveforms ***FY 2017 Plans:***	-	-	0.793

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EX6 / *Waveforms*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continues the program management support for PdM Waveforms.			
Accomplishments/Planned Programs Subtotals	-	-	5.976

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0605031A.EF5: *0605031A.EF5: JTN, RDTE, A*	17.305	18.055	10.038	-	10.038	7.315	5.670	4.729	3.806	Continuing	Continuing
• 4326750A: *4326750A: JTN, O&M, A*	28.408	8.993	-	-	-	-	-	-	-	0	37.401

Remarks

In FY2014, the JTN (PdM Waveforms) was funded in the APE 0605030A. This was a shared line with JTNC. In FY2016 and beyond APE 0605030A will be JTNC only.

In FY2015 and FY2016 APE 0605031A (Project Code EF5) contains only the JTN (PdM Waveforms and PdM JENM) RDTE funding. Starting in FY2017, PdM Waveforms will be executing from Project Code EX6.

Prior to the year of execution, software sustainment funds are realigned from RDTE to OMA APE 4326750A to support the PdM Waveforms program acquisition strategy.

D. Acquisition Strategy

PdM Waveforms is responsible for common core activities including developing and updating legacy and networking waveforms that operate on multiple radios sets and in all operational environments that support network-centric operational warfare. Waveform developments (upgrading, developing, and maintaining) will generally be procured through full and open contract competitions.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*	Project (Number/Name) EX6 / *Waveforms*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support (Matrix)	MIPR	CERDEC : APG, MD	0.000	-		-		0.232		-		0.232	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Various : Aberdeen, MD	0.000	-		-		0.561		-		0.561	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.793		-		0.793	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development-SRW	C/CPFF	Harris : Rochester, NY	0.000	-		-		0.997		-		0.997	Continuing	Continuing	Continuing
Software Development	C/CPFF	TBD : Aberdeen, MD	0.000	-		-		0.920		-		0.920	Continuing	Continuing	Continuing
Software Development - WNW	MIPR	SSC Atlantic : Charleston, SC	0.000	-		-		0.567		-		0.567	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		2.484		-		2.484	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development/Engineering/ Technical Support	MIPR	CERDEC : Aberdeen, MD	0.000	-		-		0.194		-		0.194	Continuing	Continuing	Continuing
Development/Engineering/ Technical Support	C/CPFF	Harris : Rochester, NY	0.000	-		-		0.421		-		0.421	Continuing	Continuing	Continuing
Development/Engineering/ Technical Support	MIPR	SSC Atlantic : Charleston, SC	0.000	-		-		0.729		-		0.729	Continuing	Continuing	Continuing
Development/Engineering/ Technical Support	C/CPFF	Various : Aberdeen, MD	0.000	-		-		0.862		-		0.862	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		2.206		-		2.206	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605031A / *Joint Tactical Network (JTN)*	Project (Number/Name) EX6 / *Waveforms*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Support (SRW RIL)	MIPR	CERDEC : Aberdeen, MD	0.000	-		-		0.146		-		0.146	Continuing	Continuing	Continuing
Test and Evaluation Support (WNW RIL)	MIPR	SSC Atlantic : Charleston, SC	0.000	-		-		0.347		-		0.347	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.493		-		0.493	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		5.976		-		5.976	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EX6 / *Waveforms*

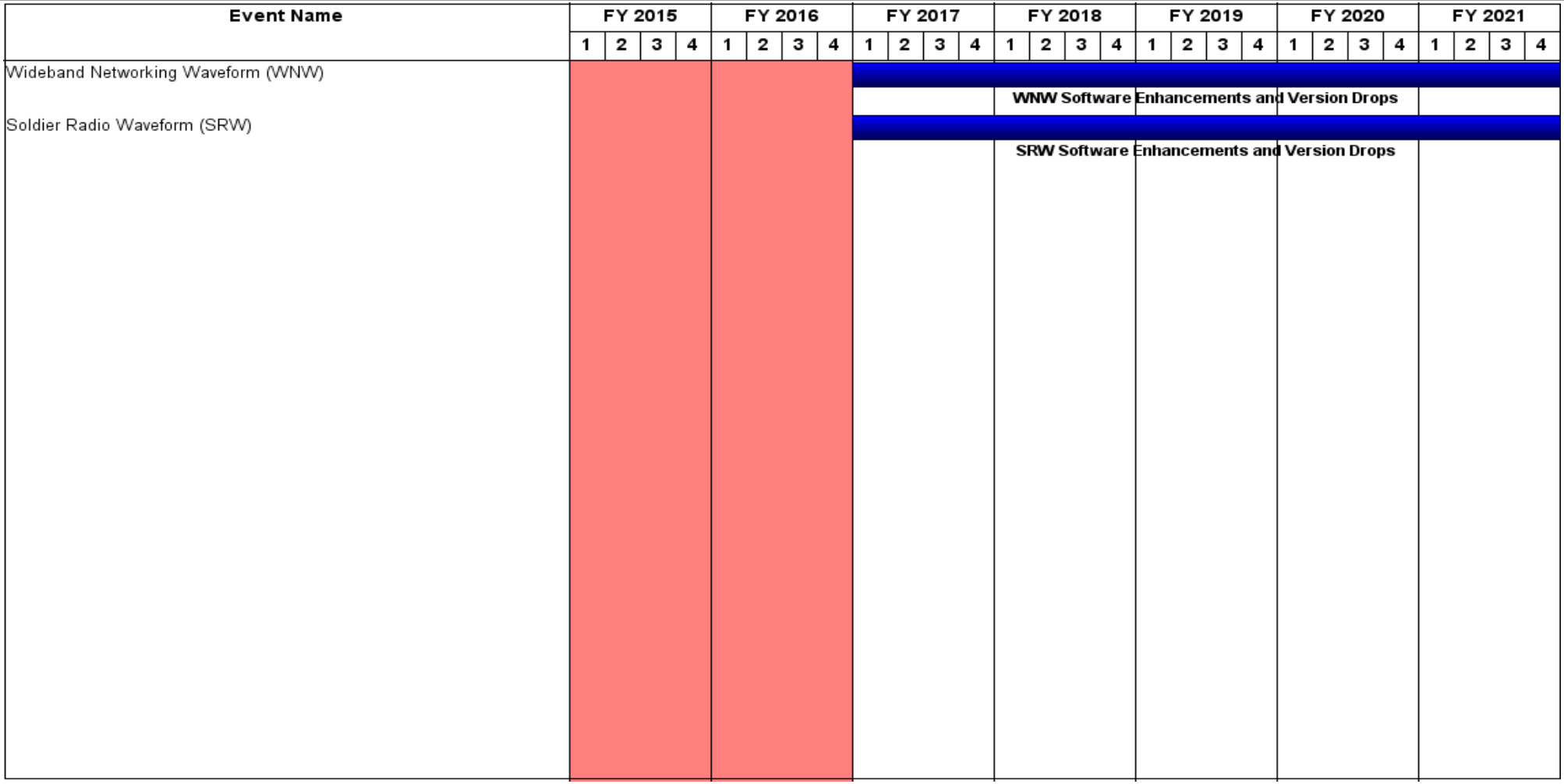

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605031A / *Joint Tactical Network (JTN)*	**Project (Number/Name)** EX6 / *Waveforms*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Wideband Networking Waveform (WNW)	1	2017	2	2022
Soldier Radio Waveform (SRW)	1	2017	2	2022

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605032A / *TRACTOR TIRE*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	5.677	27.254	-	27.254	26.945	28.389	30.951	32.655	Continuing	Continuing
ET3: *Tractor Trick*	-	0.000	5.677	27.254	-	27.254	26.945	28.389	30.951	32.655	Continuing	Continuing

A. Mission Description and Budget Item Justification

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

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	5.677	6.192	-	6.192
Current President's Budget	0.000	5.677	27.254	-	27.254
Total Adjustments	0.000	0.000	21.062	-	21.062
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	21.062	-	21.062

Change Summary Explanation

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

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605033A / *Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	5.032	-	5.032	1.720	1.484	0.000	0.000	0.000	8.236
EQ3: *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*	-	0.000	0.000	5.032	-	5.032	1.720	1.484	0.000	0.000	0.000	8.236

Note

Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) was previously funded in Integrated Base Defense (IBD) Program Element: 0205402A EF2. This is not a new start program in FY17.

A. Mission Description and Budget Item Justification

Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) will replace the interim Persistent Surveillance System-Ground (PSS-G) Increment 1 towers with improved persistent surveillance capabilities and will provide network integration and better mobility utilizing modular configurations. G-BOSS(E) will replace obsolete, quick reaction capability (QRC) surveillance and force protections systems utilizing modular configurations: Light (man-transportable) for extra small base camps or small outpost/company, Medium (mid sensor height) for small to medium size base, and Heavy (high level sensor height) for large contingency base camps. G-BOSS(E) will operate in a stand-alone mode or as part of an integrated network utilizing government owned software, be easily operated and maintained, and be rugged enough to support employment in expeditionary operations worldwide.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	5.032	-	5.032
Total Adjustments	0.000	0.000	5.032	-	5.032
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	5.032	-	5.032

Change Summary Explanation

Program was previously funded in Integrated Base Defense (IBD) Program Element: 0205402A EF2 in FY16.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605033A / *Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)*	Project (Number/Name) EQ3 / *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EQ3: *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*	-	0.000	0.000	5.032	-	5.032	1.720	1.484	0.000	0.000	0.000	8.236
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) was previously funded in Integrated Base Defense Program Element: 0205402A EF2. This is not a new start program in FY17.

A. Mission Description and Budget Item Justification

Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) will replace the interim Persistent Surveillance System-Ground (PSS-G) Increment 1 towers with improved persistent surveillance capabilities and will provide network integration and better mobility utilizing modular configurations. G-BOSS(E) will replace obsolete, quick reaction capability (QRC) surveillance and force protections systems utilizing modular configurations: Light (man-transportable) for extra small base camps or small outpost/company, Medium (mid sensor height) for small to medium size base, and Heavy (high level sensor height) for large contingency base camps. G-BOSS(E) will operate in a stand-alone mode or as part of an integrated network utilizing government owned software, be easily operated and maintained, and be rugged enough to support employment in expeditionary operations worldwide.

FY 2017 Base Funding in the amount of $5.032 million supports the system level Critical Design Review (CDR), development and integration for both medium and heavy variants, and the production of the Engineering & Manufacturing Development (EMD) assets (production representative articles) for both the Heavy and Medium variants. The RDTE will support the completion of the Technical Data Package (TDP) and Product Support Analysis and Package for all system configurations, as well as the Developmental Testing (DT)/early Operational Assessment (OA) for a single system variant.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: G-BOSS(E) Design and Build	-	-	5.032
Description: G-BOSS(E) completes building of Prototype/Engineering Development Models (EDMs) and starts Development Testing (DT). ***FY 2017 Plans:*** G-BOSS(E) completes building of Engineering Development Models (EDMs) and starts Development Testing (DT)/Early Operational Assessment (OA)			
Accomplishments/Planned Programs Subtotals	-	-	5.032

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605033A / *Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)*	**Project (Number/Name)** EQ3 / *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• M90212: *G-BOSS(E) (M90212)*	-	-	-	-	-	6.276	19.770	20.435	17.188	0	63.669
• 0205402A: *Integrated Base Defense (0205402A)*	4.196	10.750	-	-	-	-	-	-	-	0	14.946

Remarks

Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) was previously funded in Integrated Base Defense (IBD) Program Element: 0205402A EF2, which was a shared funding line between Integrated Ground Security, Surveillance and Response Capability (IGSSR-C), GBOSS-(E) and Integrated Base Defense (IBD). GBOSS-(E) portion was $5.750 million in FY 2016.

D. Acquisition Strategy

Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)) will replace the interim Persistent Surveillance System – Ground (PSS-G) Increment 1 towers with improved persistent surveillance capabilities along with network integration and better mobility utilizing modular configurations. The G-BOSS(E) Capability Design Document (CDD) was approved May 2014. In FY 2014, the Department of Defense (DoD) Physical Security Enterprise and Analysis Group (PSEAG) provided funds to conduct pre-milestone B activities.

G-BOSS(E) received an approved Materiel Development Decision (MDD) from the Milestone Decision Authority (MDA) on 4 December 2015. Pending successful Milestone B decision in FY 2016, the existing United States Marine Corps (USMC) tower's design (Ground Based Operational Surveillance System) (GBOSS) will be leveraged and modified to meet the Army's G-BOSS(E) program requirements.

The acquisition strategy for FY 2017 is pending approval from the Milestone Decision Authority (MDA), with plans to leverage the Naval Surface Warfare Center (NSWC) at Crane, Indiana and the Night Vision and Electronic Sensors Directorate (NVESD), Fort Belvoir, Virginia to provide system design, development, and integration support, as well as a Technical Data Package (TDP) to support future procurements.

Milestone C is planned for FY 2019 to align G-BOSS(E), IGSSR-C, and Tactical Security System (TSS) in order to gain programmatic efficiencies.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605033A / *Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)*	Project (Number/Name) EQ3 / *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G-BOSS(E) Project Management	MIPR	PM EOIR : Fort Belvoir, VA	0.000	-		-		0.153	Dec 2016	-		0.153	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.153		-		0.153	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G-BOSS(E) Design	MIPR	NSWC Crane : Crane, IN	0.000	-		-		1.977	Dec 2016	-		1.977	Continuing	Continuing	Continuing
G-BOSS(E) Prototypes	MIPR	NSWC Crane : Crane, IN	0.000	-		-		1.856	Dec 2016	-		1.856	Continuing	Continuing	Continuing
G-BOSS(E) Software Development	TBD	TBD : TBD	0.000	-		-		0.264	Dec 2016	-		0.264	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		4.097		-		4.097	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G-BOSS(E) Design Support	MIPR	RDECOM CERDEC : Fort Belvoir, VA	0.000	-		-		0.338	Dec 2016	-		0.338	Continuing	Continuing	Continuing
ARL Human Systems Integration Support	MIPR	US Army ARL : Adelphi, MD	0.000	-		-		0.025	Dec 2016	-		0.025	Continuing	Continuing	Continuing
CECOM FSD - Safety	MIPR	CECOM : APG, MD	0.000	-		-		0.219	Dec 2016	-		0.219	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.582		-		0.582	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605033A / *Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)*	Project (Number/Name) EQ3 / *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G-BOSS(E) Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	0.000	-		-		0.200	Dec 2016	-		0.200	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.200		-		0.200	-	-	-

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		5.032		-		5.032	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605033A / *Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)*	**Project (Number/Name)** EQ3 / *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*

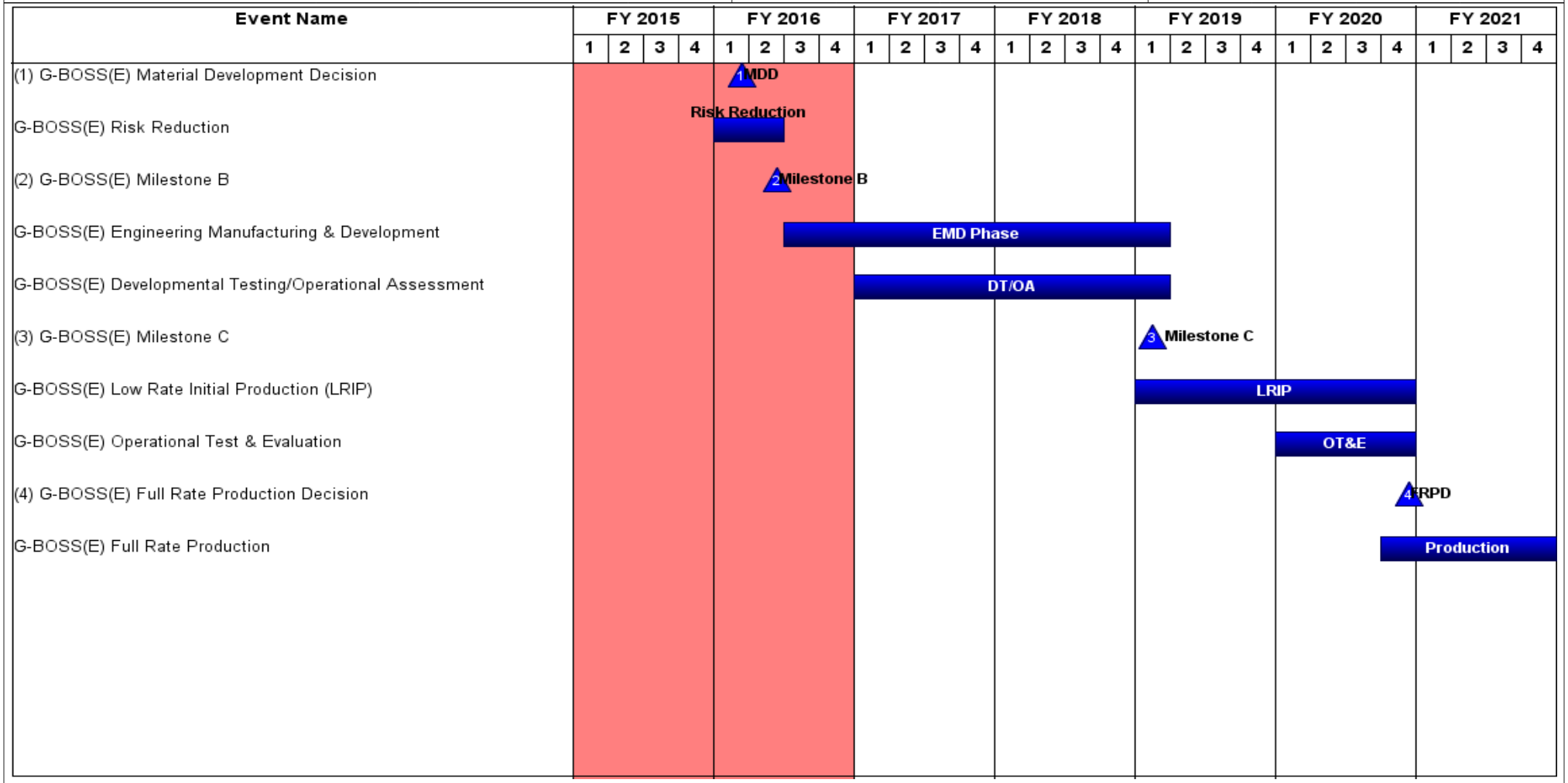

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605033A / *Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)*	**Project (Number/Name)** EQ3 / *Grnd-Based Opnl Surv Sys -Exped (GBOSS-E)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
G-BOSS(E) Material Development Decision	1	2016	1	2016
G-BOSS(E) Risk Reduction	1	2016	2	2016
G-BOSS(E) Milestone B	2	2016	2	2016
G-BOSS(E) Engineering Manufacturing & Development	3	2016	1	2019
G-BOSS(E) Developmental Testing/Operational Assessment	1	2017	1	2019
G-BOSS(E) Milestone C	1	2019	1	2019
G-BOSS(E) Low Rate Initial Production (LRIP)	1	2019	4	2020
G-BOSS(E) Operational Test & Evaluation	1	2020	4	2020
G-BOSS(E) Full Rate Production Decision	4	2020	4	2020
G-BOSS(E) Full Rate Production	4	2020	4	2022

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605034A / *Tactical Security System (TSS)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	2.904	-	2.904	5.576	7.140	0.000	0.000	0.000	15.620
EQ4: *Tactical Security System (TSS)*	-	0.000	0.000	2.904	-	2.904	5.576	7.140	0.000	0.000	0.000	15.620

Note

This is a new start program in FY 2017.

A. Mission Description and Budget Item Justification

The Tactical Security System (TSS) is a modular, scalable, lightweight, rapidly deployable, ground based security and surveillance Family of Systems (FoS). The design of TSS allows for hasty emplacement, is tailorable to support short and long term security, surveillance and detection missions. The TSS and its components are designed to be employed as a stand-alone system, in a layered effort or integrated with additional force protection (FP) systems. Integration with additional sensors will be obtained through network communications and software in line with Net-Ready requirements. TSS will address four of the five base camp core protection/security capabilities identified in the Integrated Base Defense (IBD) Concept of Operations (CONOPS) which are perimeter security, entry control, persistent surveillance, warning and alerting. The TSS will be compliant with the Common Operating Environment (COE) Architecture and Implementation Plan. TSS is designed to be employed as a stand-alone system in a layered effort or integrated with additional force protection systems including motion, acoustic, seismic, surface, and subterranean detection technologies.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	2.904	-	2.904
Total Adjustments	0.000	0.000	2.904	-	2.904
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	2.904	-	2.904

Change Summary Explanation

Increase in FY 2017 funding is due to this program being a new start.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605034A / *Tactical Security System (TSS)*	Project (Number/Name) EQ4 / *Tactical Security System (TSS)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EQ4: *Tactical Security System (TSS)*	-	0.000	0.000	2.904	-	2.904	5.576	7.140	0.000	0.000	0.000	15.620
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This is a new start program in FY 2017.

A. Mission Description and Budget Item Justification

The Tactical Security System (TSS) is a modular, scalable, lightweight, rapidly deployable, ground based security and surveillance Family of Systems (FoS). The design of TSS allows for hasty emplacement, is tailorable to support short and long term security, surveillance and detection missions. The TSS and its components are designed to be employed as a stand-alone system, in a layered effort or integrated with additional force protection (FP) systems. Integration with additional sensors will be obtained through network communications and software in line with Net-Ready requirements. TSS will address four of the five base camp core protection/security capabilities identified in the Integrated Base Defense (IBD) Concept of Operations (CONOPS) which are perimeter security, entry control, persistent surveillance, warning and alerting. The TSS will be compliant with the Common Operating Environment (COE) Architecture and Implementation Plan. TSS is designed to be employed as a stand-alone system in a layered effort or integrated with additional force protection systems including motion, acoustic, seismic, surface, and subterranean detection technologies.

FY 2017 Base Funding in the amount of $2.904 million supports the system level Preliminary Design Review (PDR), establishment of the TSS capabilities in the System Integration Lab (SIL), completes the development, integration, and production of the TSS Engineering & Manufacturing Development (EMD) assets (production representative articles). The RDTE will also support the development of the Technical Data Package (TDP) and Product Support Analysis and Package, as well as the demonstration and Developmental Testing (DT) for the prototype system.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: TSS Design and Build	-	-	2.904
Description: TSS completes building of Engineering Development Model (EDM), integration with Integrated Ground Security Surveillance and Response Capability (IGSSR-C) and Common Operating Environment (COE), and Developmental Testing (DT) of prototype. ***FY 2017 Plans:*** TSS completes building of Engineering Development Model (EDM), integration with Integrated Ground Security Surveillance and Response Capability (IGSSR-C) and Common Operating Environment (COE), and Developmental Testing (DT) of prototype.			
Accomplishments/Planned Programs Subtotals	-	-	2.904

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605034A / *Tactical Security System (TSS)*	**Project (Number/Name)** EQ4 / *Tactical Security System (TSS)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• TSS (M90220): *TSS (M90220)*	-	-	-	-	-	-	-	11.230	7.211	Continuing	Continuing

Remarks

D. Acquisition Strategy

Tactical Security System (TSS) will eliminate the Non-Standard Equipment (NSE) currently used in the Force Protection System (FPS) under the Base Expeditionary Targeting and Surveillance System – Combined (BETSS-C) Quick Reaction Program (QRC) with improved surveillance capabilities in modular configurations along with enhanced network integration across the command and control system and Common Operating Environment (COE). In FY2016, the Department of Defense (DoD) Physical Security Enterprise and Analysis Group (PSEAG) will provide funding to support pre-milestone B activities and risk reduction activities.

The acquisition strategy for TSS is pending approval from the Milestone Decision Authority (MDA) with plans to leverage the Night Vision and Electronic Sensors Directorate (NVESD), Fort Belvoir, Virginia to provide programmatic and developmental support and existing RDT&E contracts for the system design, development, and integration of Engineering and Manufacturing Development (EMD) systems to support Operational Assessments (OA) and Low Rate Initial Production (LRIP). Key efforts include system design and engineering efforts, development of two engineering development models (EDMs), testing and evaluation for TSS Key Performance Parameters (KPPs)/Key System Attributes (KSAs)/Additional Performance Parameters (APAs), and Developmental and Operational Test and Evaluation.

Milestone C is planned for FY 2019 to align Ground-Based Operational Surveillance System (Expeditionary) (G-BOSS(E)), Integrated Ground Security, Surveillance and Response Capability (IGSSR-C), and TSS in order to gain programmatic efficiencies.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605034A / *Tactical Security System (TSS)*	Project (Number/Name) EQ4 / *Tactical Security System (TSS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TSS Project Management	MIPR	PM EOIR : Fort Belvoir, VA	0.000	-		-		0.087	Dec 2016	-		0.087	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.087		-		0.087	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TSS Design	TBD	TBD : TBD	0.000	-		-		0.918	Dec 2016	-		0.918	Continuing	Continuing	Continuing
TSS Prototypes	TBD	TBD : TBD	0.000	-		-		0.969	Dec 2016	-		0.969	Continuing	Continuing	Continuing
TSS Software Development	TBD	TBD : TBD	0.000	-		-		0.251	Dec 2016	-		0.251	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		2.138		-		2.138	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TSS Design Support	MIPR	RDECOM CERDEC : Fort Belvoir, VA	0.000	-		-		0.236	Dec 2016	-		0.236	Continuing	Continuing	Continuing
ARL Human Systems Integration Support	MIPR	US Army ARL : Adelphi, MD	0.000	-		-		0.025	Dec 2016	-		0.025	Continuing	Continuing	Continuing
CECOM FSD - Safety	MIPR	CECOM : APG, MD	0.000	-		-		0.219	Dec 2016	-		0.219	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.480		-		0.480	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TSS Test and Evaluation	MIPR	ATEC : APG, MD	0.000	-		-		0.199	Dec 2016	-		0.199	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605034A / *Tactical Security System (TSS)*	Project (Number/Name) EQ4 / *Tactical Security System (TSS)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.000	-		-		0.199		-		0.199	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		2.904		-		2.904	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605034A / *Tactical Security System (TSS)*	**Project (Number/Name)** EQ4 / *Tactical Security System (TSS)*

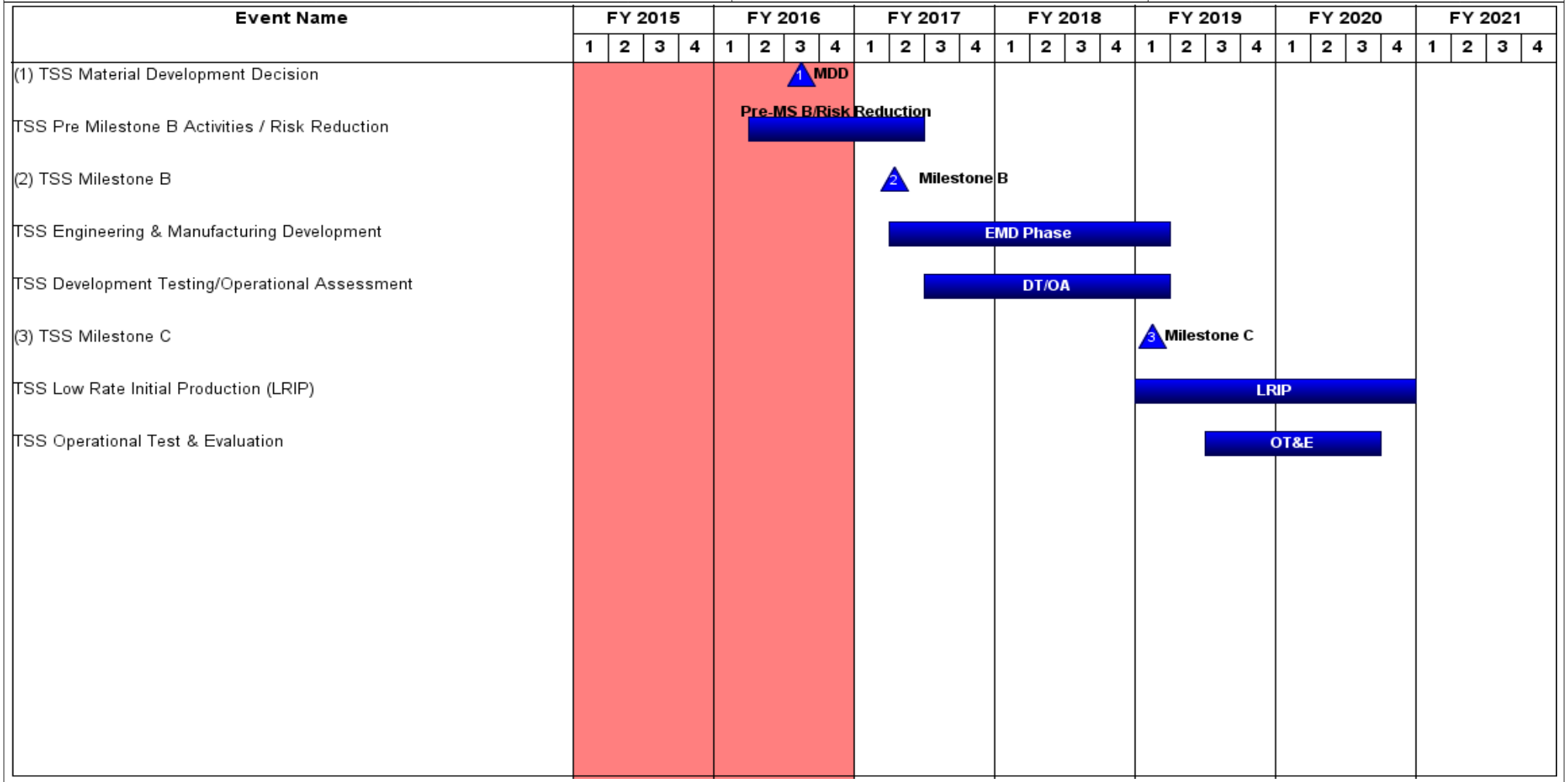

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605034A / *Tactical Security System (TSS)*	**Project (Number/Name)** EQ4 / *Tactical Security System (TSS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TSS Material Development Decision	3	2016	3	2016
TSS Pre Milestone B Activities / Risk Reduction	2	2016	2	2017
TSS Milestone B	2	2017	2	2017
TSS Engineering & Manufacturing Development	2	2017	1	2019
TSS Development Testing/Operational Assessment	3	2017	1	2019
TSS Milestone C	1	2019	1	2019
TSS Low Rate Initial Production (LRIP)	1	2019	4	2020
TSS Operational Test & Evaluation	3	2019	3	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	169.196	101.570	96.977	10.900	107.877	106.699	59.774	67.409	40.436	Continuing	Continuing
EB4: *CIRCM*	-	101.313	101.570	96.977	10.900	107.877	106.699	59.774	67.409	40.436	Continuing	Continuing
EE3: *A/C Surv Equip Dev*	-	14.274	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
EE4: *Common Missile Warning System (CMWS)*	-	53.609	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

Fiscal Year (FY) 2015 funds are a restructuring of funds from FY 2014 Projects 665 (A/C Surv Equip Dev), VU7 (Common Missile Warning System), and VU8 (Common Infrared Counter Measure), Program Element (PE) 0604270A (EW Development) to projects EE3 (A/C Surv Equip Dev), EE4 (Common Missile Warning System (CMWS)), and EB4 (CIRCM) respectively, PE 0605035A (Common Infrared Countermeasures (CIRCM)). Funds for project EB4 (CIRCM) remain in PE 0605035A (Common Infrared Countermeasures (CIRCM)) in FY 2016 and beyond. Funds from projects EE3 (A/C Surv Equip Dev), EE4 (Common Missile Warning System (CMWS)), PE 0605035A (Common Infrared Countermeasures (CIRCM)) are restructured to projects ER7 (Aircraft Survivability Equipment Development) and ER8 (Common Missile Warning System (CMWS)) respectively, PE 0605051A (Aircraft Survivability Development) for FY 2016 and beyond for more efficient and effective program management.

A. Mission Description and Budget Item Justification

The Common Infrared Countermeasure (CIRCM) budget line includes CIRCM (EB4), A/C Surv Equip Dev (EE3), and Common Missile Warning System (CMWS) (EE4). This budget line also includes funding for Joint Urgent Operational Needs Statement (JUONS) SO-0010 Phase 2a and the Headquarters Department of the Army (HQDA) Directed Requirement for the Advanced Threat Warner and Common Infrared Countermeasures Quick Reaction Capability (ATW & CIRCM QRC).

EB4: CIRCM

CIRCM is an infrared (IR) countermeasure system that interfaces with a Missile Warning System (MWS) to provide near spherical protection of the host platform in order to defeat IR threat missiles. The CIRCM will provide the sole acquisition of future laser-based IR countermeasure systems for all rotary-wing, tilt-rotor, and small fixed-wing aircraft across the Department of Defense. The Army's concept of CIRCM is part of the Suite of Integrated Infrared Countermeasures (SIIRCM). The core components of the SIIRCM concept are: a MWS, IR expendables countermeasures (flares) and a laser-based Infrared Countermeasure (IRCM). The SIIRCM detects, declares and initiates IRCM against IR-guided Surface-to-Air Missiles (SAM) or Air-to-Air Missiles (AAM). The CIRCM is the next generation of the laser-based IRCM component and will interface with both the Army's CMWS and future missile warning systems.

The A-Kit for CIRCM includes mounting hardware, wiring harnesses, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type. The CIRCM B-Kit is the mission kit (laser, pointer tracker, and controller) required to achieve near spherical coverage for an aircraft.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605035A *I Common Infrared Countermeasures (CIRCM)*

This program also includes funding to counter emerging technology as identified in JUONS S0-0010. Initially, a select number of aircraft in the threat area of responsibility will be outfitted with a Department of the Department of the Navy Large Aircraft Infrared Countermeasure (DoNLAIRCM) system. However, this approach came with a Space, Weight and Power (SWaP) penalty which is being addressed as a follow-on HQDA Directed Requirement with a Quick Reaction Capability (QRC) using Advanced Threat Warner (ATW) and CIRCM.

EE3: Aircraft Surv Equip Dev

Beginning in FY 2016, funds were moved to Project ER7 (Aircraft Survivability Equipment Development), PE 0605051A (Aircraft Survivability Development).

The objective of the Aircraft Survivability Equipment (ASE) Development Project is to improve Radio Frequency (RF) ASE for Army aviation. The APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes RF emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

EE4: CMWS

Beginning in FY 2016, funds have been moved to Project ER8 (Common Missile Warning System (CMWS)), PE 0605051A (Aircraft Survivability Development).

The US Army operational requirements concept for Aviation IR countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). SIIRCM is an integrated warning and countermeasure system to enhance aircraft survivability against IR-guided threat missile systems. The CMWS is a core element of the SIIRCM concept. CMWS is an integrated ultraviolet (UV) missile warning system, with an Improved Countermeasure Dispenser (ICMD) serving as a subsystem to a host aircraft.

The CMWS program is a UV missile warning system that cues both flare and laser-based countermeasures to defeat incoming IR-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding material release conditions to achieve a Full Material Release (FMR) for CMWS and ensure protection against emerging IR-guided missile threats.

This program also includes funding to counter emerging technology as identified in JUONS S0-0010. Initially in Phase 2A, a select number of aircraft in the threat area of responsibility will be outfitted with a Department of the Department of the Navy Large Aircraft Infrared Countermeasure (DoNLAIRCM) system.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	145.337	77.570	72.909	-	72.909
Current President's Budget	169.196	101.570	96.977	10.900	107.877
Total Adjustments	23.859	24.000	24.068	10.900	34.968
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	24.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	30.000	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-6.141	-	24.068	10.900	34.968

Change Summary Explanation

FY 2017 funding increase was to align this Project with the approved Milestone B Army Cost Position.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EB4 / *CIRCM*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EB4: *CIRCM*	-	101.313	101.570	96.977	10.900	107.877	106.699	59.774	67.409	40.436	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funds in the program are a realignment of funds from program VU8, PE 0604270A (Electronic Warfare Development) for more efficient and effective program management.

A. Mission Description and Budget Item Justification

The Common Infrared Countermeasure (CIRCM) is an infrared (IR) countermeasure system that interfaces with a Missile Warning System (MWS) to provide near spherical protection of the host platform in order to defeat IR threat missiles. The CIRCM will provide the sole acquisition of future laser-based IR countermeasure systems for all rotary-wing, tilt-rotor, and small fixed-wing aircraft across the Department of Defense. The Army's concept of CIRCM is part of the Suite of Integrated Infrared Countermeasures (SIIRCM). The core components of the SIIRCM concept are: a MWS, IR expendables countermeasures (flares) and a laser-based Infrared Countermeasure (IRCM). The SIIRCM detects, declares and initiates IRCM against IR-guided Surface-to-Air Missiles (SAM) or Air-to-Air Missiles (AAM). The CIRCM is the next generation of the laser-based IRCM component and will interface with both the Army's Common Missile Warning System (CMWS) and future missile warning systems.

The A-Kit for CIRCM includes mounting hardware, wiring harnesses, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type. The CIRCM B-Kit is the mission kit (laser, pointer tracker, and controller) required to achieve near spherical coverage for an aircraft.

This program also includes funding to counter emerging technology as identified in JUONS S0-0010. Initially, a select number of aircraft in the threat area of responsibility will be outfitted with a Department of the Department of the Navy Large Aircraft Infrared Countermeasure (DoNLAIRCM) system. However, this approach came with a Space, Weight and Power (SWaP) penalty which is being addressed as a follow-on HQDA Directed Requirement with a Quick Reaction Capability (QRC) using Advanced Threat Warner (ATW) and CIRCM.

FY 2017 Base Research, Development, Test, and Evaluation (RDTE) funding in the amount of $96.977 million continues the Engineering and Manufacturing Development (EMD) phase to include A-Kit prototypes for the AH-64E, MH-60M, and HH-60M platforms, and supports integration with other missile warning systems.

FY 2017 Overseas Contingency Operations (OCO) funding in the amount of $10.900 million will support of efforts related to the HQDA Directed Requirement to include CIRCM QRC A-Kit development, integration with platforms and other ASE equipment, and initial Test and Evaluation efforts.

The intent of the ATW & CIRCM QRC program is to reduce the SWaP that require operational tradeoffs that are associated with the Phase 2a solution.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EB4 / *CIRCM*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: CIRCM Product Development ***Description:*** CIRCM Product Development, Support Costs, & Management Services ***FY 2015 Accomplishments:*** RDTE dollars supported the CIRCM EMD phase to include non-recurring engineering (NRE), prototype manufacturing for B-Kit prototypes, platform integration, and support equipment. "Other R&D" supported the analysis of emerging threats. ***FY 2016 Plans:*** RDTE dollars support the CIRCM EMD phase to include Critical Design Review (CDR) Risk Reduction Activities, B-Kit ship set prototype deliveries, A-Kit integration, prototype A-Kit Modification Work Order (MWO) development, Training Support Plan (TSP), Technical Manual (TM) development, and NRE. ***FY 2017 Base Plans:*** RDTE dollars support the CIRCM EMD phase to include continued B-Kit and A-Kit development, CDR and A-Kit prototype procurement/deliveries. Other RDTE activities will support systems engineering/program management (SEPM) and Logistics Activities (Core Depot Assessment, Performance Based Logistics Business Case Analysis and Technical Manual updates).	68.154	66.113	56.755	-	56.755
Title: CIRCM Test & Evaluation (T&E) ***Description:*** CIRCM Test & Evaluation (T&E) Activities ***FY 2015 Accomplishments:*** RDTE dollars supported the CIRCM EMD phase efforts to include initiation of government conducted test events, modeling and simulation, and lab support. "Other Testing" included funds to develop IRCM solutions to defeat newly acquired threats. ***FY 2016 Plans:*** RDTE dollars support the CIRCM EMD phase to include software testing, flight testing, and Reliability Growth Testing (RGT). "Other Testing" includes funds to develop IRCM solutions to defeat newly acquired threats. ***FY 2017 Base Plans:***	33.159	11.457	40.222	-	40.222

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EB4 / *CIRCM*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Supports CIRCM developmental testing to include A-kit testing for MH-60M, HH-60M, and AH-64E. This funding also includes test efforts to provide required lab capabilities such as in a system integration lab and procure test assets. Also continues efforts to develop IRCM solutions to defeat newly acquired threats.					
Title: Advanced Threat Warner (ATW) & CIRCM Quick Reaction Capability (QRC) Congressional Add ***Description:*** ATW & CIRCM QRC Development ***FY 2016 Plans:*** RDT&E dollars will support the ATW & CIRCM QRC A-Kit development, integration, and associated T&E efforts. This effort will integrate the ATW and CIRCM systems to reduce Space, Weight and Power (SWaP) in support of JUONS SO-0010.	-	24.000	-	-	-
Title: ATW & CIRCM QRC OCO ***Description:*** ATW & CIRCM QRC Integration ***FY 2017 Base Plans:*** This project only has OCO dollars for FY17 ***FY 2017 OCO Plans:*** Continue the ATW and CIRCM QRC A-Kit development and integration for the H-60, H-47, & H-64 platform variants and integration and integration with other ASE systems.	-	-	0.000	10.900	10.900
Accomplishments/Planned Programs Subtotals	101.313	101.570	96.977	10.900	107.877

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• APA Funding: *SSN AZ3537; BA4; CIRCM*	-	-	0.000	108.721	108.721	6.337	55.460	115.625	120.851	Continuing	Continuing

Remarks

None

D. Acquisition Strategy

The December 28, 2011 Defense Acquisition Executive (DAE) Acquisition Decision Memorandum (ADM) authorized entry into the Technology Maturation and Risk Reduction (TMRR) phase, designated the program a pre-Major Defense Acquisition Program (MDAP), and approved the updated exit criteria. CIRCM Engineering and

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EB4 / *CIRCM*

Manufacturing Development (EMD) ADM was approved on August 25, 2015. The EMD contract was awarded to Northrup Grumman Systems Corporation (NGSC) on August 28, 2015. The EMD contract will include priced options for Other Platform A-Kit Development, A-Kit Engineering Support, Low Rate Initial Production (LRIP) 1 and 2 Prototypes (Hardware and Installs), LRIP 1 and 2 Engineering and Test Support, Software Technical Data Package (TDP), Navy funded requirements, and Defense Exportability Features (DEF). Upon CIRCM MS C approval planned for the second quarter of FY18, the LRIP and Engineering Support options may be exercised and the program may immediately enter the Production & Deployment phase with First Unit Equipped (FUE) planned for first quarter of FY20, and a Full Rate Production Decision Review (FRPDR) planned for the first quarter of FY20.

Due to the urgency of addressing the SWaP penalty issues related to the JUONS SO-0010 initial DoNLAIRCM material solution, the Army Directed Requirement with an ATW and CIRCM QRC will be a sole source effort with Northrop Grumman being the Prime contractor. Northrop Grumman has the required technical capabilities, knowledge and special equipment needed to meet the urgent and compelling need for the ATW and CIRCM QRC efforts.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EB4 / *CIRCM*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering Program Management	Various	Various : -	0.000	7.447		9.503		9.371		-		9.371	Continuing	Continuing	Continuing
ATW & CIRCM QRC System Engineering & Program Management	Various	Various : -	0.000	-		-		0.000		1.100	Oct 2016	1.100	0	1.100	0
		Subtotal	0.000	7.447		9.503		9.371		1.100		10.471	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Non-Recurring Engineering (NRE)	C/CPFF	Various : -	0.000	20.101	Aug 2015	34.626	Mar 2016	35.303	Nov 2016	-		35.303	Continuing	Continuing	Continuing
Prototype Manufacturing	C/FPIF	Various : -	0.000	32.620	Aug 2015	13.890	Jan 2016	-		-		-	Continuing	Continuing	Continuing
Development Facilities	Various	Various : -	0.000	-		-		3.000	Apr 2017	-		3.000	Continuing	Continuing	Continuing
Other R&D	Various	Various : -	0.000	7.286		5.167	Mar 2016	5.081	Mar 2017	-		5.081	Continuing	Continuing	Continuing
Data	Various	Various : -	0.000	-		1.427	May 2016	1.000	May 2017	-		1.000	Continuing	Continuing	Continuing
ATW & CIRCM QRC NRE	C/CPFF	Various : -	0.000	-		-		0.000		3.280	Nov 2016	3.280	0	3.280	0
ATW & CIRCM QRC Prototype Manufacturing	C/CPFF	Various : -	0.000	-		-		0.000		2.120	Nov 2016	2.120	Continuing	Continuing	Continuing
ATW & CIRCM QRC A-Kit Development & Integration	Various	Various : -	0.000	-		22.390	Apr 2016	-		-		-	0	22.390	Continuing
		Subtotal	0.000	60.007		77.500		44.384		5.400		49.784	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Equipment	Various	Various : -	0.000	0.700		1.500	Jul 2016	3.000	Jul 2017	-		3.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.700		1.500		3.000		-		3.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EB4 / *CIRCM*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Test and Evaluation	Various	Various : -	0.000	2.500		5.050	Apr 2016	17.251	Apr 2017	-		17.251	Continuing	Continuing	Continuing
Other Testing	Various	Various : -	0.000	30.659		6.407	May 2016	22.971	May 2017	-		22.971	Continuing	Continuing	Continuing
ATW & CIRCM Government System Test & Evaluation	Various	Various : -	0.000	-		1.610	Apr 2016	0.000		4.400	Mar 2017	4.400	Continuing	Continuing	Continuing
		Subtotal	0.000	33.159		13.067		40.222		4.400		44.622	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	101.313		101.570		96.977		10.900		107.877	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EB4 / *CIRCM*

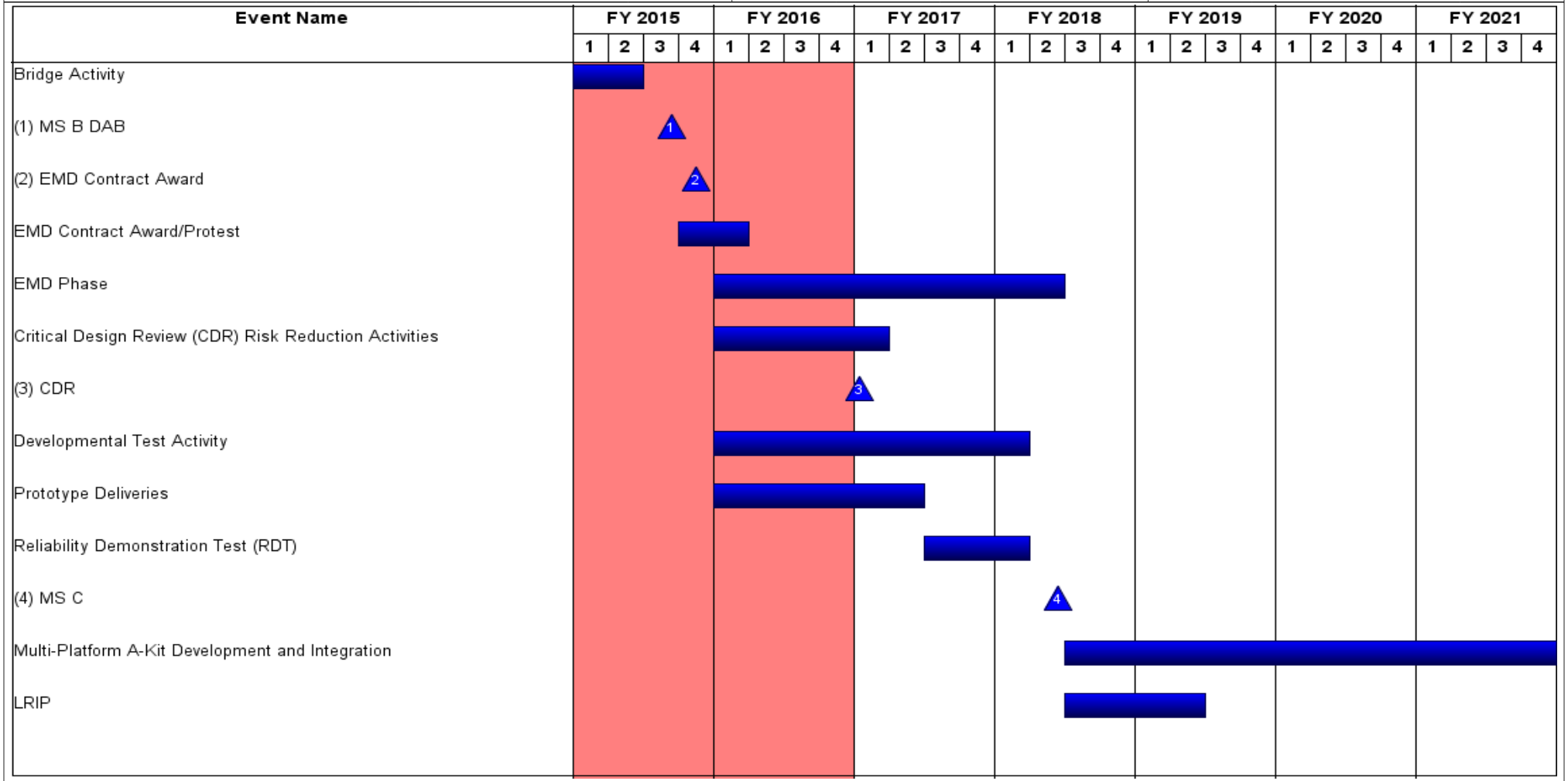

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EB4 / *CIRCM*

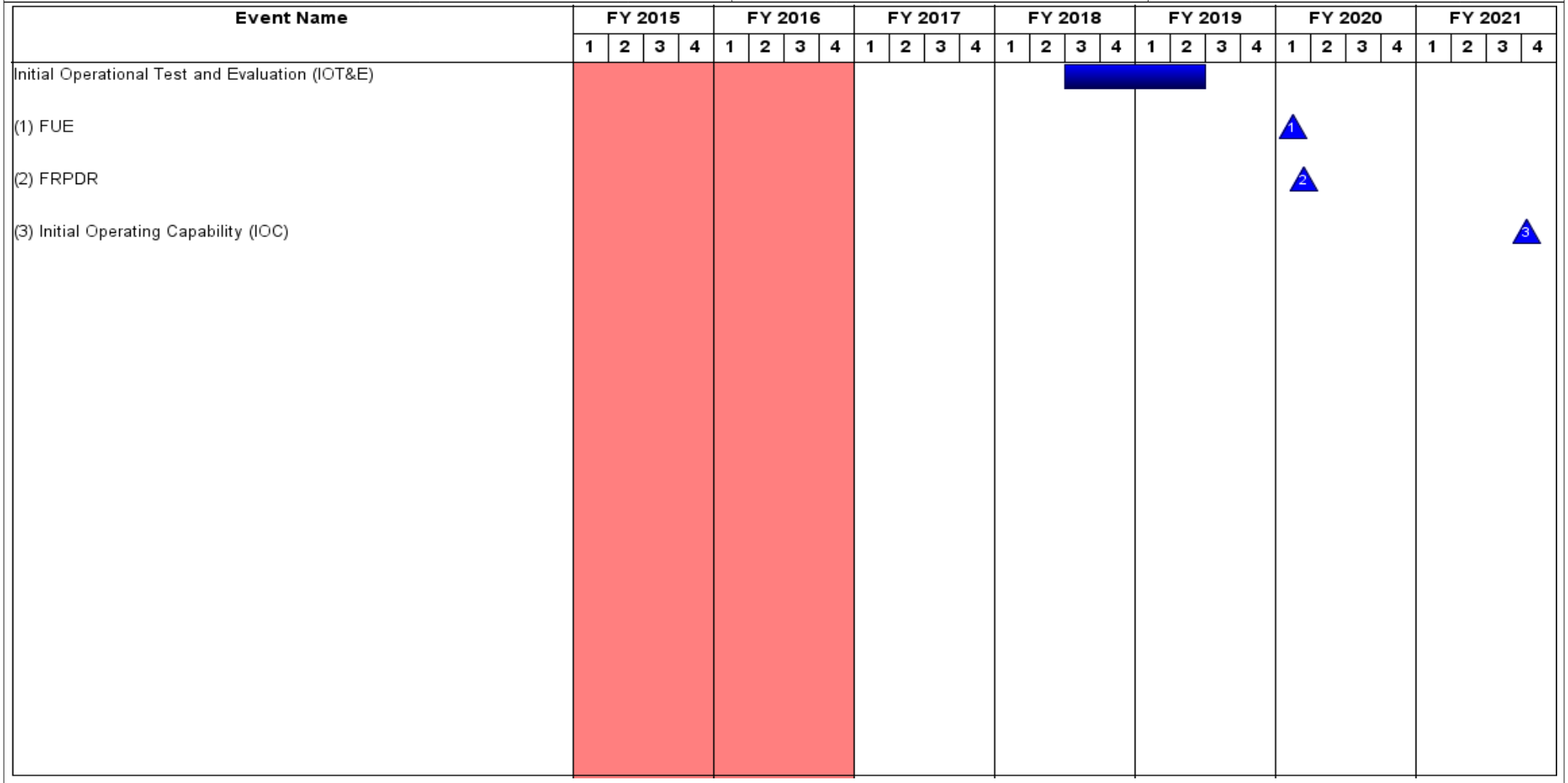

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EB4 / *CIRCM*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Bridge Activity	4	2014	2	2015
MS B DAB	3	2015	3	2015
EMD Contract Award	4	2015	4	2015
EMD Contract Award/Protest	4	2015	1	2016
EMD Phase	1	2016	2	2018
Critical Design Review (CDR) Risk Reduction Activities	1	2016	1	2017
CDR	1	2017	1	2017
Developmental Test Activity	1	2016	1	2018
Prototype Deliveries	1	2016	2	2017
Reliability Demonstration Test (RDT)	3	2017	1	2018
MS C	2	2018	2	2018
Multi-Platform A-Kit Development and Integration	3	2018	4	2021
LRIP	3	2018	2	2019
Initial Operational Test and Evaluation (IOT&E)	3	2018	2	2019
FUE	1	2020	1	2020
FRPDR	1	2020	1	2020
Initial Operating Capability (IOC)	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EE3 / *A/C Surv Equip Dev*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EE3: *A/C Surv Equip Dev*	-	14.274	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Fiscal Year (FY) 2015 funds are a restructuring of funds from FY 2014 Project 665 (A/C Surv Equip Dev), Program Element (PE) 0604270A (EW Development) to project EE3 (A/C Surv Equip Dev), PE 0605035A (Common Infrared Countermeasures (CIRCM)). Funds from Project EE3 (A/C Surv Equip Dev), PE 0605035A (Common Infrared Countermeasures (CIRCM)) are restructured to Project ER7 (Aircraft Survivability Equipment Development), PE 0605051A (Aircraft Survivability Development) for FY 2016 and beyond for more efficient and effective program management.

A. Mission Description and Budget Item Justification

The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve Radio Frequency (RF) ASE for Army aviation. The APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes RF emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1 serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V) RWR implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3.

Phase 2, RWR Modernization, adopts the ongoing United States Navy Class I RWR Engineering Change Proposal (ECP), commonly referred to as the APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Under Phase 2, the Army will develop enhancements to the APR-39D(V)2 as hardware upgrades needed to keep the APR-39D(V)2 technically relevant and address emerging Low Probability Intercept (LPI) and frequency agile threats.

Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft; Materiel Development Decision (MDD) for this ECM jamming capability phase is not expected until later in the Future Years Defense Program (FYDP).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Phase 2 Radio Frequency Countermeasure	14.274	-	-	-	-
Description: Phase 2 Product Development					
FY 2015 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EE3 / *A/C Surv Equip Dev*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
FY15 Base RDT&E funding supported AH-64E A-Kit development, Army Electro-Magnetic Interference (EMI) testing, Antenna Macrocell upgrades (MaRCm), funding for the Reliability Demonstration testing, and Mission Data Set (MDS) development.					
Accomplishments/Planned Programs Subtotals	14.274	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• AZ3511: *Radio Frequency CM (AZ3511)*	56.163	28.730	50.425	-	50.425	50.067	40.833	74.147	57.498	Continuing	Continuing

Remarks

D. Acquisition Strategy

Army RF ASE is managed by Project Manager ASE (PM ASE) for development, testing, procurement, integration and installation on Army rotary wing and small fixed wing aviation platforms. PM ASE proposed a three-phased path forward commensurate with user priorities and affordability considerations. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1 addresses obsolescence/Diminishing Manufacturing Sources (DMS) issues associated with the currently fielded AN/APR-39A(V) RWR via sole source ECP awarded to the APR-39A manufacturer.

Phase 2 adopts the on-going United States Navy (USN) RWR Class I Correction of Deficiencies ECP commonly referred to as the APR-39D(V)2 system, limiting service-unique design, test, and integration expenses. Full Army participation throughout the remaining development, testing, procurement, fielding, and sustainment of the APR-39D(V)2 Digital RWR will address the significant Army RF capability gap while avoiding additional costs associated with a single-Service solution. This multi-Service approach also fields an effective and suitable material solution sooner to support the re-balance of the National Defense Strategy to the RF threat-heavy Asia-Pacific Region.

Phase 3 will develop and integrate active Electronic Countermeasure jamming capability for select aircraft.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EE3 / *A/C Surv Equip Dev*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Threat Management	Various	Various : -	7.985	0.848		-		-		-		-	Continuing	Continuing	Continuing
Project Management	Various	Various : -	0.182	0.247		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.167	1.095		-		-		-		-	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Radar Warning Receiver (RWR)	Various	Lab Demo / Study : Various	10.634	-		-		-		-		-	Continuing	Continuing	Continuing
S/W Development	Various	OGA, : Aberdeen Proving Ground, MD	0.000	1.498		-		-		-		-	Continuing	Continuing	Continuing
SIL Updates	MIPR	- : AMRDEC	0.000	1.726		-		-		-		-	Continuing	Continuing	Continuing
Depot Standup	MIPR	Tobyhanna : Tobyhanna, PA	1.052	-		-		-		-		-	0	1.052	0
Platform Integration	Various	Multiple : -	0.000	1.844		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	11.686	5.068		-		-		-		-	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	Various	Various : -	2.359	0.444		-		-		-		-	Continuing	Continuing	Continuing
Matrix Support	Various	Various : -	6.236	0.194		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.595	0.638		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EE3 / *A/C Surv Equip Dev*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-Service DT/OT	Various	Various : -	0.025	1.557		-		-		-		-	Continuing	Continuing	Continuing
Government system Test and Evaluation	Various	Various : Various	0.000	5.916		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.025	7.473		-		-		-		-	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	28.473	14.274		0.000		-		-		-	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EE3 / *A/C Surv Equip Dev*

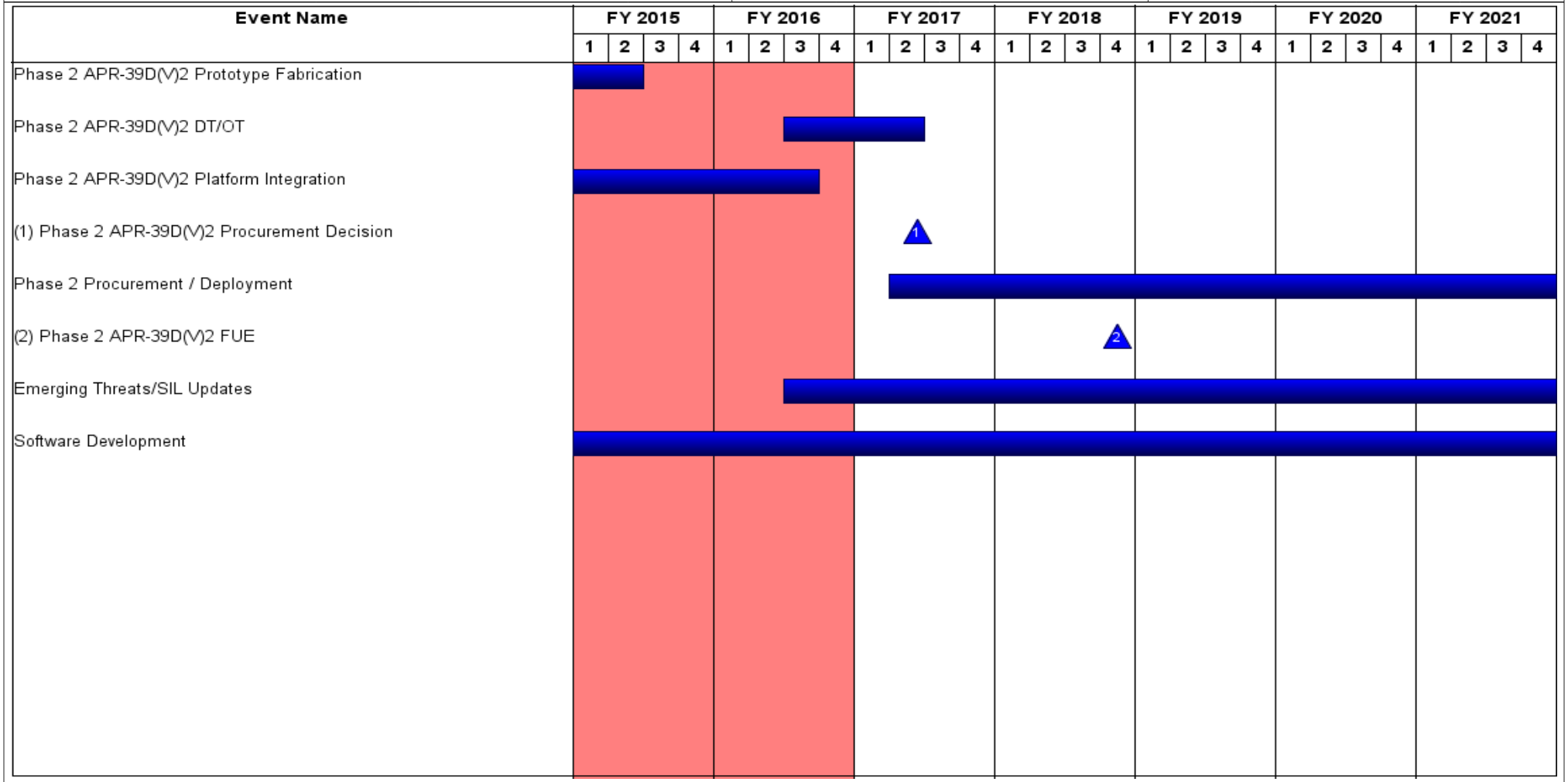

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EE3 / *A/C Surv Equip Dev*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Phase 2 APR-39D(V)2 Prototype Fabrication	4	2013	2	2015
Phase 2 APR-39D(V)2 DT/OT	3	2016	2	2017
Phase 2 APR-39D(V)2 Platform Integration	1	2014	3	2016
Phase 2 APR-39D(V)2 Procurement Decision	2	2017	2	2017
Phase 2 Procurement / Deployment	2	2017	4	2021
Phase 2 APR-39D(V)2 FUE	4	2018	4	2018
Emerging Threats/SIL Updates	3	2016	4	2021
Software Development	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EE4 / *Common Missile Warning System (CMWS)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EE4: *Common Missile Warning System (CMWS)*	-	53.609	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Fiscal Year (FY) 2015 funds are a restructuring of funds from FY 2014 Project VU7 (Common Missile Warning System), Program Element (PE) 0604270A (EW Development) to Project EE4 (Common Missile Warning System (CMWS)), PE 0605035A (Common Infrared Countermeasures (CIRCM)). Funds from Project EE4 (Common Missile Warning System (CMWS)), PE 0605035A (Common Infrared Countermeasures (CIRCM)) are restructured to Project ER8 (Common Missile Warning System (CMWS)), PE 0605051A (Aircraft Survivability Development) for FY 2016 and beyond for more efficient and effective program management.

A. Mission Description and Budget Item Justification

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

The CMWS program is a UV missile warning system that cues both flare and laser-based countermeasures to defeat incoming IR-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS Electronic Control Unit (ECU) receives UV missile detection data from Electro-Optic Missile Sensors (EOMS) and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently Advanced Threat Infrared Countermeasures (ATIRCM)-equipped CH-47 platform only). In addition, the CMWS ECU receives from the EOMS unguided munitions detection data which it also passes to the aircrew through aural and visual alerts. The aircrew then applies the appropriate Tactics, Techniques and Procedures (TTPs) to break contact or engage the enemy with own-ship ordnance. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding material release conditions to achieve a Full Material Release (FMR) for CMWS and ensure protection against emerging IR-guided missile threats.

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

Joint Urgent Operational Needs Statement (JUONS) SO-0010 will integrate the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system on a select number of Army and SOCOM aircraft in the threat area of responsibility. The purpose of this JUONS is to detect and defeat proliferate Surface-to-Air Missiles

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EE4 / *Common Missile Warning System (CMWS)*

(SAM) threats. HQDA has provided a follow up Directed Requirement to this JUONS to reduce Space, Weight and Power (SWaP) and accelerate delivery of Common Infrared Countermeasures (CIRCMs).

The intent of the ATW & CIRCM QRC program is to reduce the SWaP that require operational tradeoffs that are associated with the Phase 2a solution.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Development Effort ***Description:*** RDT&E funding supports continuing development engineering of the Threat Analysis Database (TAD), salaries, and integration with other ASE systems. ***FY 2015 Accomplishments:*** $23.609M FY15 Base RDT&E funding supported continuing development engineering of the Threat Analysis Database (TAD) by developing full spectrum compliance for Tier 1 threat list by improving Block 2.0 algorithm and creating software architecture for analysis of emerging threats, program management, performed data modeling of the CMWS ASE Buss Controller to platform Interface Requirements Specification/Interface Design Document in a FACE compliant methodology, prime contractor engineering services, air worthiness support, Apache and Black Hawk aircraft integration, testing and test instrumentation, and travel. $30.000M FY15 OCO RDT&E funding supported aircraft integration of the JUONS solution on US Army rotary wing aircraft, prime contractor engineering services, test and evaluation, and program management.	53.609	-	-	-	-
Accomplishments/Planned Programs Subtotals	53.609	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• APA: *BA 4 AZ3517*	201.912	104.348	41.626	56.115	97.741	37.225	32.719	18.775	10.917	69.608	573.245

Remarks

D. Acquisition Strategy

The acquisition strategy includes buying CMWS B-Kits to support the Army Force Generation (ARFORGEN) model and installation of A-Kits on all modernized aircraft. The previous CMWS production contract was a firm fixed-priced (FFP), Indefinite Delivery, Indefinite Quantity (IDIQ) contract. A FFP bridge contract was awarded March 2013 for CMWS hardware. The follow-on CMWS production FFP/CPFF IDIQ contract is a 3 year firm fixed price contract to procure the remaining Generation 3 ECUs and A-Kits and was awarded SEP 2013. The Gen 3 ECU, which provides increased processing capacity and enables unguided munitions detection, became a part of the system in FY 2010; First Unit Equipped (FUE) for the Gen 3 ECU was achieved in Operation Enduring Freedom (OEF) on 18 September 2013. All aircraft deployed to OEF have received the new processor with hostile fire detection capability. Gen 3 ECU's will gradually replace all Gen 2 ECU's across the Aviation fleet.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EE4 / *Common Missile Warning System (CMWS)*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EE4 / *Common Missile Warning System (CMWS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	2.670	5.130		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	2.670	5.130		-		-		-		-	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Tier 2/3 Upgrades	Various	Various : -	2.000	-		-		-		-		-	Continuing	Continuing	Continuing
CMWS Threat Analysis Database Design	Various	BAE : Various	0.455	-		-		-		-		-	Continuing	Continuing	Continuing
Threat Analysis Database (TAD)	Various	BAE : Various	0.000	0.874	Jun 2015	-		-		-		-	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	Various	Various : -	11.466	-		-		-		-		-	Continuing	Continuing	Continuing
CMWS Data Modeling	TBD	Various : Various	0.000	0.688		-		-		-		-	Continuing	Continuing	Continuing
Prime Contractor - Integration Engineering	TBD	TBD : TBD	0.000	7.787		-		-		-		-	Continuing	Continuing	Continuing
Aircraft Integration	TBD	Various : Various	0.000	19.974		-		-		-		-	Continuing	Continuing	Continuing
Software	TBD	Various : Various	0.000	3.000		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	13.921	32.323		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	TBD	TBD : Various	0.000	16.156		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.000	16.156		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	Project (Number/Name) EE4 / *Common Missile Warning System (CMWS)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.591	53.609		0.000		-		-		-	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EE4 / *Common Missile Warning System (CMWS)*

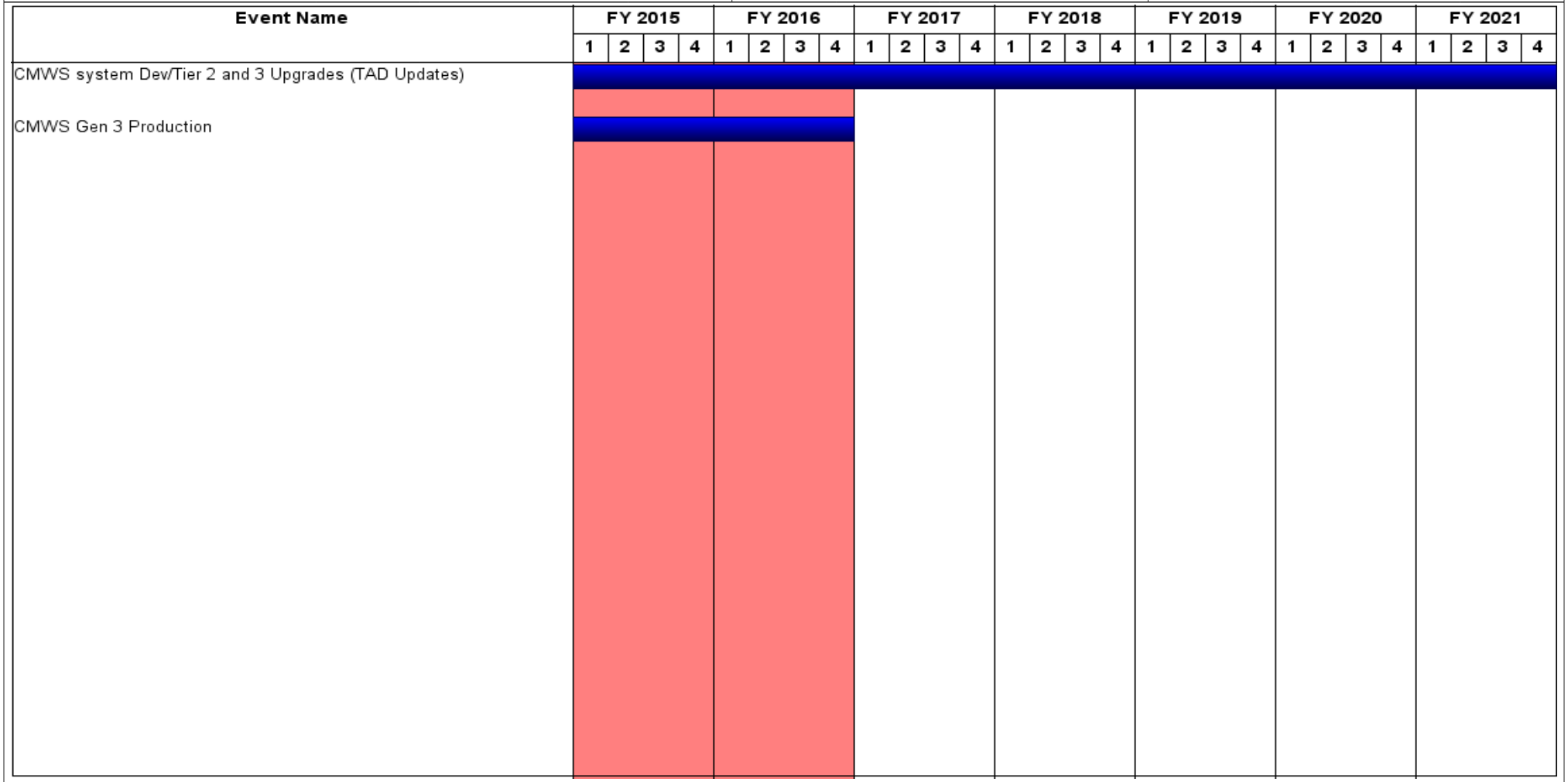

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605035A / *Common Infrared Countermeasures (CIRCM)*	**Project (Number/Name)** EE4 / *Common Missile Warning System (CMWS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CMWS system Dev/Tier 2 and 3 Upgrades (TAD Updates)	2	2011	4	2021
CMWS Gen 3 Production	3	2012	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	2.089	-	2.089	6.543	5.188	8.851	3.831	0.000	26.502
EQ5: *Combating Weapons of Mass Destruction (CWMD)*	-	0.000	0.000	2.089	-	2.089	6.543	5.188	8.851	3.831	0.000	26.502

A. Mission Description and Budget Item Justification

The Man-Portable Radiological Detection System (MRDS) capability will provide increased radiological and nuclear (RN) detection, localization, presumptive identification and field-confirmatory identification capabilities that are networked to provide situational awareness at the tactical level. The MRDS will support Countering Weapons of Mass Destruction (CWMD) Interdiction and Elimination operations, specifically RN Sensitive Site Assessments and Sensitive Site Exploitation. Future increments of this capability may also support Reconnaissance and Surveillance across the full range of CWMD operations. This capability supports Radiological and Nuclear Interdiction (RNI) and Weapons of Mass Destruction - Elimination (WMD-E) operations to: systematically locate, secure, characterize, and disable WMD programs and related capabilities.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	2.089	-	2.089
Total Adjustments	0.000	0.000	2.089	-	2.089
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	2.089	-	2.089

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*	Project (Number/Name) EQ5 / *Combating Weapons of Mass Destruction (CWMD)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EQ5: *Combating Weapons of Mass Destruction (CWMD)*	-	0.000	0.000	2.089	-	2.089	6.543	5.188	8.851	3.831	0.000	26.502
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Man-Portable Radiological Detection System (MRDS) capability will provide increased radiological and nuclear (RN) detection, localization, presumptive identification and field-confirmatory identification capabilities that are networked to provide situational awareness at the tactical level. The MRDS will support Countering Weapons of Mass Destruction (CWMD) Interdiction and Elimination operations, specifically RN Sensitive Site Assessments and Sensitive Site Exploitation. Future increments of this capability may also support Reconnaissance and Surveillance across the full range of CWMD operations. This capability supports Radiological and Nuclear Interdiction (RNI) and Weapons of Mass Destruction - Elimination (WMD-E) operations to: systematically locate, secure, characterize, and disable WMD programs and related capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: MRDS: Acquisition Documentation Development ***Description:*** Provide the acquisition documentation for the MRDS program MS-C. ***FY 2017 Plans:*** Initiate the development of the acquisition documentation.	-	-	0.260
Title: MRDS: Program Management ***Description:*** Provide Program Management ***FY 2017 Plans:*** MRDS: Initiate Government program management and Integrated Product Team (IPT) support.	-	-	0.299
Title: MRDS: Developmental Test and Evaluation Support ***Description:*** Provide support for development of Test & Evaluation Plan for MRDS. ***FY 2017 Plans:*** Provide Developmental Test and Evaluation for the MRDS program.	-	-	0.090
Title: MRDS: System Engineering ***Description:*** Provide system engineering support to the MRDS program.	-	-	0.470

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*	**Project (Number/Name)** EQ5 / *Combating Weapons of Mass Destruction (CWMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2017 Plans: Initiate the system engineering planning and support for the MRDS program.			
Title: MRDS: Cybersecurity ***Description:*** Provide cybersecurity to the MRDS program. ***FY 2017 Plans:*** Initiate cybersecurity planning and support to the MRDS program.	-	-	0.200
Title: MRDS: Acquisition Logistics ***Description:*** Provide Acquisition Logistics for the MRDS program. ***FY 2017 Plans:*** Initiate acquisition logistics planning and support to the MRDS program.	-	-	0.300
Title: MRDS: Analytical Support ***Description:*** Provide analytical support to the MRDS program. ***FY 2017 Plans:*** Provide analytical support and planning to the MRDS program.	-	-	0.470
Accomplishments/Planned Programs Subtotals	-	-	2.089

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Man-portable Radiological Detection System is a single step acquisition strategy starting at Milestone C to acquire Commercial-Off-The-Shelf equipment sets consisting of a Hands-Free search device, a Hand-Held Radioisotope Identification Device, an integrated tactical radio network, and a Situational Awareness tool in order to provide specialized Army units with a net-ready, rugged, and reliable system that can detect, identify, and characterize designated radionuclides and transmit that information securely to tactical, operational, and strategic command levels in near-real time. The contract approach will be a full and open fixed price incentive successive targets contract for LRIP systems to support post Milestone C testing, and an indefinite delivery indefinite quantity fixed price incentive successive targets contract for the full rate production task order.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*	**Project (Number/Name)** EQ5 / *Combating Weapons of Mass Destruction (CWMD)*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*	Project (Number/Name) EQ5 / *Combating Weapons of Mass Destruction (CWMD)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	Various : Various	0.000	-		-		0.299		-		0.299	0	0.299	0
		Subtotal	0.000	-		-		0.299		-		0.299	0.000	0.299	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity	MIPR	Edgewood Chemical and Biological Center : Edgewood, Maryland	0.000	-		-		0.200		-		0.200	0	0.200	0
Acquisition Logistics	MIPR	Communications-Electronics Command : Aberdeen Proving Ground, MD	0.000	-		-		0.300		-		0.300	0	0.300	0
Analytical Support	MIPR	Various : Various	0.000	-		-		0.600		-		0.600	0	0.600	0
Systems Engineering	MIPR	Edgewood Chemical and Biological Center : Aberdeen Proving Ground, MD	0.000	-		-		0.600		-		0.600	0	0.600	0
		Subtotal	0.000	-		-		1.700		-		1.700	0.000	1.700	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DT&E	MIPR	ATEC : Aberdeen Proving Ground, MD	0.000	-		-		0.090		-		0.090	0	0.090	0
		Subtotal	0.000	-		-		0.090		-		0.090	0.000	0.090	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*	Project (Number/Name) EQ5 / *Combating Weapons of Mass Destruction (CWMD)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		2.089		-		2.089	0.000	2.089	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*	**Project (Number/Name)** EQ5 / *Combating Weapons of Mass Destruction (CWMD)*

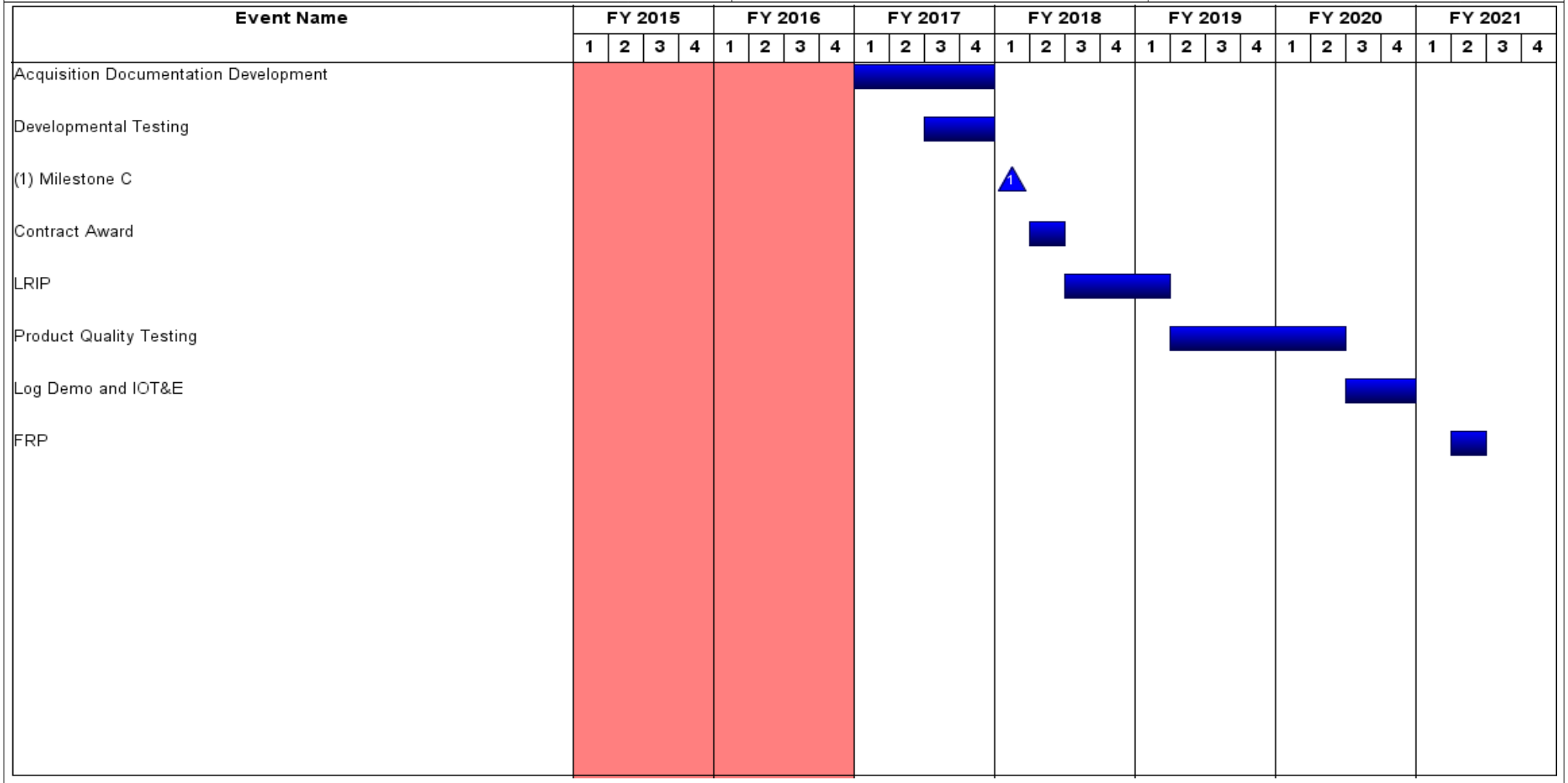

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605036A / *Combating Weapons of Mass Destruction (CWMD)*	**Project (Number/Name)** EQ5 / *Combating Weapons of Mass Destruction (CWMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Documentation Development	1	2017	4	2017
Developmental Testing	3	2017	4	2017
Milestone C	1	2018	1	2018
Contract Award	2	2018	2	2018
LRIP	3	2018	1	2019
Product Quality Testing	2	2019	2	2020
Log Demo and IOT&E	3	2020	4	2020
FRP	2	2021	2	2021

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605041A *I Defensive CYBER Tool Development*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	33.836	-	33.836	26.585	17.820	11.484	8.478	0.000	98.203
EV5: *Defensi*	-	0.000	0.000	33.836	-	33.836	26.585	17.820	11.484	8.478	0.000	98.203

Note

This program element is a continuation of efforts funded in FY 2016 in PE 0303140, project 491.

A. Mission Description and Budget Item Justification

The Defensive Cyber Tool Development group of programs designs, builds, and tests the advanced Cyber tools and infrastructure that enables active defense of the network from Tactical Command Posts up through Post Camps and Station Home Station Mission Command. This capability will enable integration of the Cyber Mission Force with the Regional and Local Cyber Network Defense elements. These tools will provide cutting edge hardware and software, integrated with existing infrastructure and tools to facilitate Active Defensive Cyber operations. Cyber Tool Development will include Big Data Analytics solutions to enable the ability to correlate and analyze the massive amount of data coming across the network and provide timely situational awareness. It will also include development, integration, and testing of Defensive Cyber Tool and Infrastructure that will facilitate pushing Cyber sensor data to the Big Data analytics as well as support remote access to prevent or react to a Cyber incident. The Cyber Tool Development includes test and assessment of emerging Commercial Cyber tools for inclusion in the Defensive Cyber Operations Infrastructure. This tool development will include enhancements and testing of existing systems by enabling such capabilities as Public Key Infrastructure and enhancing mission assurance profiles of existing software that will heighten the Defensive Cyber posture.

This Program Element will support the Defensive Cyber Operations Infrastructure (DCO-I) program starting in FY17 to integrate and deliver key hardware and software that enables the Cyber Mission Forces to protect, search and discover, maneuver and engage, and mitigate and respond to enemy cyberspace operations. DCO-I will allow near real-time employment of defensive measures that will allow friendly cyber forces to maintain advantage. DCO-I will consist of a combination of hardware computing infrastructure along with advanced software fielded to units from Army Service Component Commands down to Brigade Combat Team level. DCO-I directly supports US Cyber Command Integrated Priority List #2 Produce Advanced Cyberspace Infrastructure and #5 defensive forces to execute passive and active defense operations at net-speed.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605041A / *Defensive CYBER Tool Development*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	33.836	-	33.836
Total Adjustments	0.000	0.000	33.836	-	33.836
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	33.836	-	33.836

Change Summary Explanation

Funds previously executed in PE 0303140, Project 491.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605041A / *Defensive CYBER Tool Development*	Project (Number/Name) EV5 / *Defensi*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EV5: *Defensi*	-	0.000	0.000	33.836	-	33.836	26.585	17.820	11.484	8.478	0.000	98.203
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Defensive Cyberspace Operations (DCO) - Big Data Pilot (PEO EIS, Product Director Enterprise Services-CYBER)
Defensive Cyberspace Operations - Infrastructure (DCO-I)Tactical - PEO C3T
Defensive Cyberspace Operations –Infrastructure (DCO-I) Enterprise - PEO C3T
Infrastructure Communications and Capabilities - Defense Cyber Operations (PEO EIS, Project Manager Installation Information Infrastructure - Communications and Capabilities (I3C2-DCO)
Cyber Protection Team Support (DCO Platforms) (PEO EIS, PM I3C2-DCO)

A. Mission Description and Budget Item Justification

The Defensive Cyber Tool Development group of programs designs, builds, and tests the advanced Cyber tools and infrastructure than enables active defense of the network from Tactical Command Posts through Post Camps and Station and Home Station Mission Command. This capability will enable integration of the Cyber Mission Force with the Regional and Local Cyber Network Defense elements. These tools will provide cutting edge hardware and software, integrated with existing infrastructure and tools to facilitate Active Defensive Cyber operations. Cyber Tool Development will include Big Data Analytics solutions to enable the ability to correlate and analyze the massive amount of data coming across the network and provide timely situational awareness. It will also include development, integration, and testing of Defensive Cyber Tools and Infrastructure that will facilitate pushing Cyber sensor data to the Big Data analytics as well as support remote access to prevent or react to a Cyber incident. The Cyber Tool Development includes test and assessment of emerging Commercial Cyber tools for inclusion in the Defensive Cyber Operations Infrastructure. This tool development will include enhancements and testing of existing systems by enabling such capabilities as Public Key Infrastructure and enhancing mission assurance profiles of existing software that will heighten the Defensive Cyber posture.

This Program Element will support the DCO-I program starting in FY17 to integrate and deliver key hardware and software that enables the Cyber Mission Forces to protect, search and discover, maneuver and engage, and mitigate and respond to enemy cyberspace operations. DCO-I will allow near real-time employment of defensive measures that will allow friendly cyber forces to maintain advantage. DCO-I will consist of a combination of hardware computing infrastructure along with advanced software fielded to units from Army Service Component Commands down to Brigade Combat Team level. DCO-I directly supports US Cyber Command Integrated Priority List #2 Produce Advanced Cyberspace Infrastructure and #5 defensive forces to execute passive and active defense operations at net-speed.

The DCO program provides initial capabilities to Cyber Protection Teams. Team enable passive and active cyberspace defensive operations to preserve friendly cyberspace capabilities, and protect data, networks, net-centric capabilities, and other designated systems. DCO consists of four critical capabilities:
1. DCO-I Enterprise: the hardware and software baseline for remote cyber maneuver based on the Defense Advanced Research Projects Agency (DARPA) Plan X
2. Cyber Protection Team (CPT) Support (now called DCO Platforms): tools reside inside DCO-I
3. Web Vulnerability: Scanning software baseline to secure key cyber terrain and protect DoD websites

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

4. Big Data Analytics: analytics that leverage Defense Information Security Agency (DISA) Acropolis analytics (PEO C3T)

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: The Defensive Cyberspace Operations (DCO) - Tactical Infrastructure (PEO C3T) ***Description:*** DCO-I program integrates and delivers key hardware and software that enables the Cyber Mission Forces to protect, search and discover, maneuver and engage, and mitigate and respond to enemy cyberspace operations. ***FY 2017 Plans:*** FY17 initiates the Engineering Design and Development for Network Operations software in support of the Defensive Cyber Operations Infrastructure (DCO-I) Information Systems Initial Capabilities Document (IS ICD) which further integrates existing capability and extends that capability down to the Battalion Level. This funding initializes the program and funds the development effort for the first build cycle. FY17 also funds initial delivery of architecture products that help drive subsequent builds. DCO-I testing will include developmental events conducted on lab configurations and networks followed by an Operational Evaluation using Soldiers and live equipment.	-	-	17.714
Title: The Defensive Cyberspace Operations (DCO) - Big Data Pilot (PEO EIS, PD ES-CYBER) ***Description:*** FY17 initiates Big Data Pilot which provides an advanced analytics capability capable of ingesting structured, semi-structured, and unstructured data from multiple data sources (e.g., Joint Regional Security Stacks (JRSS), intrusion detection systems, intrusion prevention systems, network device log files, trouble tickets, firewalls, proxies, web and applications server log files, etc) and proves situational awareness of cyberspace battlefield. It provides the computer network defense provider with common analytic platform which informs and reduces risk associated with future material solutions and forms a blueprint for future Big Data Analytics. Big Data (analysis-of-all DoD Information Network sensor data) provides two optimized and accredited cluster deployed in support of JRSS and Defense Research and Engineering Network (DREN) with a tools suite accessible to Cyber Mission Forces via secure remote access. ***FY 2017 Plans:*** FY17 initiates Big Data Pilot cyber funding encompasses design and development that is focused on getting the core platform to threshold capability and certified. Equipment would be purchased for the first 22 instances located at 11 of the JRSS locations with installation in FY18 after type certification is completed.	-	-	6.970
Title: Defensive Cyberspace Operations –Infrastructure (DCO-I) Enterprise (PEO EIS, PM I3C2-DCO) ***Description:*** DCO-I Engineering Design, Development, and Software maintenance of standardized cloud infrastructure software to include deployment and build platforms for three primary environmental configurations (garrison, deployable and tactical). Additionally, providing advanced hypervisor, cloud deployment, security and integration and development.	-	-	5.300

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2017 Plans: FY17 provides advanced security of infrastructure software for government managed purposes. Government unique cloud environment and management for infrastructure software facilitating collaboration and enhanced security to protect the abstraction layer of the infrastructure. Also begin Cyberspace Mission Command / Battle management Platform (Plan X) efforts. The foundational mission command platform for the conduct of cyberspace operations based on the transition of advanced technologies from the DARPA Foundational Cyberwarfare Program (Plan X). The platform includes battlespace awareness (SA), mission planning, course of action development, wargamming and execution capabilities. The platform will be developed in a continuous delivery methodology utilizing DevOps-like paradigms to ensure continued integration of new technological advances. Lastly, DevOps development for a centralized collaboration environment and repository including test and continuous delivery components. Facilitating license management, compilation and hosting of new platforms, centralized deployment/integration/ hosting of products, synchronization of software tools developed by cyber forces; including tool development chain with integrated test capability and deployment by cyber mission effectiveness (existing DCO systems to be managed within - Log Collector & Q-tip).			
Title: Cyber Protection Team Support (DCO Platforms) (PEO EIS, PM I3C2-DCO)	-	-	3.852
Description: FY17 initiates the DCO-I Engineering Design, Development, and Software maintenance of standardized cloud infrastructure software to include deployment and build platforms for three primary environmental configurations (garrison, deployable and tactical). Additionally, providing advanced hypervisor, cloud deployment, security and integration and development. ***FY 2017 Plans:*** The capability that provide advanced security of infrastructure software for government managed purposes. Government unique cloud environment and management for infrastructure software facilitating collaboration and enhanced security to protect the abstraction layer of the infrastructure. Also begin Cyberspace Mission Command / Battle management Platform (Plan X) efforts. The foundational mission command platform for the conduct of cyberspace operations based on the transition of advanced technologies from the DARPA Foundational Cyberwarfare Program (Plan X). The platform includes battlespace awareness (SA), mission planning, course of action development, wargamming and execution capabilities. The platform will be developed in a continuous delivery methodology utilizing DevOps-like paradigms to ensure continued integration of new technological advances. Lastly, DevOps development for a centralized collaboration environment and repository including test and continuous delivery components. Facilitating license management, compilation and hosting of new platforms, centralized deployment/integration/ hosting of products, synchronization of software tools developed by cyber forces; including tool development chain with integrated			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
test capability and deployment by cyber mission effectiveness (existing DCO systems to be managed within - Log Collector & Q-tip).			
Accomplishments/Planned Programs Subtotals	-	-	33.836

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Defensive Cyber Tool Development line will support multiple Information System - Requirement Development Packages that result in multiple programs. The Army will conduct a Materiel Development Decisions in late FY16 based upon the Defensive Cyberspace Operations – Infrastructure (DCO-I), Big Data Analytics, and Cyber Protect Team Tools Requirements Development Packages to initiate these programs.

The DCO-I Tactical program is expected to be an Acquisition Category III program using the Department of Defense Instruction 5000.02 Model 3: Incrementally Deployed Software Intensive approach. The DCO-I capability will primarily use commercial off the shelf (or slightly modified commercial off the shelf) hardware and software integrated with components of the Warfighter Information Network – Tactical and Mission Command programs. The functionality of DCO-I will integrate with the Command Post Computing Environment to support Commanders from Brigade up to Army Component Command level. Execution of the DCO-I program will be a combination of Government Labs (COMMUNICATIONS-ELECTRONICS RESEARCH, DEVELOPMENT AND ENGINEERING CENTER) and Contractor support.

The Defensive Cyberspace Operations (DCO) program provides initial capabilities that enable passive and active cyberspace defense operations to preserve friendly cyberspace capabilities and protect data, networks, net-centric capabilities, and other designated systems. Big Data Pilot provides an advanced analytics capability capable of ingesting structured, semi-structured, and unstructured data from multiple data sources (e.g., Joint Regional Security Stacks (JRSS), intrusion detection systems, intrusion prevention systems, network device log files, trouble tickets,firewalls, proxies, web and applications server log files, etc) and proves situational awareness of cyberspace battlefield. It provides the computer network defense provider with common analytic platform which informs and reduces risk associated with future material solutions and forms a blueprint for future Big Data Analytics. Big Data (analysis-of-all DoD Information Network sensor data) provides two optimized and accredited cluster deployed in support of JRSS and Defense Research and Engineering Network (DREN) with a tools suite accessible to Cyber Mission Forces via secure remote access. The Army's DCO activities is a construct of active cyberspace defense which provides synchronized, real-time capability to discover, detect, analyze, and mitigate threats and vulnerability to DoD networks and systems.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605041A / *Defensive CYBER Tool Development*	Project (Number/Name) EV5 / *Defensi*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Defensive Cyber Operations-Infrastructure (DCO-I) Tactical (PEO C3T)	C/TBD	Aberdeen Proving Ground : MD	0.000	-		-		1.732		-		1.732	0	1.732	0
Big Data Pilot (PEO EIS, PD ES - CYBER)	TBD	PD ES : Ft Belvoir, VA	0.000	-		-		0.131		-		0.131	0	0.131	0
		Subtotal	0.000	-		-		1.863		-		1.863	0.000	1.863	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Big Data Pilot (PEO EIS, PD ES - CYBER)	C/TBD	Ft. Belvoir : VA	0.000	-		-		6.839		-		6.839	0	6.839	0
Defensive Cyberspace Operations –Infrastructure (DCO-I) Enterprise (PEO EIS, PM I3C2-DCO)	C/TBD	ACC-RI : IL	0.000	-		-		5.300		-		5.300	0	5.300	0
Defensive Cyber Operations-Infrastructure (DCO-I) Tactical (PEO C3T)	C/TBD	Aberdeen Proving Ground : MD	0.000	-		-		13.408		-		13.408	0	13.408	0
Cyber Protection Team (PEO EIS, PEO I3C2)	C/TBD	ACC-RI : IL	0.000	-		-		3.852		-		3.852	0	3.852	0
		Subtotal	0.000	-		-		29.399		-		29.399	0.000	29.399	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Defensive Cyber Operations-Infrastructure	C/TBD	Aberdeen Proving Ground : MD	0.000	-		-		2.574		-		2.574	0	2.574	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(DCO-I) Tactical (PEO C3T)															
		Subtotal	0.000	-		-		2.574		-		2.574	0.000	2.574	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		33.836		-		33.836	0.000	33.836	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

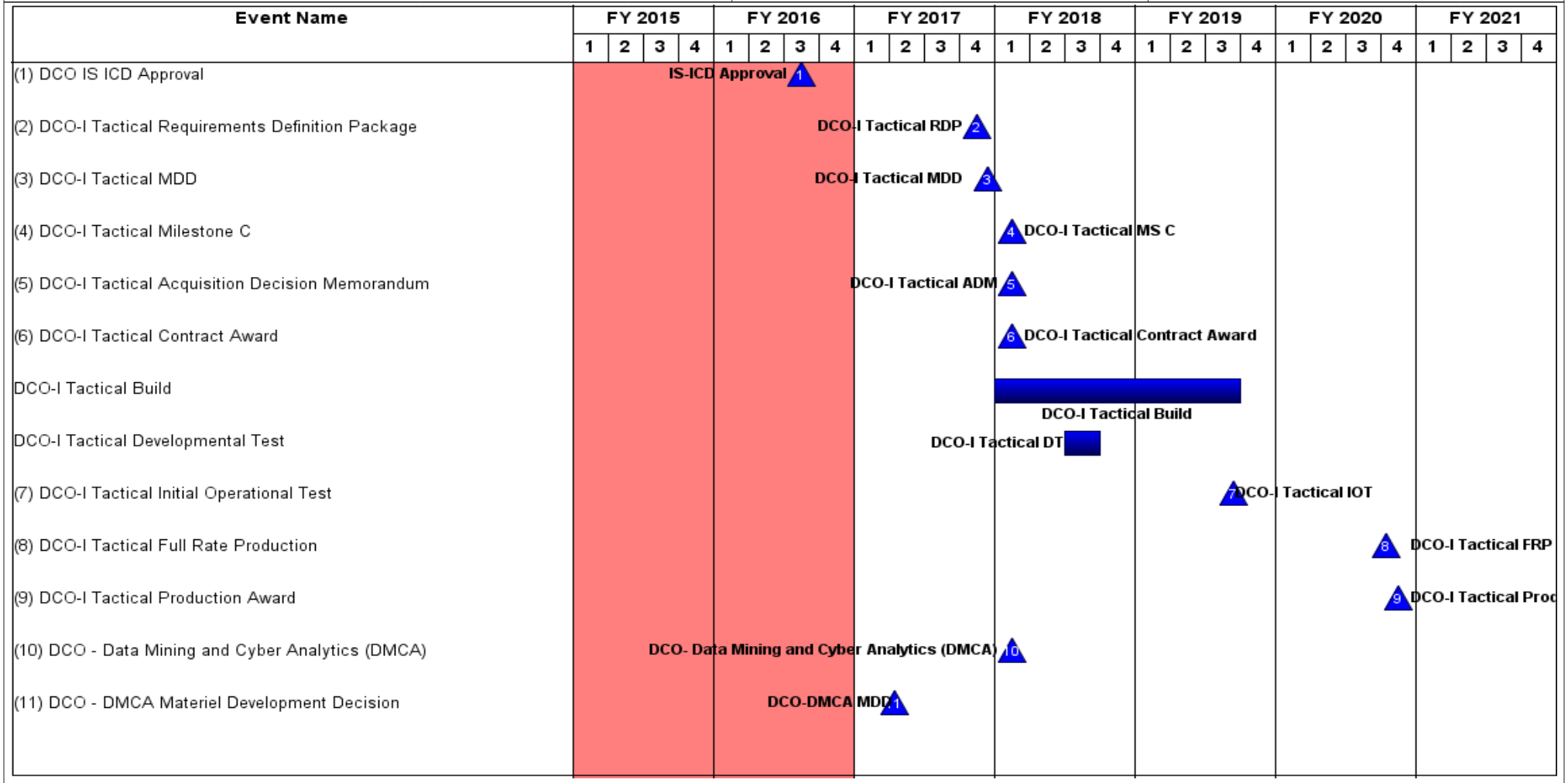

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

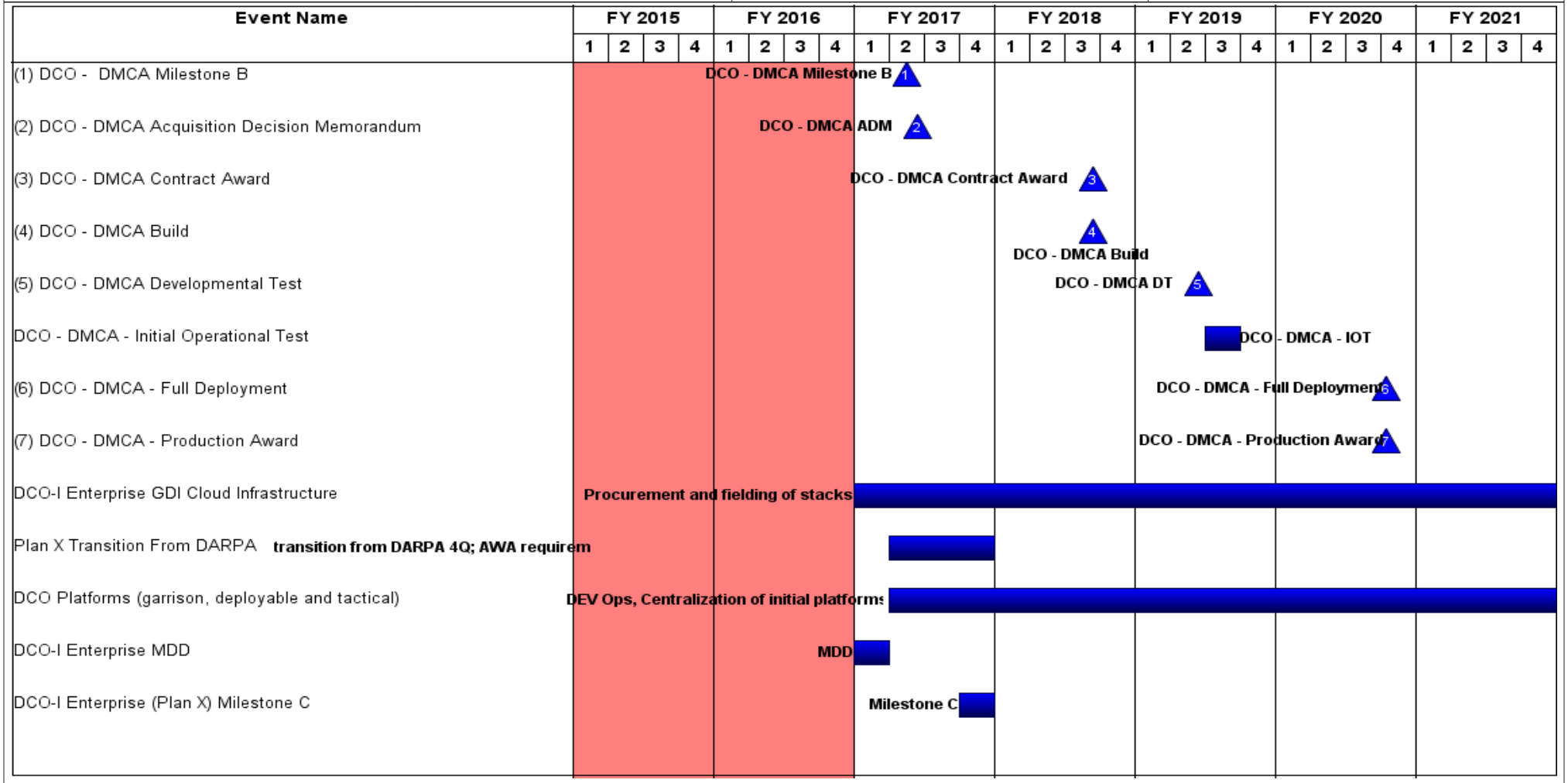

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DCO IS ICD Approval	3	2016	3	2016
DCO-I Tactical Requirements Definition Package	4	2017	4	2017
DCO-I Tactical MDD	4	2017	4	2017
DCO-I Tactical Milestone C	1	2018	1	2018
DCO-I Tactical Acquisition Decision Memorandum	1	2018	1	2018
DCO-I Tactical Contract Award	1	2018	1	2018
DCO-I Tactical Build	1	2018	3	2019
DCO-I Tactical Developmental Test	3	2018	3	2018
DCO-I Tactical Initial Operational Test	3	2019	3	2019
DCO-I Tactical Full Rate Production	4	2020	4	2020
DCO-I Tactical Production Award	4	2020	4	2020
DCO - Data Mining and Cyber Analytics (DMCA)	1	2018	1	2018
DCO - DMCA Materiel Development Decision	2	2017	2	2017
DCO - DMCA Milestone B	2	2017	2	2017
DCO - DMCA Acquisition Decision Memorandum	2	2017	2	2017
DCO - DMCA Contract Award	3	2018	3	2018
DCO - DMCA Build	3	2018	3	2019
DCO - DMCA Developmental Test	2	2019	2	2019
DCO - DMCA - Initial Operational Test	3	2019	3	2019
DCO - DMCA - Full Deployment	4	2020	4	2020
DCO - DMCA - Production Award	4	2020	4	2020
DCO-I Enterprise GDI Cloud Infrastructure	1	2017	4	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605041A / *Defensive CYBER Tool Development*	**Project (Number/Name)** EV5 / *Defensi*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Plan X Transition From DARPA	2	2017	4	2017
DCO Platforms (garrison, deployable and tactical)	2	2017	4	2021
DCO-I Enterprise MDD	1	2017	1	2017
DCO-I Enterprise (Plan X) Milestone C	4	2017	4	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	0.000	18.824	-	18.824	5.417	7.007	9.595	21.541	Continuing	Continuing
FA1: *Manpack Radio*	-	0.000	0.000	14.819	-	14.819	0.108	1.570	2.129	3.825	Continuing	Continuing
FA2: *Rifleman Radio (RR)*	-	0.000	0.000	4.005	-	4.005	5.309	5.437	7.466	17.716	Continuing	Continuing

Note

PE 0604280A was realigned to PE 0605042A in PB17. The HMS program will execute funding under two separate project codes for Manpack Radio (Project Code FA1) and Rifleman Radio (Project Code FA2) in FY17 and out.

A. Mission Description and Budget Item Justification

Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting SCA-compliant Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs.

HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.

HMS is structured as a single program of record. The program has completed the Engineering Manufacturing and Development Phase and received Milestone C approval on 17 June 2011 with Low Rate Initial Production configured radios.

HMS is executing the Acquisition Strategy approved in May 2014 to procure modified Non-Developmental Items (NDI) through full and open competition and open to all potential industry partners. Two contracts support this effort. The contract for NDI Secret and Below Riflemen Radios (RR) for used in a classified environment was awarded on 29 April 2015 to two vendors. The RR runs the Soldier Radio Waveform (SRW)-Army managed waveform. The contract for Manpack (MP) radios will be awarded in 3QFY16. These two channel radios can be used in a classified environment and will run SRW, Single Channel Ground and Airborne Radio System (SINCGARS)-Army managed waveform, Satellite Communications (SATCOM)-Army managed waveform, and Mobile-User Objective System (MUOS)-Navy managed waveform.

The Army will award Firm Fixed-Price (FFP) Indefinite Delivery Indefinite Quantity (IDIQ) Contracts through a multiple step selection process:
a. Award FFP Contracts (29 Apr 2015 for RR and 3QFY16 for MP)
b. Award first delivery orders to all qualified vendors based on technical acceptability and demonstrations from Qualification Test (3 Sep 2015 for RR and 1QFY17 for MP)
c. Award second delivery order based on Customer Test results (2QFY17 for RR and 4QFY17 for MP)

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605042A *I Tactical Network Radio Systems (Low-Tier)*

d. Award FRP delivery orders based on operational assessments and best value trade off construct (1QFY18 for RR and 4QFY18 for MP)

The FY 2017 budget will provide funding that is necessary to execute the required full and open competition contract strategy for the RR and MP products. Specifically, the funding is needed to conduct testing for the MP candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for FRP; and to fully fund the full and open competition Operational Evaluation on the MP candidate radios as laid out in the HMS Acquisition Strategy approved May 2014. The funding will also support safety, spectrum supportability, and other certifications necessary to prepare the products for fielding.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	18.824	-	18.824
Total Adjustments	0.000	0.000	18.824	-	18.824
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Realignment from PE 0604280A	-	-	18.824	-	18.824

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA1 / *Manpack Radio*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
FA1: *Manpack Radio*	-	0.000	0.000	14.819	-	14.819	0.108	1.570	2.129	3.825	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In coordination with G8 and the Army Budget Office, HMS funding PE 0604280A was realigned under PE 0605042A in PB17. The HMS program will execute funding under separate project codes for Manpack Radio (Project Code FA1) and Rifleman Radio (Project Code FA2) in FY17 and out.

A. Mission Description and Budget Item Justification

Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting SCA-compliant Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs.

HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.

HMS is structured as a single program of record. The program has completed the Engineering Manufacturing and Development Phase and received Milestone C approval on 17 June 2011 with Low Rate Initial Production configured radios.

HMS is executing the Acquisition Strategy approved in May 2014 to procure modified Non-Developmental Items (NDI) through full and open competition and open to all potential industry partners. The contract for Manpack (MP) radios will be awarded in 3QFY16. These two channel radios can be used in a classified environment and will run SRW, Single Channel Ground and Airborne Radio System (SINCGARS)-Army managed waveform, Satellite Communications (SATCOM)-Army managed waveform, and Mobile-User Objective System (MUOS)-Navy managed waveform.

The Army will award Firm Fixed-Price (FFP) Indefinite Delivery Indefinite Quantity (IDIQ) Contracts through a multiple step selection process:
a. Award FFP Contracts (3QFY16 for MP)
b. Award first delivery orders to all qualified vendors based on technical acceptability and demonstrations from Qualification Test (1QFY17 for MP)
c. Award LRIP delivery order based on Customer Test results (4QFY17 for MP)
d. Award FRP delivery orders based on operational assessments and best value trade off construct (4QFY18 for MP)

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: HMS	-	-	14.819

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting SCA-compliant Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs. HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications. ***FY 2017 Plans:*** The FY 2017 funding is needed to conduct testing for the MP candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for FRP; and to fully fund the full and open competition Operational Evaluation on the MP candidate radios as laid out in the HMS Acquisition Strategy approved May 2014. The funding will also allow for engineering and technical support.			
Accomplishments/Planned Programs Subtotals	-	-	14.819

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• RDTE: 0654280A: *DZ5*	9.454	4.546	-	-	-	-	-	-	-	0.000	14.000
• PE: 0605042A, FA-2: *Rifleman Radio*	-	-	4.005	-	4.005	5.309	5.437	2.129	3.825	Continuing	Continuing
• OPA: B90000, B90210: *Rifleman Radio*	14.200	29.509	-	-	-	-	-	-	-	0.000	43.709
• OPA: B90000, B90215: *Manpack Radio*	26.511	25.131	-	-	-	-	-	-	-	0.000	51.642
• OPA: B95004, B95006: *Handheld Radio*	-	-	43.734	-	43.734	52.573	53.511	54.951	49.937	Continuing	Continuing
• OPA: B95004, B95007: *Manpack Radio*	-	-	229.911	-	229.911	352.316	360.325	360.232	385.944	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

Remarks

HMS RDTE funding is currently housed under PE: 0604280A Joint Tactical Radio for FY16 and prior. Due to a request to provide more transparency into the program, HMS RDTE funding will move to PE: 0605042A Tactical Network Radio Systems (Low-Tier): FA1 Manpack Radio and FA2 Rifleman Radio. HMS procurement funding can be found under Standard Study Number (SSN) B90210 JTRS Cluster 5 (Handheld) and SSN B90215 JTRS (Manpack)for FY16 & prior. Procurement funding for FY17 and beyond will be found in SSN B95004: SSN B95006 Handheld and SSN B95007 Manpack.

D. Acquisition Strategy

HMS is currently executing a May 2014 approved acquisition strategy to procure modified Non-Developmental Items (NDI) through full and open competition open to all potential industry partners. A contract will be awarded to procure NDI Manpack radios for use in a classified environment. Waveforms to be ported to HMS Manpack include: SRW, Single Channel Ground and Airborne Radio System (SINCGARS)-Army managed waveform, Satellite Communications (SATCOM)-Army managed waveform, and Mobile-User Objective System (MUOS)-Navy managed waveform.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA1 / *Manpack Radio*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMS Engineering/ Technical Support	TBD	PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC, : Various	0.000	-		-		0.804		-		0.804	0	0.804	0
		Subtotal	0.000	-		-		0.804		-		0.804	0.000	0.804	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Manpack Customer Test	RO	EPG : TBD	0.000	-		-		6.005		-		6.005	0	6.005	0
Manpack Operational Test (Preparation and Test Event)	RO	OTC : TBD	0.000	-		-		8.010		-		8.010	0	8.010	0
		Subtotal	0.000	-		-		14.015		-		14.015	0.000	14.015	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		14.819		-		14.819	0.000	14.819	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

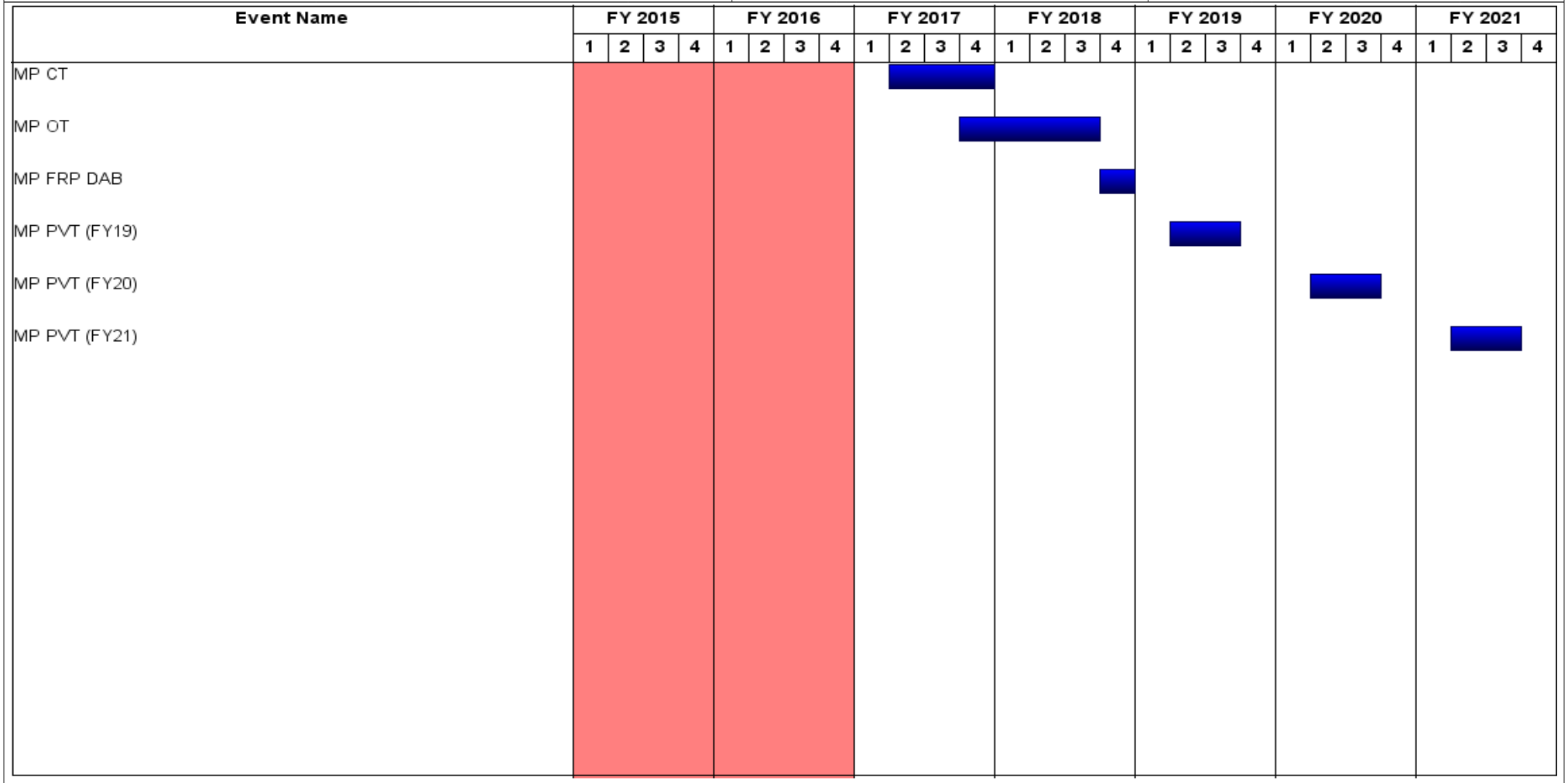

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MP CT	2	2017	4	2017
MP OT	4	2017	3	2018
MP FRP DAB	4	2018	4	2018
MP PVT (FY19)	2	2019	3	2019
MP PVT (FY20)	2	2020	3	2020
MP PVT (FY21)	2	2021	3	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA2 / *Rifleman Radio (RR)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
FA2: *Rifleman Radio (RR)*	-	0.000	0.000	4.005	-	4.005	5.309	5.437	7.466	17.716	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In coordination with G8 and the Army Budget Office, HMS funding PE 0604280A was realigned under PE 0605042A in PB17. The HMS program will execute funding under separate project codes for Manpack Radio (Project Code FA1) and Rifleman Radio (Project Code FA2) in FY17 and out.

A. Mission Description and Budget Item Justification

Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs.

HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.

HMS is structured as a single program of record. The program has completed the Engineering Manufacturing and Development Phase and received Milestone C approval on 17 June 2011 with Low Rate Initial Production configured radios.

HMS is currently executing a May 2014 approved acquisition strategy to procure modified Non-Developmental Items (NDI) through full and open competition open to all potential industry partners. Two contracts will be awarded in support of this effort. The first contract will procure NDI Secret and Below Rifleman Radios (RR) for use in a classified environment. It was awarded on 29 April 2015. The RR ports the Soldier Radio Waveform (SRW)-Army managed waveform.

The Army will award Firm Fixed-Price (FFP) Indefinite Delivery Indefinite Quantity (IDIQ) Contracts through a multiple step selection process:
a. Award FFP Contracts (29 Apr 2015 for RR)
b. Award first delivery orders to all qualified vendors based on technical acceptability and demonstrations from Qualification Test (3 Sep 2015 for RR)
c. Award LRIP delivery order based on Customer Test results (2QFY17 for RR)
d. Award FRP delivery orders based on operational assessments and best value trade off construct (1QFY18 for RR)

The FY 2017 budget will provide funding required for Performance Verification Testing (PVT) for the RR. The funding will also support program office support and other certifications necessary to prepare the products for fielding (e.g., NSA certifications).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: HMS	-	-	4.005
Description: Handheld, Manpack, and Small Form Fit (HMS) is a materiel solution meeting the requirements for a Software Communications Architecture (SCA) compliant hardware system hosting SCA-compliant Government purpose rights software waveforms (applications). HMS is an Acquisition Category (ACAT) ID Program that encompasses specific requirements to support the US Army, US Air Force, US Navy, US Marine Corps and the Special Operations Command (SOCOM) communication needs. HMS provides voice and data communications to the tactical edge/most disadvantaged Warfighter with an on the move, at the halt, and stationary Line of Sight (LOS)/ Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radios are software re-programmable, networkable multi-mode system (of systems) capable of simultaneous voice, data and video communications. The embedded Small Form Fit (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications. ***FY 2017 Plans:*** The FY 2017 budget will provide funding required for Performance Verification Testing (PVT) and any additional delta performance testing for the RR. The funding will also support program office support and other certifications necessary to prepare the products for fielding.			
Accomplishments/Planned Programs Subtotals	-	-	4.005

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE: 0605042A, FA-1: *Manpack Radio*	-	-	14.819	-	14.819	0.108	1.570	2.129	3.825	Continuing	Continuing
• RDTE: 0604280A: *DZ5*	9.454	4.546	-	-	-	-	-	-	-	0.000	14.000
• OPA: B90000, B90210: *JTRS Cluster 5 (Handheld)*	14.200	34.910	-	-	-	-	-	-	-	0.000	49.110
• OPA: B90000, B90215: *JTRS (Manpack)*	26.511	29.730	-	-	-	-	-	-	-	0.000	56.241
• OPA: B95004, B95006: *Handheld Radio*	-	-	43.903	-	43.903	52.782	53.490	54.959	50.294	Continuing	Continuing
• OPA: B95004, B95007: *Manpack Radio*	-	-	230.803	-	230.803	353.716	360.177	360.289	388.711	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

Remarks

HMS RDTE funding previously was executed under PE: 0604280A Joint Tactical Radio for FY16 and prior. Due to a request to provide more transparency into the program, HMS RDTE funding will move to PE: 0605042A Tactical Network Radio Systems (Low-Tier): FA1 Manpack Radio and FA2 Rifleman Radio. HMS procurement funding can be found under Standard Study Number (SSN) B90210 JTRS Cluster 5 (Handheld) and SSN B90215 JTRS (Manpack)for FY16 & prior. Procurement funding for FY17 and beyond will be found in SSN B95004: SSN B95006 Handheld and SSN B95007 Manpack.

D. Acquisition Strategy

HMS is currently executing a May 2014 approved acquisition strategy to procure modified Non-Developmental Items (NDI) through full and open competition open to all potential industry partners. A contracts was awarded 29 April 2015 to procure NDI Secret and Below Rifleman Radios for use in a classified environment. The Rifleman Radio ports the Soldier Radio Waveform (SRW)-Army managed waveform.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA2 / *Rifleman Radio (RR)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Office Support	TBD	PEO C3T, CECOM, PM TR Alliant : Various; APG, MD	0.000	-		-		0.465		-		0.465	0	0.465	0
		Subtotal	0.000	-		-		0.465		-		0.465	0.000	0.465	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMS Engineering/ Technical Support	TBD	PEO C3T, ARL,ESP,CECOM,CERDEC, LCMC, : Various; APG, MD	0.000	-		-		0.480		-		0.480	0	0.480	0
		Subtotal	0.000	-		-		0.480		-		0.480	0.000	0.480	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Follow on Delta Development & Testing	TBD	OTC : TBD	0.000	-		-		3.060		-		3.060	0	3.060	0
		Subtotal	0.000	-		-		3.060		-		3.060	0.000	3.060	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		4.005		-		4.005	0.000	4.005	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

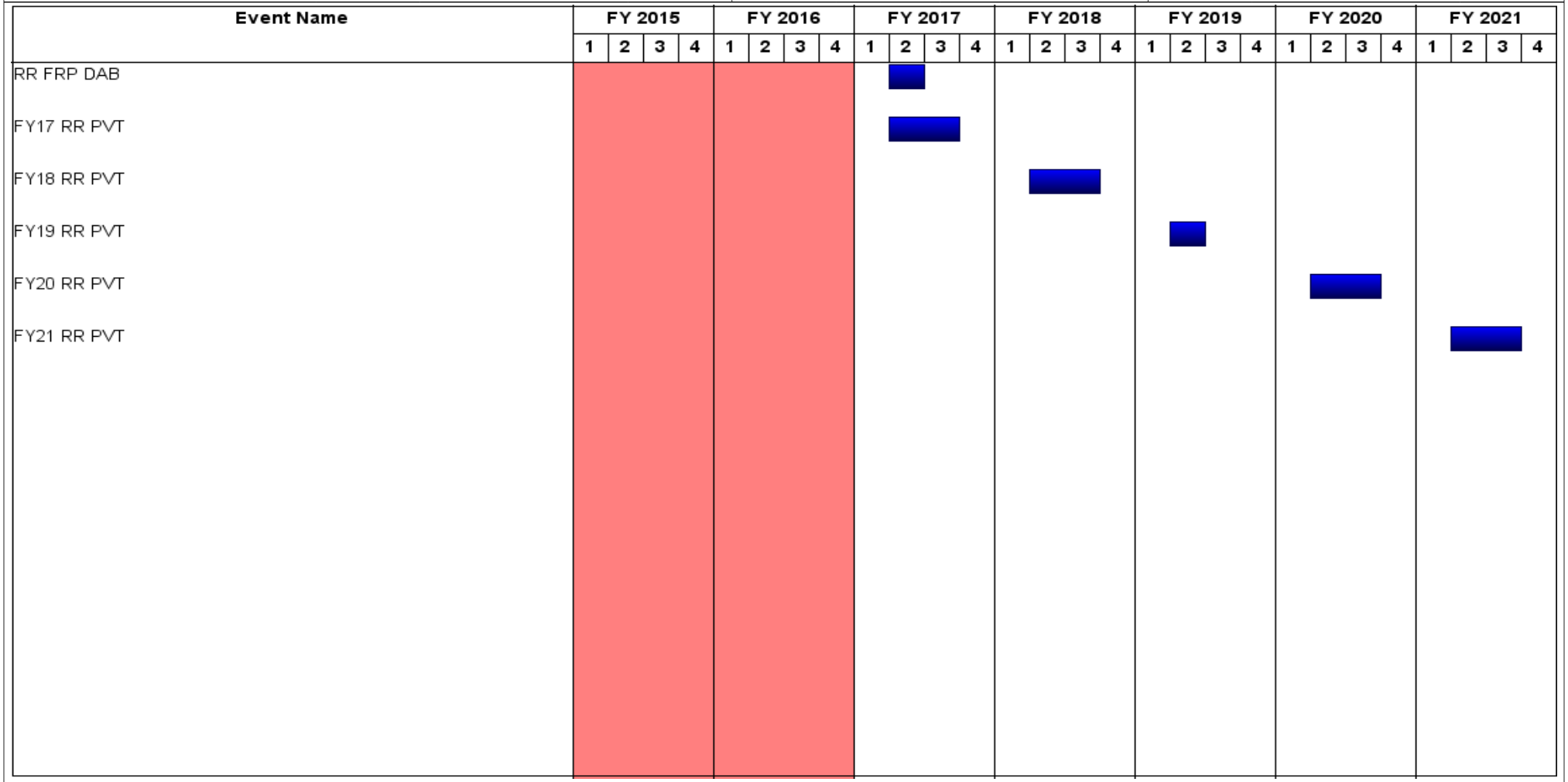

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
RR FRP DAB	2	2017	2	2017
FY17 RR PVT	2	2017	3	2017
FY18 RR PVT	2	2018	3	2018
FY19 RR PVT	2	2019	2	2019
FY20 RR PVT	2	2020	3	2020
FY21 RR PVT	2	2021	3	2021

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605047A / *Army Contract Writing System*

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	20.663	-	20.663	31.607	18.621	13.718	5.406	0.000	90.015
FA7: *Contract Writing System*	-	0.000	0.000	20.663	-	20.663	31.607	18.621	13.718	5.406	0.000	90.015

Note

This funding line is not a new start in FY 2017. Army Contract Writing System funding was realigned from PE 0605013, Project T05 to PE 0605047, Project FA7 in FY 2017.

A. Mission Description and Budget Item Justification

The Army Contract Writing System (ACWS) will be the Army's single, next-generation, enterprise-wide contract writing, management, execution, and close-out software system. ACWS will facilitate the standardization of Army Procurement business processes and streamline the integration with Army ERP systems. As a financial feeder system, ACWS will meet the compliance requirements of the Federal Financial Management Improvement Act of 1996 (FFMIA). The system will meet the full scope of Army Contracting requirements, including those in secure and non-secure locations, those supporting combat or non-combat contingencies, those within or outside the borders of the Continental United States, those supporting grants and assistance agreements, and those performing weapons systems, construction, installation, and other specialized contracting activities. This is consistent with Undersecretary of Defense, Acquisition, Technology and Logistics Memorandum; Department of Defense (DoD) Functional Contract Writing and Administration, dated 21 October 2011, which directed each of the Services to develop a new contract writing system. Accordingly, Army received an OSD Deputy Chief Management Officer (DCMO) validated problem statement and the Army Acquisition Executive approved the ACWS Materiel Development Decision (MDD) on 15 May 2014. On 27 January 2016, the Undersecretary of Defense for Acquisition, Logistics and Technology re-designated the ACWS as an ACAT IAM (MAIS) program and authorized the release of the RFP to procure a Commercial-off-the-Shelf (COTS) system. Funds are to perform all requisite activities to carry the program through the source selection process, a contract award authority to proceed decision (ATP-1), and a Risk Reduction phase while developing pre-Milestone B documentation expected of an ACAT IAM program.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	20.663	-	20.663
Total Adjustments	0.000	0.000	20.663	-	20.663
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	20.663	-	20.663

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605047A *I Army Contract Writing System*

Change Summary Explanation

ACWS program moved from PE 0605013, Project T05 to PE 0605047, Project FA7 in FY 2017.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605047A / *Army Contract Writing System*	Project (Number/Name) FA7 / *Contract Writing System*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
FA7: *Contract Writing System*	-	0.000	0.000	20.663	-	20.663	31.607	18.621	13.718	5.406	0.000	90.015
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This funding line is not a new start in FY 2017. Army Contract Writing System funding was realigned from PE 0605013, Project T05 to PE 0605047, Project FA7 in FY 2017.

A. Mission Description and Budget Item Justification

The Army Contract Writing System (ACWS) will be the Army's single, next-generation, enterprise-wide contract writing, management, execution, and close-out software system. ACWS will facilitate the standardization of Army Procurement business processes and streamline the integration with Army ERP systems. As a financial feeder system, ACWS will meet the compliance requirements of the Federal Financial Management Improvement Act of 1996 (FFMIA). The system will meet the full scope of Army Contracting requirements, including those in secure and non-secure locations, those supporting combat or non-combat contingencies, those within or outside the borders of the Continental United States, those supporting grants and assistance agreements, and those performing weapons systems, construction, installation, and other specialized contracting activities. This is consistent with Undersecretary of Defense, Acquisition, Technology and Logistics Memorandum; Department of Defense (DoD) Functional Contract Writing and Administration, dated 21 October 2011, which directed each of the Services to develop a new contract writing system. Accordingly, Army received an OSD Deputy Chief Management Officer (DCMO) validated problem statement and the Army Acquisition Executive approved the ACWS Materiel Development Decision (MDD) on 15 May 2014. On 27 January 2016, the Undersecretary of Defense for Acquisition, Logistics and Technology re-designated the ACWS as an ACAT IAM (MAIS) program and authorized the release of the RFP to procure a Commercial-off-the-Shelf (COTS) system. Funds are to perform all requisite activities to carry the program through the source selection process, a contract award authority to proceed decision (ATP-1), and a Risk Reduction phase while developing pre-Milestone B documentation expected of an ACAT IAM program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Product Development	-	-	20.663
Description: The ACWS objective is to execute a strategy for the identification, procurement and deployment of the Army's single, next-generation, enterprise-wide contract writing, management, execution, and close-out software system that will meet the Army's current critical functional requirements and expand to meet future functional needs. The new capability is required to replace SPS, PADDS and VCE systems. The end state goal is to streamline contracting end-to-end business processes; reduce operating, maintenance and support costs; decrease and where applicable mitigate the complexity of existing and future interfaces; support financial auditability; and promote and improve efficiencies when integrating with existing ERP systems. An ACWS re-baseline and a new program office estimate were completed following an AAE-directed Red Team Review while ACWS was still an ACAT III program. The updated POE resulted in the program exceeding ACAT I funding thresholds. The new			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Army Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
acquisition strategy for the ACAT IAM program was approved by the Army Acquisition Executive, and is pending approval by the Defense Acquisition Executive, who is now the Milestone Decision Authority for the program. ***FY 2017 Plans:*** FY17 funds will be used to award Task Order 001, to procure a COTS contract writing system and to select a System Integrator (SI) to conduct a collaborative Risk Reduction phase focusing on performing fit-gap analysis, blueprinting and business process reengineering activities, analysis of cyber security risks, and interfacing designs with 36 unique key system partners and stakeholders. Task Order 001 is the guaranteed minimum.			
Accomplishments/Planned Programs Subtotals	-	-	20.663

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Contract Writing System: *OPA: SSN B66001*	-	-	0.986	-	0.986	4.941	8.299	5.874	5.885	0.000	25.985

Remarks

D. Acquisition Strategy

ACWS strategy is to award the System Integrator contract and to perform all requisite Risk Reduction activities concurrent with development of all regulatory and statutory Milestone B documentation expected of an ACAT IAM program. These activities are conducted for the purpose of meeting the USD AT&L timeline goals forbuilding a contract writing system to replace legacy contract systems to include the Standard Procurement System (SPS), Procurement Automated Data and Document System (PADDS), and the Virtual Contracting Enterprise (VCE).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Army Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	C/IDIQ	Alexandria VA : Alexandria VA	0.000	-		-		20.663		-		20.663	0	20.663	0
		Subtotal	0.000	-		-		20.663		-		20.663	0.000	20.663	0.000

Remarks

Army Contract Writing System: The Under Secretary of Defense, Acquisition, Technology and Logistics directed that the Standard Procurement System (SPS) be decommissioned by FY17. In order for the Army to meet appropriate legislative mandates, the new capability will provide improved functionality in general contract writing and contract administration while seamlessly operating in the NIPR, SIPR, CONUS, OCONUS, and in low/no bandwidth environments. In addition, the replacement capability will produce data that is trackable and auditable by the Army designated finance account system(s) and will be in compliance with the Secretary of Defense's mandate for implementing internal controls to facilitate full financial audit readiness and accountability.

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		20.663		-		20.663	0.000	20.663	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Army Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

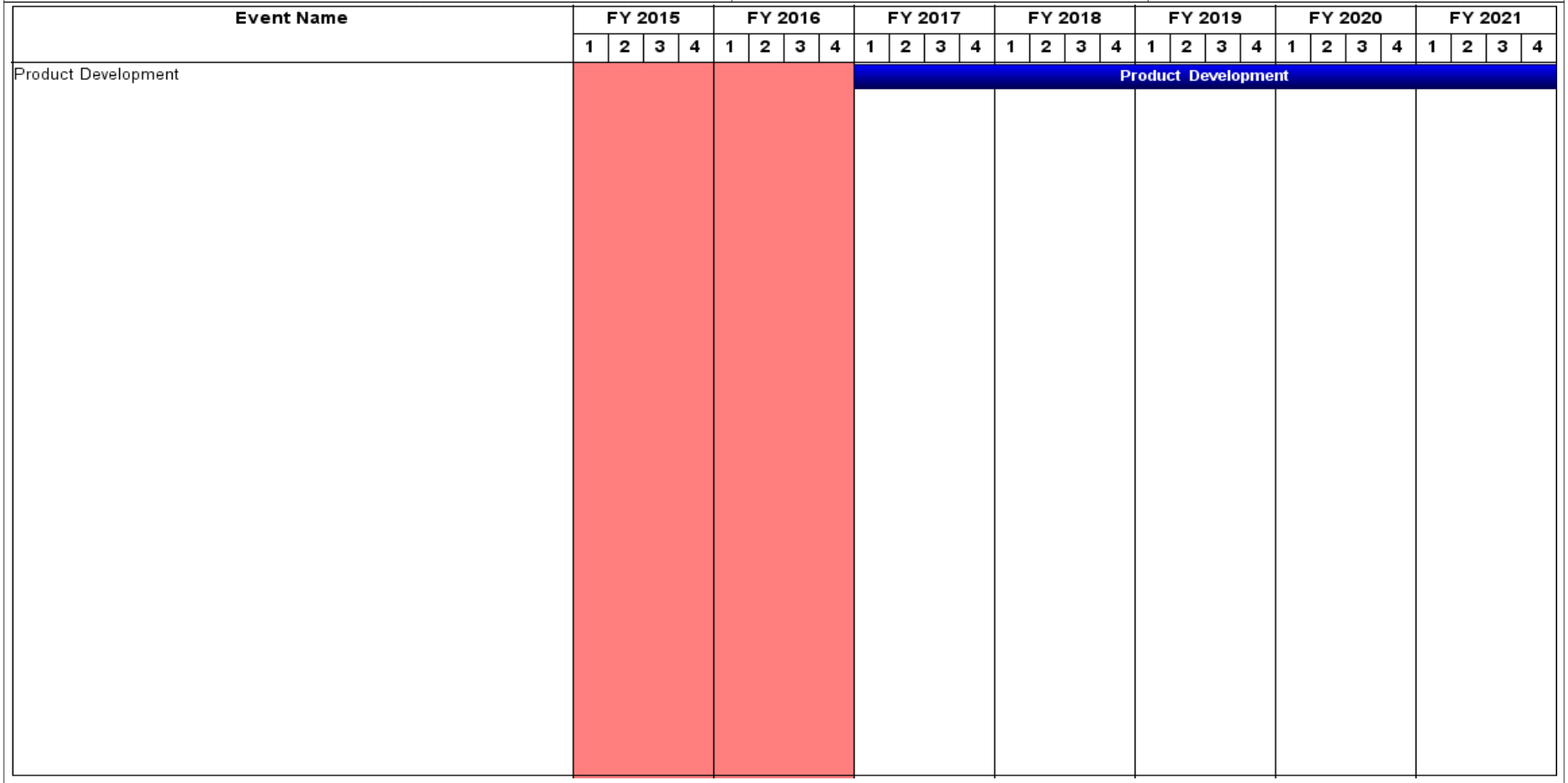

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Army Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Product Development	1	2017	4	2021

Note

Army Contract Writing System projected ATP-1 1st Qtr FY17. MS B scheduled 1st Qtr FY18. Release 1.1 begin 1st Qtr FY18.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.000	78.112	41.133	73.110	114.243	98.447	41.768	141.917	114.451	Continuing	Continuing
ER7: *Aircraft Survivability Equipment Development*	-	0.000	15.115	16.815	-	16.815	20.227	5.675	5.820	9.545	Continuing	Continuing
ER8: *Common Missile Warning System (CMWS)*	-	0.000	62.997	24.318	73.110	97.428	78.220	36.093	136.097	104.906	418.718	934.459

Note

Funds from projects EE3 (A/C Surv Equip Dev) and EE4 (Common Missile Warning System (CMWS)), Program Element (PE) 0605035A (Common Infrared Countermeasures (CIRCM)) are restructured to projects ER7 (Aircraft Survivability Equipment Development) and ER8 (Common Missile Warning System (CMWS)) respectively, PE 0605051A (Aircraft Survivability Development) for Fiscal Year (FY) 2016 and beyond for more efficient and effective program management.

A. Mission Description and Budget Item Justification

The Aircraft Survivability Development budget line includes Aircraft Survivability Development (ER7) and Common Missile Warning System (ER8). This budget line also includes funding for Joint Urgent Operational Needs Statement (JUONS) SO-0010 Phase 2a, Headquarters Department of the Army (HQDA) Directed Requirement for the Advanced Threat Warner and Common Infrared Countermeasures Quick Reaction Capability (ATW & CIRCM QRC), and the next generation missile warning system.

ER7: Aircraft Survivability Development.
The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve Radio Frequency (RF) ASE for Army aviation. The APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes RF emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1 serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V) RWR implemented to ensure that the currently fielded system remains viable until an affordable improved RF ASE capability can be pursued in Phases 2 and 3.

Phase 2, RWR Modernization, adopts the ongoing United States Navy Class I RWR Engineering Change Proposal (ECP), commonly referred to as the APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Under Phase 2, the Army will develop enhancements to the APR-39D(V)2 as hardware upgrades needed to keep the APR-39D(V)2 technically relevant and address emerging Low Probability Intercept (LPI) and frequency agile threats.

Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft; Materiel Development Decision (MDD) for this ECM jamming capability phase is not expected until later in the Future Years Defense Program (FYDP).

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605051A *I Aircraft Survivability Development*

ER8: Common Missile Warning System (CMWS).
The US Army operational requirements concept for Aviation Infrared (IR) countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). SIIRCM is an integrated warning and countermeasure system to enhance aircraft survivability against IR-guided threat missile systems. The CMWS is a core element of the SIIRCM concept. CMWS is an integrated ultraviolet (UV) missile warning system, with an Improved Countermeasure Dispenser (ICMD) serving as a subsystem to a host aircraft.

The CMWS program is a UV missile warning system that cues both flare and laser-based countermeasures to defeat incoming IR-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS Electronic Control Unit (ECU) receives UV missile detection data from Electro-Optic Missile Sensors (EOMS) and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently Advanced Threat Infrared Countermeasures (ATIRCM)-equipped CH-47 platform only). In addition, the CMWS ECU receives from the EOMS unguided munitions detection data which it also passes to the aircrew through aural and visual alerts. The aircrew then applies the appropriate Tactics, Techniques and Procedures (TTPs) to break contact or engage the enemy with own-ship ordnance. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding material release conditions to achieve a Full Material Release (FMR) for CMWS and ensure protection against emerging IR-guided missile threats.

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

JUONS SO-0010 will integrate the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system on a select number of Army and SOCOM aircraft in the threat area of responsibility. The purpose of this JUONS is to detect and defeat proliferate Surface-to-Air Missiles (SAM) threats. HQDA has provided a follow up Directed Requirement to this JUONS to reduce Space, Weight and Power (SWaP) and accelerate delivery of Common Infrared Countermeasures (CIRCMs).

FY 2017 Overseas Contingency Operations (OCO) Research, Development, Test, and Evaluation (RDTE) dollars in the amount of $11.510 million are required to complete final development and testing of A-kits and integration of the Phase 2a solution in support of JUONS SO-0010 for the Operation Inherent Resolve (OIR) theater of operations.

FY 2017 OCO RDTE dollars in the amount of $61.600 million are required for integration efforts to support the ATW & CIRCM QRC solution in support of JUONS SO-0010 for the OIR theater of operations. The intent of the ATW & CIRCM QRC program is to reduce the SWaP that require operational tradeoffs that are associated with the Phase 2a solution.

Joint Staff, J-8 Deputy Director for Requirements (DDR) memorandum, April 24, 2015
SOCOM JUONs SO-0010, Joint Rapid Acquisition Cell (JRAC) memorandum, May 29, 2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605051A *I Aircraft Survivability Development*

Directed Requirement for the Advanced Threat Warner and Common Infrared Countermeasure Quick Reaction Capability (ATW & CIRCM QRC) to Support Joint Urgent Operational Need (JUON) SO-0010, CIRCM Critical Intelligence Parameters Breach, 18 December 2015

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	18.112	31.015	-	31.015
Current President's Budget	0.000	78.112	41.133	73.110	114.243
Total Adjustments	0.000	60.000	10.118	73.110	83.228
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	60.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	10.118	73.110	83.228

Change Summary Explanation

Funds were added due to emerging Man Portable Air Defense System (MANPADS) threat and Senior Leader and congressional interest in closing the gap between JUONS efforts and next Program of Record (PoR).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER7 / *Aircraft Survivability Equipment Development*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
ER7: *Aircraft Survivability Equipment Development*	-	0.000	15.115	16.815	-	16.815	20.227	5.675	5.820	9.545	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funds from project EE3 (A/C Surv Equip Dev), Program Element (PE) 0605035A (Common Infrared Countermeasures (CIRCM)) are restructured to project ER7 (Aircraft Survivability Equipment Development), PE 0605051A (Aircraft Survivability Development) for Fiscal Year (FY) 2016 and beyond for more efficient and effective program management.

A. Mission Description and Budget Item Justification

The objective of the Aircraft Survivability Equipment (ASE) Development project is to improve Radio Frequency (RF) ASE for Army aviation. The APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes RF emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1 serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) of the AN/APR-39A(V) RWR implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3.

Phase 2, RWR Modernization, adopts the ongoing United States Navy Class I RWR Engineering Change Proposal (ECP), commonly referred to as the APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Under Phase 2, the Army will develop enhancements to the APR-39D(V)2 as hardware upgrades needed to keep the APR-39D(V)2 technically relevant and address emerging Low Probability Intercept (LPI) and frequency agile threats.

Phase 3 adds active Electronic Countermeasures (ECM) jamming capability for selected aircraft; Materiel Development Decision (MDD) for this ECM jamming capability phase is not expected until later in the Future Years Defense Program (FYDP).

Justification: Fiscal Year (FY) 2017 Base RDT&E funding of $16.815 million supports RWR software development, qualification testing, and Software Integration Lab (SIL) updates.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Phase 2 Radio Frequency Countermeasure (CM)	-	15.115	16.815	-	16.815
Description: Phase 2 Product Development (Digital RWR).					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
FY 2016 Plans: Will fund RWR software development and emerging threats. ***FY 2017 Base Plans:*** Will fund Product Development - RWR software development and SIL updates, Support Costs - Contractor Support and Matrix Support; Test and Evaluation - Multi-Service Developmental Testing/Operational Testing (DT/OT) and Government System Test and Evaluation; and Management Services - Threat Management and Project Management.					
Accomplishments/Planned Programs Subtotals	-	15.115	16.815	-	16.815

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• AZ3511: *Radio Frequency CM (AZ3511)*	56.163	28.730	50.425	-	50.425	50.067	40.833	74.147	57.498	Continuing	Continuing

Remarks

D. Acquisition Strategy

Army RF ASE is managed by Project Manager ASE (PM ASE) for development, testing, procurement, integration and installation on Army rotary wing and small fixed wing aviation platforms. PM ASE proposed a three-phased path forward commensurate with user priorities and affordability considerations. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1 addresses obsolescence/Diminishing Manufacturing Sources (DMS) issues associated with the currently fielded AN/APR-39A(V) RWR via sole source ECP awarded to the APR-39A manufacturer.

Phase 2 adopts the on-going United States Navy (USN) RWR Class I Correction of Deficiencies ECP commonly referred to as the APR-39D(V)2 system, limiting service-unique design, test, and integration expenses. Full Army participation throughout the remaining development, testing, procurement, fielding, and sustainment of the APR-39D(V)2 Digital RWR will address the significant Army RF capability gap while avoiding additional costs associated with a single-Service solution. This multi-Service approach also fields an effective and suitable material solution sooner to support the re-balance of the National Defense Strategy to the RF threat-heavy Asia-Pacific Region.

Phase 3 will develop and integrate active Electronic Countermeasures jamming capability for select aircraft.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER7 / *Aircraft Survivability Equipment Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Threat Management	Various	Various : -	8.833	-		0.235		0.282	Apr 2017	-		0.282	Continuing	Continuing	Continuing
Project Management	Various	Various : -	0.429	-		0.253		0.253	Jan 2017	-		0.253	Continuing	Continuing	Continuing
		Subtotal	9.262	-		0.488		0.535		-		0.535	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Radar Warning Receiver (RWR)	Various	Lab Demo / Study : Various	10.634	-		-		-		-		-	Continuing	Continuing	Continuing
S/W Development	Various	OGA : Aberdeen Proving Grounds, MD	1.498	-		3.615		5.705	Jan 2017	-		5.705	Continuing	Continuing	Continuing
SIL Updates	MIPR	I2WD : Aberdeen Proving Grounds, MD	1.726	-		-		0.814	Jan 2017	-		0.814	Continuing	Continuing	Continuing
Depot Standup	MIPR	Tobyhanna : Tobyhanna, PA	1.052	-		-		-		-		-	0	1.052	0
Platform Integration	Various	Multiple : -	1.844	-		2.050		-		-		-	Continuing	Continuing	Continuing
Emerging Threats	MIPR	OGA : Aberdeen Proving Grounds, MD	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	16.754	-		5.665		6.519		-		6.519	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	Various	Various : -	2.803	-		0.911		1.206	Jan 2017	-		1.206	Continuing	Continuing	Continuing
Matrix Support	Various	Various : -	6.430	-		-		0.117	Jan 2017	-		0.117	Continuing	Continuing	Continuing
		Subtotal	9.233	-		0.911		1.323		-		1.323	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER7 / *Aircraft Survivability Equipment Development*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-Service DT/OT	Various	Various : -	1.582	-		1.051		0.255	Nov 2016	-		0.255	Continuing	Continuing	Continuing
Government System Test and Evaluation	Various	Various : -	5.916	-		7.000		8.183	Nov 2016	-		8.183	Continuing	Continuing	Continuing
		Subtotal	7.498	-		8.051		8.438		-		8.438	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	42.747	-		15.115		16.815		-		16.815	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

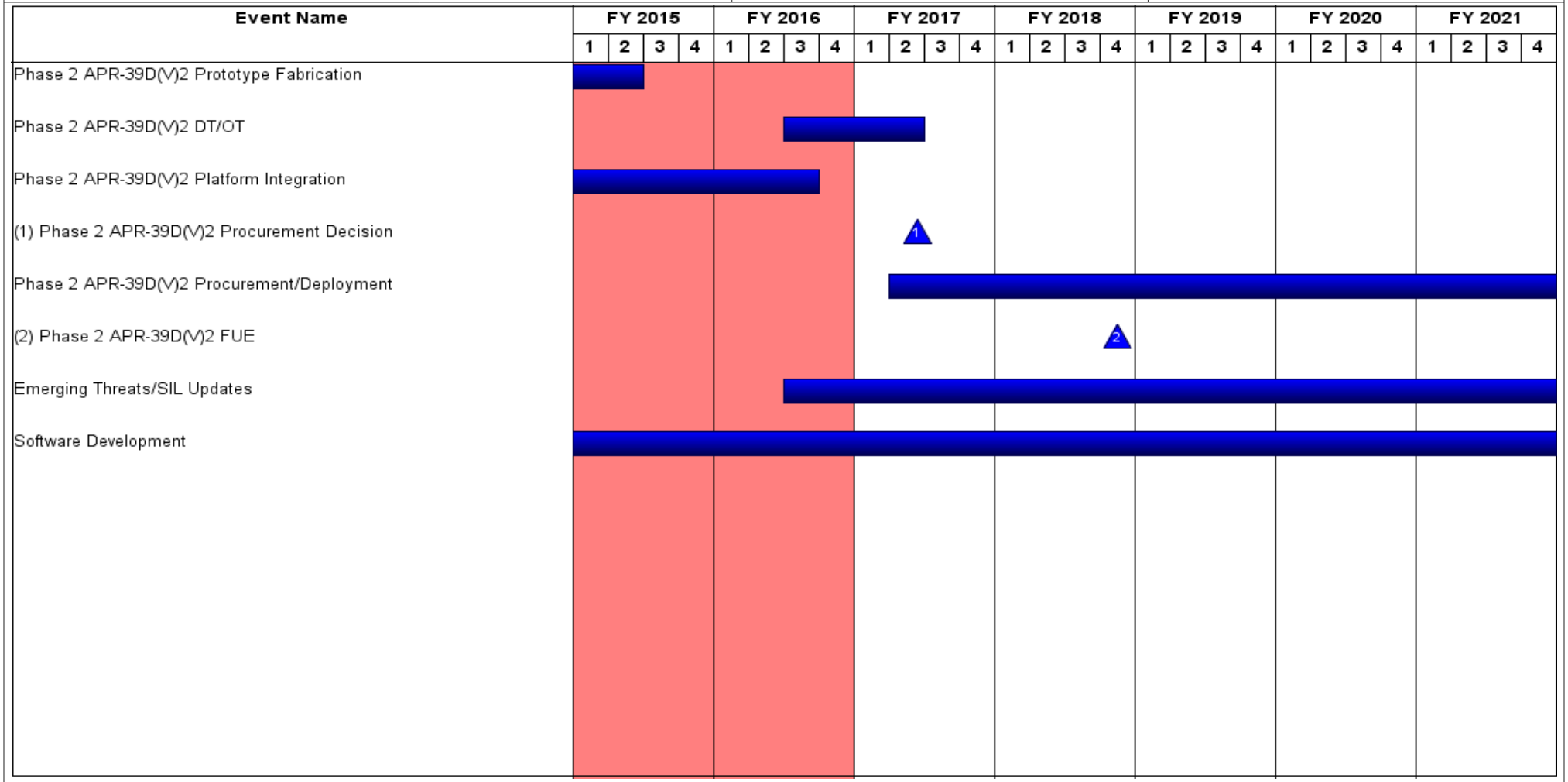

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Phase 2 APR-39D(V)2 Prototype Fabrication	4	2013	2	2015
Phase 2 APR-39D(V)2 DT/OT	3	2016	2	2017
Phase 2 APR-39D(V)2 Platform Integration	1	2014	3	2016
Phase 2 APR-39D(V)2 Procurement Decision	2	2017	2	2017
Phase 2 APR-39D(V)2 Procurement/Deployment	2	2017	4	2021
Phase 2 APR-39D(V)2 FUE	4	2018	4	2018
Emerging Threats/SIL Updates	3	2016	4	2021
Software Development	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER8 / *Common Missile Warning System (CMWS)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
ER8: *Common Missile Warning System (CMWS)*	-	0.000	62.997	24.318	73.110	97.428	78.220	36.093	136.097	104.906	418.718	934.459
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funds from project EE4 (Common Missile Warning System (CMWS)), Program Element (PE) 0605035A (Common Infrared Countermeasures (CIRCM)) are restructured to project ER8 (Common Missile Warning System (CMWS)), PE 0605051A (Aircraft Survivability Development) for Fiscal Year (FY) 2016 and beyond for more efficient and effective program management.

A. Mission Description and Budget Item Justification

The US Army operational requirements concept for Aviation Infrared (IR) countermeasure systems is known as the Suite of Integrated Infrared Countermeasures (SIIRCM). SIIRCM is an integrated warning and countermeasure system to enhance aircraft survivability against IR-guided threat missile systems. The CMWS is a core element of the SIIRCM concept. CMWS is an integrated ultraviolet (UV) missile warning system, with an Improved Countermeasure Dispenser (ICMD) serving as a subsystem to a host aircraft.

The CMWS program is a UV missile warning system that cues both flare and laser-based countermeasures to defeat incoming IR-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS Electronic Control Unit (ECU) receives UV missile detection data from Electro-Optic Missile Sensors (EOMS) and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently Advanced Threat Infrared Countermeasures (ATIRCM)-equipped CH-47 platform only). In addition, the CMWS ECU receives from the EOMS unguided munitions detection data which it also passes to the aircrew through aural and visual alerts. The aircrew then applies the appropriate Tactics, Techniques and Procedures (TTPs) to break contact or engage the enemy with own-ship ordnance. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding material release conditions to achieve a Full Material Release (FMR) for CMWS and ensure protection against emerging IR-guided missile threats.

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

Joint Urgent Operational Needs Statement (JUONS) SO-0010 will integrate the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system on a select number of Army and Special Operations Command (SOCOM) aircraft in the threat area of responsibility. The purpose of this JUONS is to detect and defeat proliferate Surface-to-Air Missiles (SAM) threats. Headquarters Department of the Army (HQDA) has provided a follow up Directed Requirement to this JUONS to reduce Space, Weight and Power (SWaP) and accelerate delivery of Common Infrared Countermeasures (CIRCMs).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

Justification: FY 2017 Base Research, Development, Test, and Evaluation (RDTE) dollars in the amount of $24.318 million includes $4.318 million to support development engineering of the Threat Analysis Database (TAD), integration with other Aircraft Survivability Equipment systems, and future sensor and algorithm analysis.

FY 2017 Base RDTE dollars in the amount of $20.000 million is for the development, integration, and qualification of an advanced missile warning system and program management.

FY 2017 Overseas Contingency Operations (OCO) RDTE dollars in the amount of $11.510 million are required to complete final development and testing of A-kits and integration of the Phase 2a solution in support of JUONS SO-0010 for the Operation Inherent Resolve (OIR) theater of operations.

FY 2017 OCO RDTE dollars in the amount of $61.600 million are required for integration efforts to support the Advanced Threat Warner and Common Infrared Countermeasure Quick Reaction Capability (ATW & CIRCM QRC) solution in support of JUONS SO-0010 for the OIR theater of operations. The intent of the ATW & CIRCM QRC program is to reduce the SWaP that require operational tradeoffs that are associated with the Phase 2a solution.

Joint Staff, J-8 Deputy Director for Requirements (DDR) memorandum, April 24, 2015
SOCOM JUONS SO-0010, Joint Rapid Acquisition Cell (JRAC) memorandum, May 29, 2015
Directed Requirement for the Advanced Threat Warner and Common Infrared Countermeasure Quick Reaction Capability (ATW & CIRCM QRC) to Support Joint Urgent Operational Need (JUON) SO-0010, CIRCM Critical Intelligence Parameters Breach, 18 December 2015

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: CMWS Product Development and Management Services	-	2.997	24.318	-	24.318
Description: RDTE funding supports continuing development engineering of the TAD, salaries, and integration with other ASE Systems. ***FY 2016 Plans:*** FY 2016 Base RDTE dollars in the amount of $2.997 million will fund Product Development – TAD; and Management Services – CMWS Systems Engineering Program Management. ***FY 2017 Base Plans:*** FY 2017 Base RDTE dollars in the amount of $4.318 million will fund Product Development - TAD and Future Sensor and Algorithm Analysis; and Management Services - CMWS Systems Engineering Program Management. FY 2017 Base RDTE dollars in the amount of $20.000 million will fund Product Development -					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Advanced Missile Warning System Development Engineering; and Management Services – CMWS Systems Engineering Program Management.					
Title: JUONS SO-0010 Phase 2a Congressional Add ***Description:*** JUONS Phase 2a will integrate the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system on a select number of aircraft in the threat area of responsibility. ***FY 2016 Plans:*** FY 2016 Base RDTE dollars in the amount of $43.300 million will fund Product Development – JUONS SO-0010 Phase 2a Prime Contractor – Integration Engineering and JUONS SO-0010 Phase 2a Aircraft Integration; and Management Services – JUONS SO-0010 Phase 2a Systems Engineering Program Management.	-	43.300	-	-	-
Title: JUONS SO-0010 Phase 2a OCO ***Description:*** JUONS Phase 2a will integrate the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system on a select number of aircraft in the threat area of responsibility. ***FY 2017 Base Plans:*** This project only has OCO dollars for FY17 ***FY 2017 OCO Plans:*** Complete final development and testing of A-kits and integration of the Phase 2a solution in support of JUONS SO-0010. Efforts include: Prime Contractor Integration and Engineering; Test and Evaluation of the Phase 2a solution; and government Systems Engineering and Program Management.	-	-	0.000	11.510	11.510
Title: ATW & CIRCM QRC Congressional Add ***Description:*** The intent of the ATW & CIRCM QRC program is to reduce the SWaP that require operational tradeoffs that are associated with the JUONS SO-0010 Phase 2a solution. ***FY 2016 Plans:*** Begin ATW & CIRCM QRC development and qualification of the new Army ATW processor and the ATW transfer alignment function. Funding will also begin software integration with the current ATW processor. Efforts will also begin on A-Kit development/Integration. Efforts will also include Army systems engineering and program management efforts.	-	16.700	-	-	-
Title: ATW & CIRCM QRC OCO	-	-	0.000	61.600	61.600

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Description: The intent of the ATW & CIRCM QRC program is to reduce the SWaP that require operational tradeoffs that are associated with the JUONS SO-0010 Phase 2a solution. ***FY 2017 Base Plans:*** This project only has OCO dollars for FY17 ***FY 2017 OCO Plans:*** Continue development and qualification of the new Army ATW processor and the ATW transfer alignment function. Complete software integration with the current ATW processor and begin the software integration with the new Army ATW processor. Continue QRC A-Kit development/Integration efforts for UH-60M, UH-60L, HH-60M, CH-47F, AH-64E, MH-47G and MH-60M. Funding will also support the modification of the JUONS SO-0010 Phase 2a A-Kit to accommodate the new Army ATW processor and CIRCM on all aircraft.					
Accomplishments/Planned Programs Subtotals	-	62.997	24.318	73.110	97.428

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• APA Funding:: *SSN AZ3517; BA4; CMWS*	201.912	104.348	41.626	56.115	97.741	37.225	32.719	18.775	10.917	69.608	573.245

Remarks

D. Acquisition Strategy

The acquisition strategy includes buying CMWS B-Kits to support the Army Force Generation (ARFORGEN) model and installation of A-Kits on all modernized aircraft. The previous CMWS production contract was a firm fixed-priced (FFP), Indefinite Delivery, Indefinite Quantity (IDIQ) contract. A FFP bridge contract was awarded March 2013 for CMWS hardware. The follow-on CMWS production FFP/Cost Plus Fixed Fee (CPFF) IDIQ contract is a 3 year firm fixed price contract to procure the remaining Generation 3 ECUs and A-Kits and was awarded SEP 2013. The Gen 3 ECU, which provides increased processing capacity and enables unguided munitions detection, became a part of the system in FY 2010; First Unit Equipped (FUE) for the Gen 3 ECU was achieved in Operation Enduring Freedom (OEF) on 18 September 2013. All aircraft deployed to OEF have received the new processor with hostile fire detection capability. Gen 3 ECU's will gradually replace all Gen 2 ECU's across the Aviation fleet between now and 2017.

The advanced missile warning system acquisition strategy includes contracting with the Original Equipment Manufacturer (OEM) via Basic Ordering Agreement (BOA).

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

JUONS SO-0010 acquisition strategy includes aircraft prime contractor engineering support contracted via BOA and Military Interdepartmental Purchase Requisition (MIPR) to a Government test organization. Aircraft integration for JUONS will be handled through government operated organizations and industry partners.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER8 / *Common Missile Warning System (CMWS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	7.800	-		0.378	Mar 2016	2.387	Oct 2016	-		2.387	Continuing	Continuing	Continuing
JUONS SO-0010 Phase 2a Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	0.000	-		3.000	Mar 2016	0.000		1.310	Oct 2016	1.310	0	4.310	0
ATW & CIRCM QRC Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	0.000	-		1.600	Mar 2016	0.000		5.544	Oct 2016	5.544	Continuing	Continuing	Continuing
		Subtotal	7.800	-		4.978		2.387		6.854		9.241	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS tier 2/3 Upgrades	Various	Various : -	2.000	-		-		-		-		-	Continuing	Continuing	Continuing
CMWS Threat Analysis Database Design	Various	BAE : Various	0.455	-		-		-		-		-	Continuing	Continuing	Continuing
Threat Analysis Database (TAD)	Various	BAE : Various	0.874	-		2.619	May 2016	2.131	May 2017	-		2.131	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	Various	Various : -	11.466	-		-		-		-		-	0	11.466	0
CMWS Data Modeling	TBD	Various : Various	0.688	-		-		-		-		-	Continuing	Continuing	Continuing
Future Sensor and Algorithm Analysis	Various	Various : TBD	0.000	-		-		1.800	Feb 2017	-		1.800	Continuing	Continuing	Continuing
Prime Contractor--Integration Engineering	TBD	TBD,TBD : TBD	7.787	-		-		-		-		-	Continuing	Continuing	Continuing
Advance Missile Warning Systems Development Engineering	TBD	TBD : TBD	0.000	-		-		18.000	Jan 2017	-		18.000	0	18.000	0
Aircraft Integration	TBD	Various : Various	19.974	-		-		-		-		-	Continuing	Continuing	Continuing
Software	TBD	Various : Various	3.000	-		-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER8 / *Common Missile Warning System (CMWS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JUONS SO-0010 Phase 2a Prime Contractor -- Integration Engineering	Various	Various : Various	0.000	-		12.500	Mar 2016	0.000		5.200	Jan 2017	5.200	0.000	17.700	0
JUONS SO-0010 Phase 2a Aircraft Integration	Various	Various : Various	0.000	-		27.800	Mar 2016	-		-		-	0	27.800	0
ATW & CIRCM QRC Aircraft Integration	Various	Various : Various	0.000	-		-		0.000		25.548	Jan 2017	25.548	Continuing	Continuing	Continuing
ATW & CIRCM QRC ATW System Development and Qualification	Various	Various : various	0.000	-		15.100	Mar 2016	0.000		26.788	Jan 2017	26.788	Continuing	Continuing	Continuing
		Subtotal	46.244	-		58.019		21.931		57.536		79.467	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	TBD	Various : Various	16.156	-		-		-		-		-	Continuing	Continuing	Continuing
JUONS SO-0010 Phase 2a Test and Evaluation	Various	Various : Various	0.000	-		-		0.000		5.000	Jan 2017	5.000	0	5.000	0
ATW & CIRCM QRC Test and Evaluation	Various	Various : Various	0.000	-		-		0.000		3.720	Jan 2017	3.720	Continuing	Continuing	Continuing
		Subtotal	16.156	-		-		0.000		8.720		8.720	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	70.200	-		62.997		24.318		73.110		97.428	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

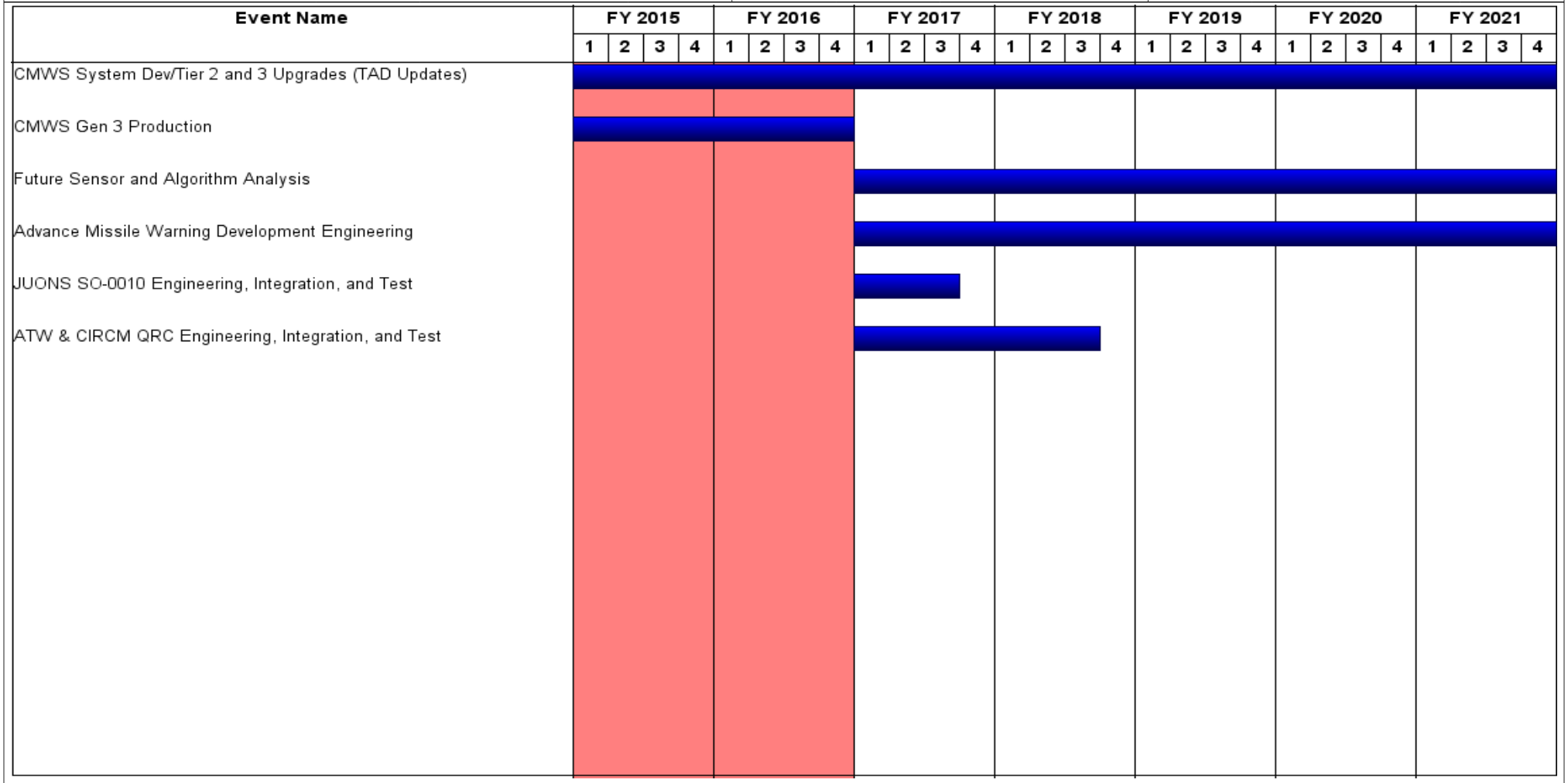

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CMWS System Dev/Tier 2 and 3 Upgrades (TAD Updates)	2	2011	4	2021
CMWS Gen 3 Production	3	2012	4	2016
Future Sensor and Algorithm Analysis	1	2017	4	2021
Advance Missile Warning Development Engineering	1	2017	4	2021
JUONS SO-0010 Engineering, Integration, and Test	1	2017	3	2017
ATW & CIRCM QRC Engineering, Integration, and Test	1	2017	3	2018

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605052A *I Indirect Fire Protection Capability Increment 2*

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	83.995	-	83.995	63.370	43.204	109.323	133.326	0.000	433.218
EY7: *IFPC Increment 2 - Block 1*	-	0.000	0.000	83.995	-	83.995	63.370	43.204	109.323	133.326	0.000	433.218

Note

Funding for FY17 and out has been realigned for Block 1 activities from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7.

A. Mission Description and Budget Item Justification

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

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	83.995	-	83.995
Total Adjustments	0.000	0.000	83.995	-	83.995
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-	-	83.995	-	83.995

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605052A / *Indirect Fire Protection Capability Increment 2*	Project (Number/Name) EY7 / *IFPC Increment 2 - Block 1*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EY7: *IFPC Increment 2 - Block 1*	-	0.000	0.000	83.995	-	83.995	63.370	43.204	109.323	133.326	0.000	433.218
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funding for FY17 and out has been realigned for Block 1 activities from BA4, PE 0604319/DU3 to BA5, PE 0605052/EY7.

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Indirect Fire Protection Capability Increment 2 - Intercept (IFPC Inc 2-I) System Engineering & Program Management ***Description:*** Funding is provided for the following efforts: ***FY 2017 Base Plans:*** - Continue RDT&E efforts associated with the Engineering and Manufacturing Development (EMD) phase - Perform system engineering, logistics engineering, system test and evaluation management, technical control, and business management activities - Conduct system and program reviews - Begin Milestone C preparation and documentation activities - Continue Interceptor Pre-Milestone preparation and documentation activities	-	-	25.134	-	25.134
Title: IFPC Inc 2-I Engineering and Technical Support ***Description:*** Funding is provided for the following efforts: ***FY 2017 Base Plans:***	-	-	36.592	-	36.592

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Increment 2*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
- Continue engineering and technical support for design of system hardware, software, and integration requirements and definition - Participate in system and program reviews - Perform technical assessments, concept studies, cost reduction, risk reduction, final design, and required documentation					
Title: IFPC Inc 2-I System/Subsystem Development, Integration, and Testing ***Description:*** Funding is provided for the following efforts: ***FY 2017 Base Plans:*** - Continue system component hardware, software, and integration development activities - Participate in system and program reviews - Continue development of technical data package - Perform integration, component, and system level risk reduction - Continue system/subsystem hardware, software, and integration test activities - Continue manufacturing, assembly, and integration of Engineering and Manufacturing Development (EMD) phase test assets, to include all Major End Items (MEIs)	-	-	22.269	-	22.269
Accomplishments/Planned Programs Subtotals	-	-	83.995	-	83.995

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE 0605456A, Proj PA3: *PAC-3/MSE MISSILE*	33.709	2.272	-	-	-	-	-	-	-	0.000	35.981
• SSN C53101: *MSE Missile*	532.605	514.946	423.201	-	423.201	459.040	497.009	529.839	520.513	Continuing	Continuing
• PE 0205456A, Proj EF9: *System Integration and Test*	78.720	64.159	69.417	-	69.417	79.562	80.962	96.042	113.641	Continuing	Continuing
• PE 0604114A, Proj EX2: *Lower Tier Air Missile Defense (LTAMD) Capability*	-	-	35.132	-	35.132	-	78.820	-	-	Continuing	Continuing
• SSN C50016: *Lower Tier Air and Missile Defense (AMD)*	110.300	115.075	126.470	-	126.470	112.888	122.768	150.444	120.542	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Increment 2*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE 0202429A, Proj EP8: *JLENS COCOM EXERCISE*	43.248	10.565	45.482	-	45.482	6.746	-	-	-	0	106.041
• PE 0604319A, Proj DU3: *IFPC2*	92.475	155.361	-	-	-	40.003	80.004	120.004	120.006	Continuing	Continuing
• SSN C62002: *IFPC Inc 2-I Block 1 Missile*	-	-	-	-	-	73.552	123.106	186.840	146.300	Continuing	Continuing
• SSN C62001: *IFPC Inc 2-I Block 1 System*	-	-	19.319	-	19.319	47.289	138.547	174.760	287.325	Continuing	Continuing
• PE 0604820A, Proj E10: *Sentinel*	5.022	12.309	15.983	-	15.983	20.844	20.612	30.106	41.402	Continuing	Continuing
• PE 0605457A, Proj S40: *Army Integrated Air and Missile Defense (AIAMD)*	147.250	222.075	252.811	-	252.811	169.070	152.942	32.914	34.447	Continuing	Continuing
• SSN BZ5075: *IAMD Battle Command System*	-	20.917	204.969	-	204.969	287.220	372.916	440.567	439.780	Continuing	Continuing
• PE 0604741A, Proj 146, 149: *Air Defense C2I Eng Dev*	15.294	34.569	36.256	-	36.256	20.141	19.658	17.738	11.651	Continuing	Continuing
• SSN AD50700: *AIR & MSL Defense Planning & Control Sys*	27.374	28.176	54.376	69.958	124.334	17.005	17.960	6.366	6.951	Continuing	Continuing

Remarks

This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.

D. Acquisition Strategy

The Materiel Development Decision (MDD) was completed in fourth quarter Fiscal Year (FY) 2011, allowing for the initiation of an Analysis of Alternatives (AoA) to determine materiel solution approach; establishment of requirement baseline; initiation of development of required Milestone documents and execution of the Milestone decision to continue with Research, Development, Test, & Evaluation (RDT&E) efforts associated with conducting an Engineering Demonstration.

The Government will fund the Aviation and Missile Research Development and Engineering Center (AMRDEC) for the development and demonstration of the Multi-Mission Launcher (MML) during the Technology Maturation and Risk Reduction (TMRR) phase of the program. An independent Cost Benefit Analysis (CBA) was completed, and the recommendation was made to continue organic development through the Engineering and Manufacturing Development (EMD) Phase.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605052A / *Indirect Fire Protection Capability Increment 2*	Project (Number/Name) EY7 / *IFPC Increment 2 - Block 1*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Admin	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, Alabama	0.000	-		-		8.778	Jan 2017	-		8.778	0	8.778	0
		Subtotal	0.000	-		-		8.778		-		8.778	0.000	8.778	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering & Integration	MIPR	Cruise Missile Defense Systems Project Office : Huntsville, AL	0.000	-		-		16.356	Jan 2017	-		16.356	0	16.356	0
Engineering and Technical Support	MIPR	Multiple Activities : Multiple Locations	0.000	-		-		36.592	Jan 2017	-		36.592	0	36.592	0
System/Subsystem Development, Integration, and Test	MIPR	Multiple Activities : Multiple Locations	0.000	-		-		22.269	Jan 2017	-		22.269	0	22.269	0
		Subtotal	0.000	-		-		75.217		-		75.217	0.000	75.217	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.000		83.995		-		83.995	0.000	83.995	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Increment 2*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

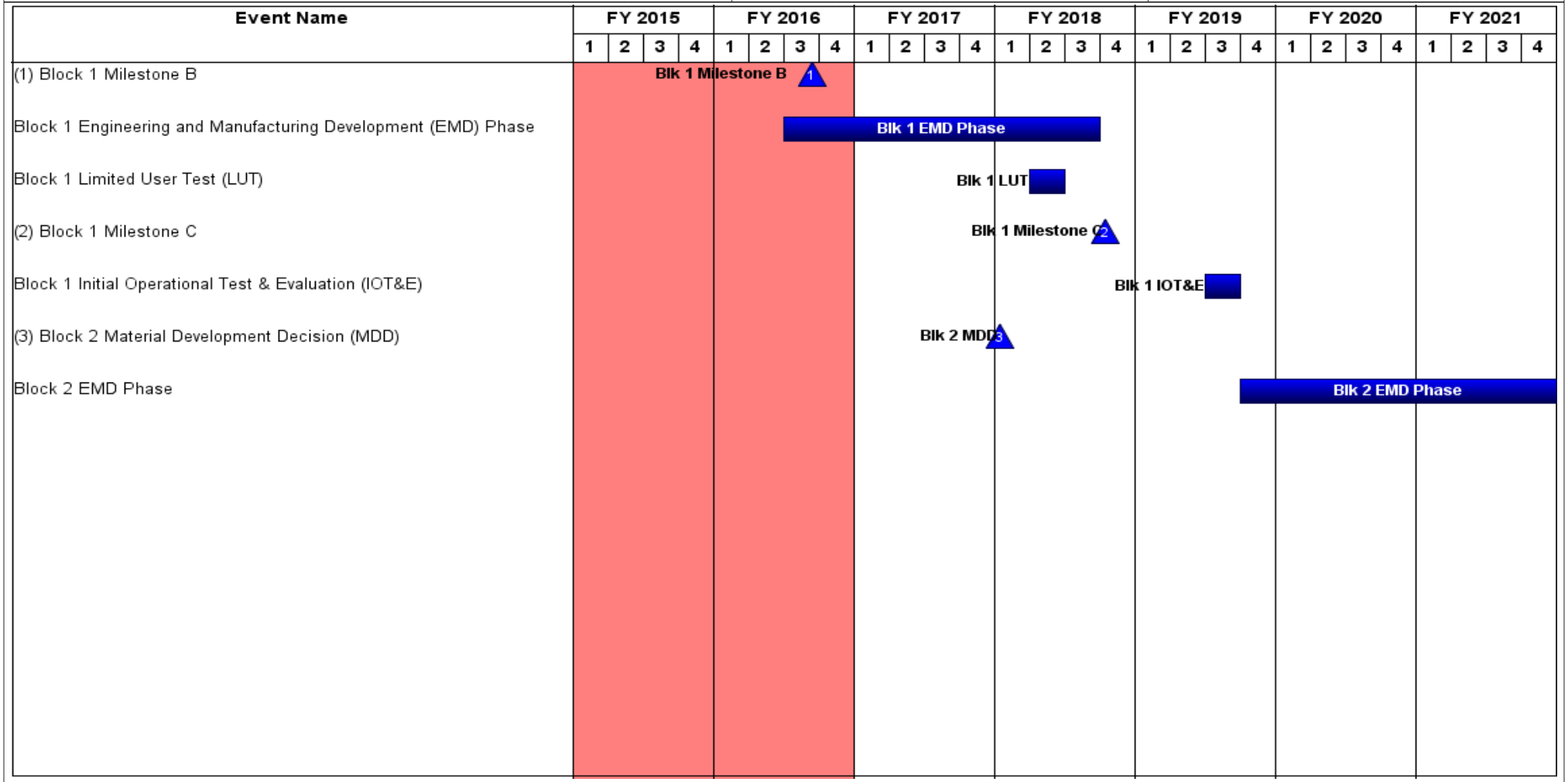

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Increment 2*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Block 1 Milestone B	3	2016	3	2016
Block 1 Engineering and Manufacturing Development (EMD) Phase	3	2016	3	2018
Block 1 Limited User Test (LUT)	2	2018	2	2018
Block 1 Milestone C	4	2018	4	2018
Block 1 Initial Operational Test & Evaluation (IOT&E)	3	2019	3	2019
Block 2 Material Development Decision (MDD)	1	2018	1	2018
Block 2 EMD Phase	4	2019	4	2023

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605350A *I WIN-T Increment 3 - Full Networking*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	108.851	33.515	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	142.366
EE8: *WIN-T Increment 3 - Full Networking*	-	108.851	33.515	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	142.366

Note

Program was funded in PE 0603782A, project 372 in FY 2014 and prior.

A. Mission Description and Budget Item Justification

Warfighter Information Network – Tactical (WIN-T) Increment 3 (Inc 3) develops the Network Operations (NetOps) software to meet the Army's Network Convergence goals. NetOps provides the monitoring, control and planning tools to ensure management of the voice, data and internet transport networks. The NetOps software will also provide Information Assurance and Network Centric Enterprise Services. This allows for seamless integration of the tactical network planning, management, monitoring, and defense for the Signal staff. These NetOps improvements simplify the management of the network and increase the automation of tools and reporting. The developed NetOps software enhancements will be provided as a technical insertion to WIN-T Increments 1 and 2 for fielding and support.

Increment 3 also develops the enhanced Net Centric Waveform (NCW) version 10.x for increased throughput capability beyond the line of sight satellite communication and the Highband Networking Waveform (HNW) version 3.0 for line of sight communications. Both NCW and HNW provide improved network capacity and robustness. The waveform improvements will be available for use in PM WIN-T and other Army and DoD programs.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	113.155	39.700	0.000	-	0.000
Current President's Budget	108.851	33.515	0.000	-	0.000
Total Adjustments	-4.304	-6.185	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.185			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.304	-			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605350A / *WIN-T Increment 3 - Full Networking*	Project (Number/Name) EE8 / *WIN-T Increment 3 - Full Networking*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EE8: *WIN-T Increment 3 - Full Networking*	-	108.851	33.515	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	142.366
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Program was funded in PE 0603782A, project 372 in FY 2014 and prior.

A. Mission Description and Budget Item Justification

Warfighter Information Network – Tactical (WIN-T) Increment 3 (Inc 3) develops the Network Operations (NetOps) software to meet the Army's Network Convergence goals. NetOps provides the monitoring, control and planning tools to ensure management of the voice, data and internet transport networks. The NetOps software will also provide Information Assurance and Network Centric Enterprise Services. This allows for seamless integration of the tactical network planning, management, monitoring, and defense for the Signal staff. These NetOps improvements simplify the management of the network and increase the automation of tools and reporting. The developed NetOps software enhancements will be provided as a technical insertion to WIN-T Increments 1 and 2 for fielding and support.

Increment 3 also develops the enhanced Net Centric Waveform (NCW) version 10.x for increased throughput capability beyond the line of sight satellite communication and the Highband Networking Waveform (HNW) version 3.0 for line of sight communications. Both NCW and HNW provide improved network capacity and robustness. The waveform improvements will be available for use in PM WIN-T and other Army and DoD programs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Increment 3 Product Development	81.805	6.184	-
Description: Increment 3 Engineering Maufacturing Development (EMD) continues development of the Inc 3 system software development and prototype manufacturing of test assets for the Inc 3 system. ***FY 2015 Accomplishments:*** Continues development of NetOps software build 4/5 , completes the Highband Networking Waveform (HNW) version 3.0 development and Net Centric Waveform (NCW) version 10.x certification. Manufacture the NetOps and waveform specific hardware for test assets. ***FY 2016 Plans:*** Completes development and testing of assets for HNW 3.0 over the air demonstration, followed by insertion into the repository.			
Title: Test and Engineering	16.516	24.031	-
Description: Test and Evaluation			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605350A / *WIN-T Increment 3 - Full Networking*	**Project (Number/Name)** EE8 / *WIN-T Increment 3 - Full Networking*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: FY15 T&E funds are required to continue testing of the NetOps Builds through Functional Qualification Testing 1 (FQT), FQT 2, HNW FQT,NCW Government Development Test (GDT) conduct NCW 10.x testing, conduct HNW 3.0 parameter analysis and develop multi-node emulator to support on-going scalability work. ***FY 2016 Plans:*** FY 2016 completes funding the Engineering and Manufacturing Development (EMD) testing by funding FQT 3, Operational Testing of NetOps Builds at the Network Integration Evaluation (NIE) 16.2 and HNW over the air Demonstration.			
Title: Management Services ***Description:*** Provides System Engineering and Program Management Support. ***FY 2015 Accomplishments:*** Continues System Engineering and Program Management Support. ***FY 2016 Plans:*** Completes System Engineering and Program Management Support and funds smart shutdown process.	10.530	3.300	-
Accomplishments/Planned Programs Subtotals	108.851	33.515	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

An evolutionary acquisition strategy is being utilized to provide for the timely insertion of new technologies into Army communication systems by adhering to the basic principles of the DoD Modular Open Systems Approach (MOSA). This allows the Army to keep pace with changing commercial technology and maintain required interoperability with other joint, strategic and commercial standards-based networks. Applying integrated Network Operations (NetOps) capability, WIN-T provides the capability to manage, prioritize, and protect information. It ensures NetOps commonality with Joint, Allied, Coalition, Current Force, and Commercial voice and data networks.

The program is presently in its Engineering, Manufacturing, and Development (EMD) phase, as WIN-T Inc 3 technology is being tested and released over time and will be inserted into WIN-T Inc 1 and Inc 2.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605350A / *WIN-T Increment 3 - Full Networking*	**Project (Number/Name)** EE8 / *WIN-T Increment 3 - Full Networking*

The Acquisition Decision Memorandum (ADM) dated 30 May 2014 directed the restructure of Inc 3 program. Software development for NetOps Build 4/5 and NCW 10.x is to be completed and testing in FY 2016. The ADM allowed for the development and demonstration of HNW 3.0. The program will also cease all efforts associated with development of Inc 3 unique hardware items and will have an efficient and effective smart shutdown.

An updated Acquisition Program Baseline (APB) was approved by the AAE on 15 Sep 14 and shows no Nunn-McCurdy risk due to the program quantity being zero. Likewise, the Program Acquisition Unit Cost/Average Procurement Unit Cost (PAUC/APUC) are no longer applicable.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605350A / *WIN-T Increment 3 - Full Networking*	Project (Number/Name) EE8 / *WIN-T Increment 3 - Full Networking*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/ FFPLOE	Various : Various	0.000	10.530		3.300		-		-		-	0	13.830	0
		Subtotal	0.000	10.530		3.300		-		-		-	0.000	13.830	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment 3 Engineering Manufacturing and Development	SS/CPFF	General Dynamics C4 Systems Inc : Taunton, MA	0.000	81.805		6.184		-		-		-	0	87.989	0
		Subtotal	0.000	81.805		6.184		-		-		-	0.000	87.989	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	Various	Various : Various	0.000	16.516		24.031		-		-		-	0	40.547	0
		Subtotal	0.000	16.516		24.031		-		-		-	0.000	40.547	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	108.851		33.515		-		-		-	0.000	142.366	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605350A / *WIN-T Increment 3 - Full Networking*	**Project (Number/Name)** EE8 / *WIN-T Increment 3 - Full Networking*

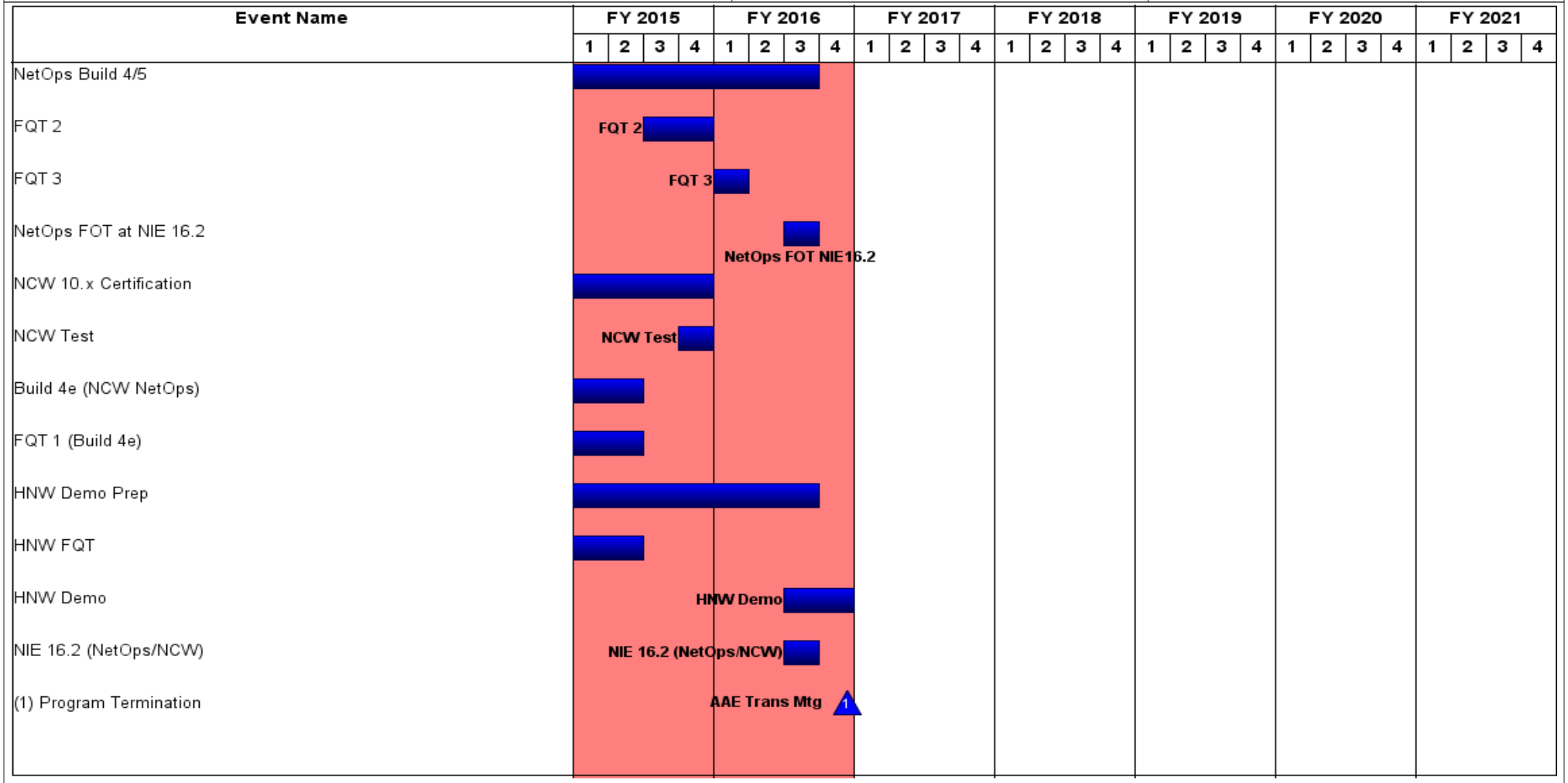

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605350A / *WIN-T Increment 3 - Full Networking*	**Project (Number/Name)** EE8 / *WIN-T Increment 3 - Full Networking*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NetOps Build 4/5	1	2014	3	2016
FQT 2	3	2015	4	2015
FQT 3	1	2016	1	2016
NetOps FOT at NIE 16.2	3	2016	3	2016
NCW 10.x Certification	1	2014	4	2015
NCW Test	4	2015	4	2015
Build 4e (NCW NetOps)	2	2014	2	2015
FQT 1 (Build 4e)	1	2015	2	2015
HNW Demo Prep	4	2014	3	2016
HNW FQT	1	2015	2	2015
HNW Demo	3	2016	4	2016
NIE 16.2 (NetOps/NCW)	3	2016	3	2016
Program Termination	4	2016	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	6.616	11.455	5.028	-	5.028	35.927	6.820	10.817	9.398	Continuing	Continuing
EA9: *Airborne Maritime Fixed - Small Airborne (AMF-SA)*	-	6.616	5.300	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
EG6: *Small Airborne Networking Radio (SANR)*	-	0.000	6.155	5.028	-	5.028	35.927	6.820	10.817	9.398	Continuing	Continuing

Note

In FY 2015, Project EA9 represents the total Airborne Maritime Fixed Small Airborne (AMF-SA) RDT&E budget. In FY 2016, funding was allocated between Projects EA9 and EG6. Prior to FY 2014, AMF JTRS was funded under Navy PE 0604280N aligned under the Navy Joint Tactical Radio System (JTRS) Programs. In accordance with the ADM dated 11 July 2012, the JTRS Program of Record transitioned to a Military Department-managed program. AMF is now managed by Program Executive Office Command, Control and Communications-Tactical (PEO C3T) under Project Manager Tactical Radios (PM TR), funded by Army PE 0605380A. On 2 May 2014, USD (AT&L) issued an ADM that designated Small Airborne Link 16 Terminal (SALT) and Small Airborne Networking Radio (SANR) as subprograms under the AMF Program.

On August 31, 2015, the SALT Milestone Decision Authority issued an Acquisition Decision Memorandum, tasking an orderly close out of the SALT subprogram.

Project No. EG6 represents the SANR RDTE subprogram budget under AMF.

A. Mission Description and Budget Item Justification

The Airborne Maritime/Fixed Station (AMF) radios are software programmable, multi-band, multi-mode, mobile ad hoc networking radios, providing simultaneous voice and data communications for Army Aviation platforms. The radios will operate in networks supporting the Common Operating Picture (COP), Situational Awareness (SA), and interoperability of Mission Command (MC) systems throughout the battlefield. AMF radios will ensure the Soldier's ability to communicate both horizontally and vertically via voice and data within all mission areas and Common Operating Environment (COE). AMF radios will help close capability gaps by extending data networking to company and below echelons, enabling network services to the platform and connecting Army Aviation platforms to Army ground and Joint air network domains.

Per Milestone Decision Authority (MDA) direction, the AMF Program will procure radios as Non-Developmental Items (NDI). The MDA, Under Secretary of Defense for Acquisition, Technology, and Logistics (USD AT&L), signed the Acquisition Program Baseline (APB) along with an Acquisition Decision Memorandum (ADM) in May of 2014, which identified the Small Airborne Networking Radio (SANR) and the Small Airborne Link 16 Terminal (SALT) as subprograms.

SANR will operate networking waveforms that are deployed by Joint Forces today, enable interoperability between different types of platforms, and transport operational and Mission Command information through the tactical network. SANR is relevant to the Joint Functional Concept (Net-Centric Environment), Joint Integrating Concept

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605380A *I AMF Joint Tactical Radio System (JTRS)*

(Net-Centric Operational Environment), Joint Operating Concept (Major Combat Operations, Stability Operations), and JTRS Concept of Operations (Tactical Wireless Joint Networks).

On August 31, 2015, the SALT MDA issued an ADM tasking an orderly close out of the SALT subprogram.

Total FY 2017 funding is $5.028 million, all of which is allocated to SANR (Project No. EG6). The FY 2017 funding provides funding necessary to continue source selection activities in support of contract award.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	6.878	12.987	11.091	-	11.091
Current President's Budget	6.616	11.455	5.028	-	5.028
Total Adjustments	-0.262	-1.532	-6.063	-	-6.063
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.532			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.262	-			
• Adjustments to Budget Years	-	-	-6.063	-	-6.063

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EA9 / *Airborne Maritime Fixed - Small Airborne (AMF-SA)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EA9: *Airborne Maritime Fixed - Small Airborne (AMF-SA)*	-	6.616	5.300	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

On August 31, 2015, the Small Airborne Link 16 Terminal (SALT) Milestone Decision Authority (MDA) issued an Acquisition Decision Memorandum (ADM) tasking an orderly close out of the SALT subprogram.

A. Mission Description and Budget Item Justification

On August 31, 2015, the SALT MDA issued an ADM tasking an orderly close out of the SALT subprogram.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Airborne Maritime Fixed Small Airborne (AMF-SA).	6.616	5.300	-
Description: Airborne Maritime Fixed Small Airborne (AMF-SA). ***FY 2015 Accomplishments:*** With FY 2015 funding, the Program Management Office (PMO) prepared pre-award documentation and conducted Pre-solicitation Reliability Testing (PRT) for SALT. Army Test and Evaluation Command (ATEC) was funded to support program test & evaluation and requirements efforts. ***FY 2016 Plans:*** FY 2016 funds PMO Support and System Engineering support.			
Accomplishments/Planned Programs Subtotals	6.616	5.300	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B90900: *B90902 Airborne Maritime Fixed - Small Airborne (AMF-SA)*	-	-	-	-	-	-	-	-	-		

Remarks

Due to close out of SALT, the FY 2018-FY 2021 procurement funding allocations will be transferred out of B90902.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EA9 / *Airborne Maritime Fixed - Small Airborne (AMF-SA)*

D. Acquisition Strategy

On August 31, 2015, the SALT MDA issued an ADM tasking an orderly close out of the SALT subprogram.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EA9 / *Airborne Maritime Fixed - Small Airborne (AMF-SA)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA Business Operations Management and Support	Various	Various : Various	5.518	3.014		4.396		-		-		-	Continuing	Continuing	0
		Subtotal	5.518	3.014		4.396		-		-		-	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA - System Engineering and Requirements Validation	Various	Various : Various	1.160	1.325		0.904		-		-		-	Continuing	Continuing	0
		Subtotal	1.160	1.325		0.904		-		-		-	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA - Logistics Support	Various	Various : Various	1.242	1.267		-		-		-		-	Continuing	Continuing	0
		Subtotal	1.242	1.267		-		-		-		-	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA - Test and Evaluation and Test Support	Various	Various : Various	1.954	1.010		-		-		-		-	Continuing	Continuing	0
		Subtotal	1.954	1.010		-		-		-		-	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EA9 / *Airborne Maritime Fixed - Small Airborne (AMF-SA)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.874	6.616		5.300		-		-		-	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EA9 / *Airborne Maritime Fixed - Small Airborne (AMF-SA)*

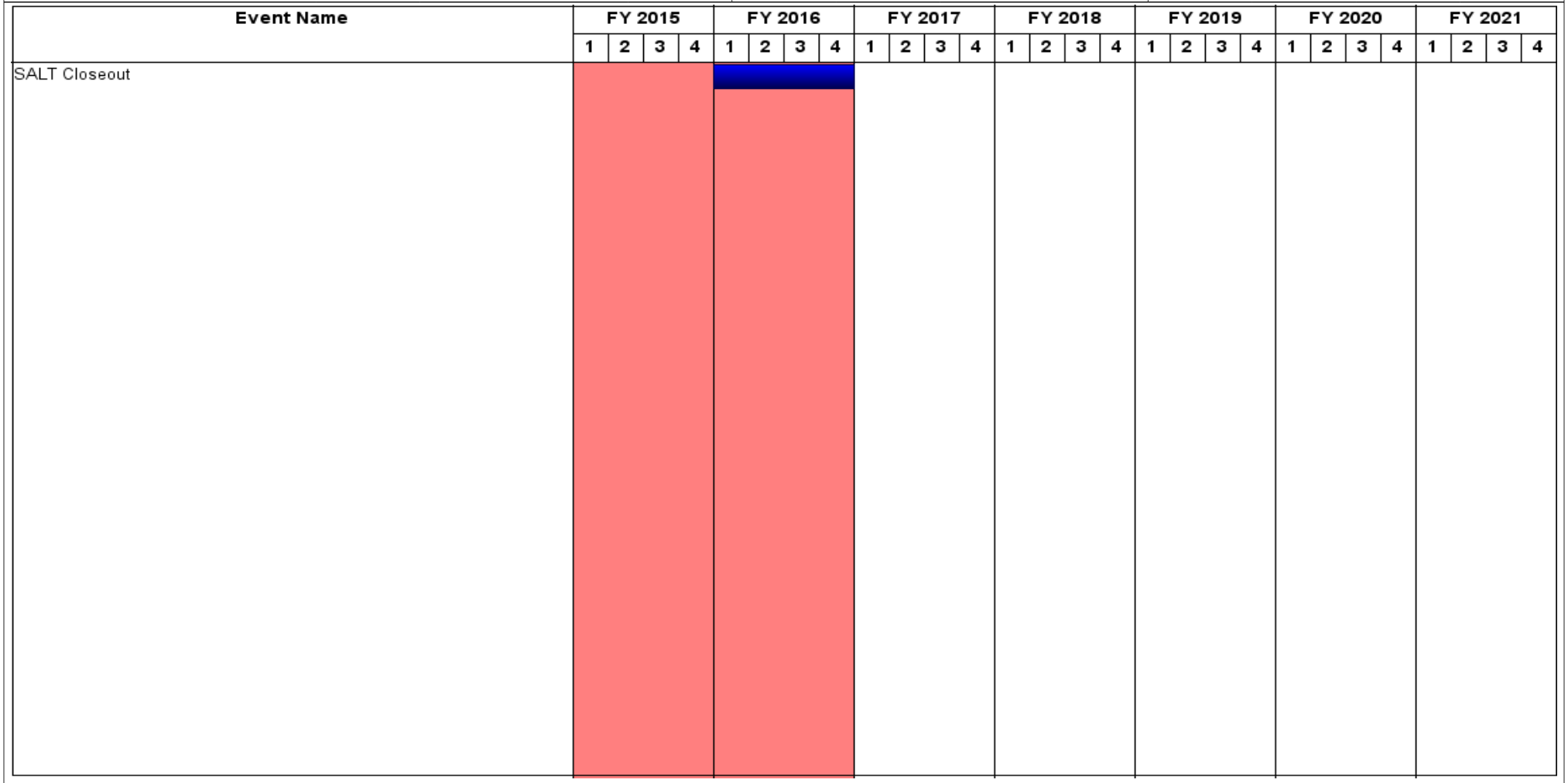

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EA9 / *Airborne Maritime Fixed - Small Airborne (AMF-SA)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SALT Closeout	1	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EG6 / *Small Airborne Networking Radio (SANR)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EG6: *Small Airborne Networking Radio (SANR)*	-	0.000	6.155	5.028	-	5.028	35.927	6.820	10.817	9.398	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY 2016, Project No. EG6 represents the total Small Airborne Networking Radio (SANR) RDT&E budget. Prior to FY 2014, AMF JTRS was funded under Navy PE 0604280N aligned under the Navy JTRS Programs. In accordance with the Acquisition Decision Memorandum (ADM) dated 11 July 2012, the JTRS Program of Record transitioned to a Military Department-managed program. On 2 May 2014, USD (AT&L) issued an ADM that designated Small Airborne Link 16 Terminal (SALT) and SANR as subprograms under the AMF Program. AMF JTRS is managed by Program Executive Office Command, Control and Communications-Tactical (PEO C3T) under Project Manager Tactical Radios (PM TR), funded by Army PE 0605380A.

A. Mission Description and Budget Item Justification

Per Milestone Decision Authority direction, AMF JTRS will procure SANR radios as Non-Developmental Items (NDI). The SANR is a two-channel, software-defined, National Security Agency (NSA) Type 1 certified networking radio providing seamless real-time information for operation in mobile and dynamic combat environments that will meet tactical communications requirements as validated by the Army Aviation community. SANR will provide increased data throughput to Army Aviation platforms via the Soldier Radio Waveform (SRW) and Wideband Networking Waveform (WNW) capabilities, and maintain Single Channel Ground and Airborne Radio System (SINCGARS) capability. SANR will replace the current SINCGARS radios on Army Aviation platforms. SANR is planned for implementation on the following platforms: Apache (AH-64E), Black Hawk (UH-60V, UH-60M, HH-60M, and MH-60M), Chinook (CH-47F and MH-47G), Gray Eagle Unmanned Aircraft System (UAS) (MQ-1C), and Little Bird (MH-6) aircraft. SANR will enhance and further enable the ability of the maneuver commander to integrate and synchronize aviation forces with land based operational forces. SANR, employed on Army aviation platforms, will enable aviation combat elements (Combat Aviation Brigades, Theater Aviation Brigades, and Special Operations Aviation Regiment (SOAR)) to better utilize the inherent versatility of airborne communications as a complement to the unique capabilities of the other combat arms. SANR will give commanders enhanced Situational Awareness and Mission Command in a package that provides a more responsive means of directing aircraft to match changing maneuver forces situations and missions.

FY 2017 funding provides for continuation of source selection activities in support of contract award.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Small Airborne Networking Radio (SANR)	-	6.155	5.028
Description: Small Airborne Networking Radio (SANR)			
FY 2016 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
With FY 2016 funding, the program will conduct Market Research, develop and release the Request for Proposal (RFP), and begin source selection activities in support of contract award. ***FY 2017 Plans:*** With FY 2017 funding, the program will continue and complete source selection activities in support of contract award, and develop documentation to support Milestone C.			
Accomplishments/Planned Programs Subtotals	-	6.155	5.028

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• B90900: *B90904 JTRS (AMF) Small Airborne Networking Radio (SANR)*	-	-	-	-	-	-	41.049	64.202	82.949	Continuing	Continuing

Remarks

D. Acquisition Strategy

The SANR acquisition strategy is to procure small airborne networking radios for the Apache, Blackhawk, Chinook, Gray Eagle and Little Bird aircraft. SANR will be capable of operating the WNW, SRW, and SINCGARS waveforms. The SANR acquisition strategy employs full and open competition using an NDI procurement approach that leverages prior industry and Government investment in software-defined radios. The strategy supports a concept in which NDI radios can be selected from a qualified vendor that meet the AMF SANR Capability Production Document (CPD) requirements.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EG6 / *Small Airborne Networking Radio (SANR)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA Business Operations Management and Support	Various	Various : Various	0.000	-		2.388		2.615		-		2.615	Continuing	Continuing	0
		Subtotal	0.000	-		2.388		2.615		-		2.615	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA - System Engineering and Requirements Validation	Various	Various : Various	0.000	-		1.166		1.176		-		1.176	Continuing	Continuing	0
		Subtotal	0.000	-		1.166		1.176		-		1.176	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA - Logistics Support	Various	Various : Various	0.000	-		0.544		0.423		-		0.423	Continuing	Continuing	0
		Subtotal	0.000	-		0.544		0.423		-		0.423	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-SA - Test and Evaluation and Test Support	Various	Various : Various	0.000	-		2.057		0.814		-		0.814	Continuing	Continuing	0
		Subtotal	0.000	-		2.057		0.814		-		0.814	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	Project (Number/Name) EG6 / *Small Airborne Networking Radio (SANR)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		6.155		5.028		-		5.028	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

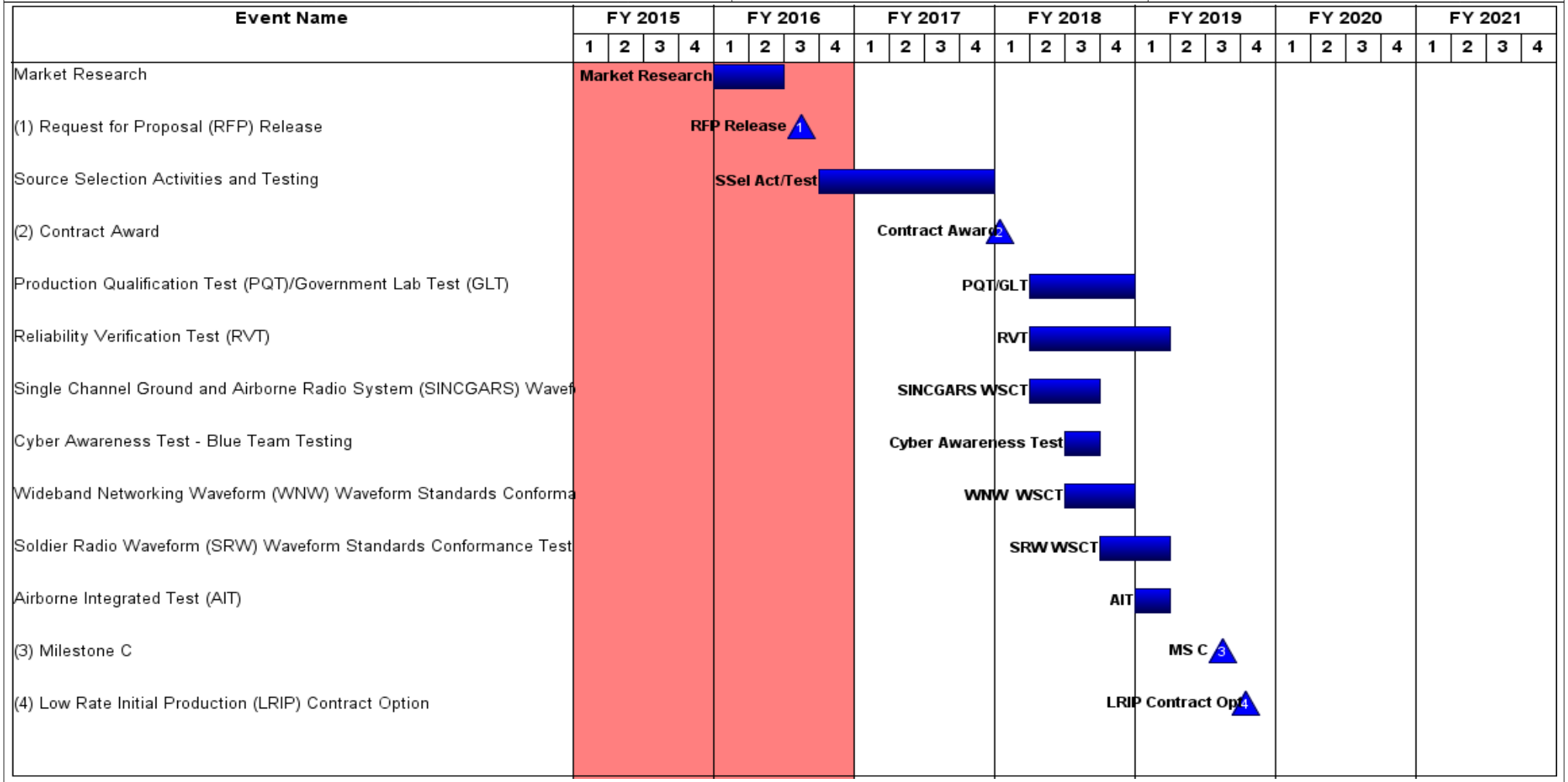

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

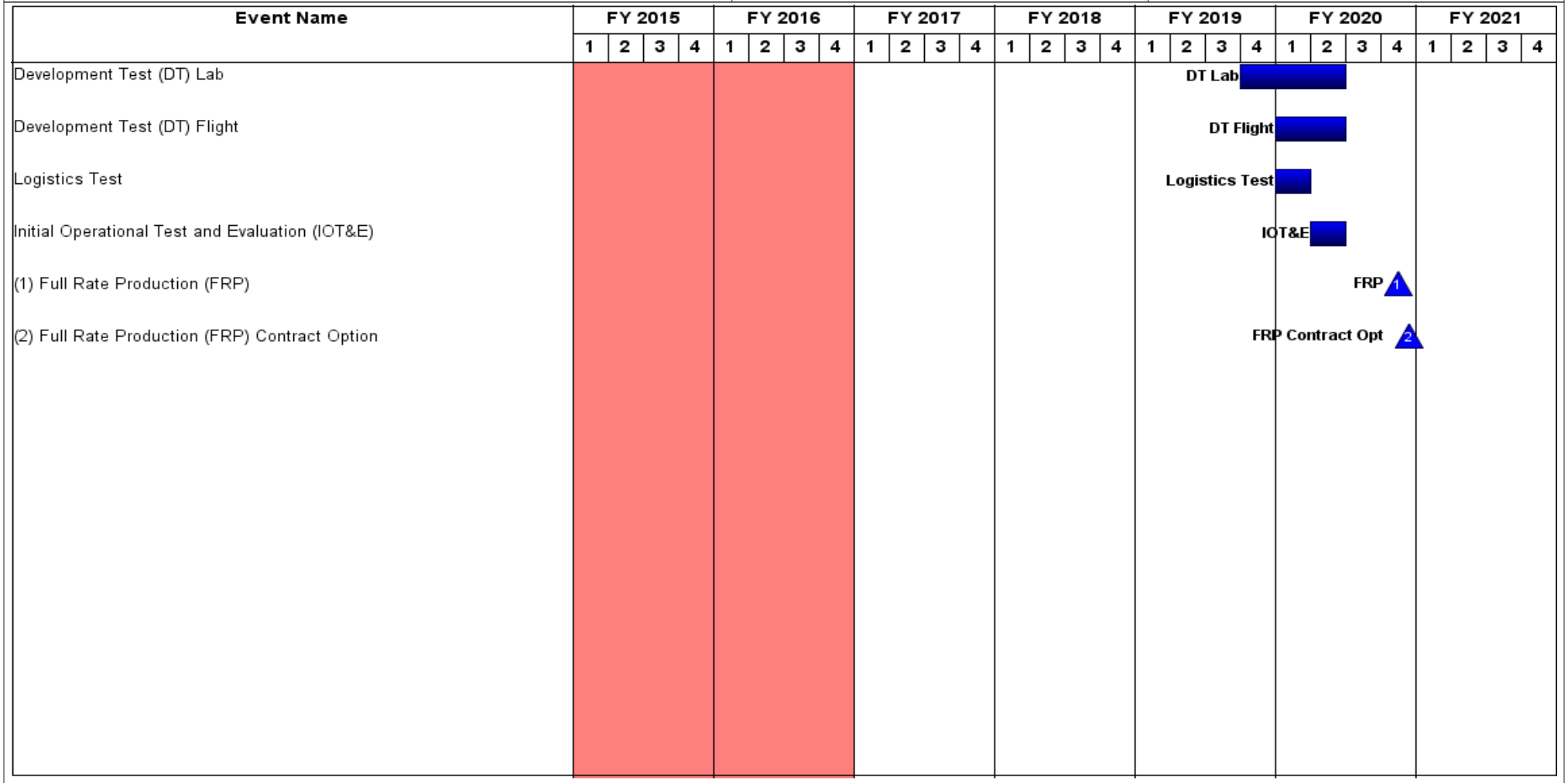

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605380A / *AMF Joint Tactical Radio System (JTRS)*	**Project (Number/Name)** EG6 / *Small Airborne Networking Radio (SANR)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Market Research	1	2016	2	2016
Request for Proposal (RFP) Release	3	2016	3	2016
Source Selection Activities and Testing	4	2016	4	2017
Contract Award	1	2018	1	2018
Production Qualification Test (PQT)/Government Lab Test (GLT)	2	2018	4	2018
Reliability Verification Test (RVT)	2	2018	1	2019
Single Channel Ground and Airborne Radio System (SINCGARS) Waveform Standard	2	2018	3	2018
Cyber Awareness Test - Blue Team Testing	3	2018	3	2018
Wideband Networking Waveform (WNW) Waveform Standards Conformance Test (WSCT)	3	2018	4	2018
Soldier Radio Waveform (SRW) Waveform Standards Conformance Test (WSCT)	4	2018	1	2019
Airborne Integrated Test (AIT)	1	2019	1	2019
Milestone C	3	2019	3	2019
Low Rate Initial Production (LRIP) Contract Option	4	2019	4	2019
Development Test (DT) Lab	4	2019	2	2020
Development Test (DT) Flight	1	2020	2	2020
Logistics Test	1	2020	1	2020
Initial Operational Test and Evaluation (IOT&E)	2	2020	2	2020
Full Rate Production (FRP)	4	2020	4	2020
Full Rate Production (FRP) Contract Option	4	2020	4	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	80.585	83.054	42.972	-	42.972	8.526	5.900	0.000	0.000	0.000	221.037
JA6: *Joint Air-To-Ground Missile (JAGM)*	-	80.585	83.054	42.972	-	42.972	8.526	5.900	0.000	0.000	0.000	221.037

A. Mission Description and Budget Item Justification

The Joint Air-to-Ground Missile (JAGM) program is an Army led Major Defense Acquisition Program (MDAP) with joint interest with the U.S. Marine Corps (USMC) and U.S. Navy. The JAGM is the next generation of aviation launched fire and forget missiles to replace the HELLFIRE laser and Longbow radar missiles. JAGM will be used by joint service aircraft for destruction of high value stationary, moving and relocatable land and maritime targets from standoff range in day, night, adverse weather, and obscured battlefield conditions.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	83.799	88.866	41.286	-	41.286
Current President's Budget	80.585	83.054	42.972	-	42.972
Total Adjustments	-3.214	-5.812	1.686	-	1.686
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.812			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.214	-			
• Adjustments to Budget Years	-	-	1.686	-	1.686

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	Project (Number/Name) JA6 / *Joint Air-To-Ground Missile (JAGM)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
JA6: *Joint Air-To-Ground Missile (JAGM)*	-	80.585	83.054	42.972	-	42.972	8.526	5.900	0.000	0.000	0.000	221.037
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Air-to-Ground Missile (JAGM) program is an Army led Major Defense Acquisition Program (MDAP) with joint interest with the U.S. Marine Corps (USMC) and U.S. Navy. The JAGM mission is to develop the next generation of aviation launched fire and forget missiles to replace the HELLFIRE laser and Longbow radar missiles. JAGM will be used by joint service aircraft for destruction of high value stationary, moving and relocatable land and maritime targets from standoff range in day, night, adverse weather, and obscured battlefield conditions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Milestone (MS) B Preparation ***Description:*** The JAGM Product Office will prepare documentation for MS B decision. ***FY 2015 Accomplishments:*** The JAGM Product Office completed documentation for MS B and an Engineering and Manufacturing Development (EMD) Request for Proposal (RFP). Additionally the office conducted a Source Selection Evaluation Board (SSEB) in response to the RFP. Program completed a successful MS B Defense Acquisition Board (DAB) and awarded an EMD contract in the fourth quarter FY 2015.	8.238	-	-
Title: Guidance Section (GS) Critical Design Review (CDR), Component Qualification Testing (CQT) and System Qualification Testing (SQT) ***Description:*** The JAGM Product Office will integrate the JAGM GS to the HELLFIRE missile backend and perform SQT. ***FY 2015 Accomplishments:*** The JAGM Product Office and prime contractor continued SQT, which included Environmental and Electromagnetic Environmental Effects (E3) and Tower/Captive Flight Testing. The Government conducted ground launched flight tests to support risk reduction efforts prior to EMD.	8.264	-	-
Title: Engineering and Manufacturing Development (EMD) Contract ***Description:*** The JAGM prime contractor will conduct qualification of the production line and deliver missiles to support both Developmental and Operational Testing. The prime contractor will support government led activities to qualify the JAGM on the AH-64 Apache.	47.552	29.060	7.881

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: The JAGM prime contractor worked to establish subcontracts, to procure hardware and to initiate JAGM missile production. The prime contractor supported airworthiness qualification of the JAGM missile on the AH-64 Apache. EMD long lead items (HELLFIRE Back end) were procured to support EMD test events. ***FY 2016 Plans:*** The JAGM prime contractor continues to establish subcontracts, procure hardware and continue production of the JAGM missile on a pilot production line. Prime contractor supports government led All Up Round (AUR) CDR, System Test Readiness Review (TRR) and Production Qualification Test (PQT) and integration on AH-64 Apache. ***FY 2017 Plans:*** The JAGM prime contractor develops, integrates and delivers tactical AURs for integrated test and evaluation on the Apache platform and supports Initial Operational Test and Evaluation (IOT&E). The prime contractor will also deliver hardware for safety tests and Explosive Ordnance Disposal (EOD) classroom system trainers.			
Title: System Critical Design Review (CDR) ***Description:*** System CDR occurs in the EMD phase. Assess the JAGM system final design as captured in product specifications. Ensures that each item in the product baseline has been captured in the detailed design documentation. ***FY 2015 Accomplishments:*** The JAGM Product Office prepared for JAGM System CDR. ***FY 2016 Plans:*** The JAGM Product Office will complete System CDR by verifying prime contractor design compliance to all performance requirements including environmental conditions, missile and platform interfaces, reliability and cyber security.	3.516	5.522	-
Title: Engineering and Manufacturing Development (EMD) Aircraft Qualification and Missile Testing ***Description:*** The Government will conduct system developmental testing and aircraft qualification testing. ***FY 2015 Accomplishments:*** The JAGM Product Office conducted warhead lethality testing, integrated flight simulations, captive carry testing and missile flight testing. The JAGM Product Office, platform product office and platform prime contractor conducted aircraft qualification testing. Test data and interface requirements will support initial airworthiness qualification required for testing on the AH-64 Apache. ***FY 2016 Plans:***	13.015	32.475	24.229

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
The JAGM Product Office and Other Government Agencies (OGAs) will conduct warhead tests for lethality characterization and Live Fire Test and Evaluation (T&E) requirements; Seeker performance through captive flight tests including countermeasures and hardware in the loop; Production Qualification Tests for Environmental and Electromagnetic Environmental Effects (E3); Ground launched missile flight tests; Safety of flight tests and platform integration laboratory testing for airworthiness and interface verification; System TRR; Apache flight tests with missile launches against threat targets including Live Fire T&E. The data will support the Full Material Release process. ***FY 2017 Plans:*** The JAGM Product Office and OGAs will continue developmental T&E, Integrated T&E and Operational T&E to include warhead tests for Live Fire T&E requirements; Initial Operational Test and Evaluation (IOT&E); Aircraft and missile regression flight tests to demonstrate compatibility is maintained with legacy systems; and a Logistics Demonstration. The data will support System Evaluation, Milestone C and Full Material Release.			
Title: Systems Engineering and Milestone (MS) C Preparation ***Description:*** The JAGM Product Office will complete all documentation, conduct evaluations, reviews and analyses to support a FY 2017 MS C decision, Production Contract Award and contract options. ***FY 2016 Plans:*** The JAGM Product Office will develop all documentation, conduct reviews and perform analyses to support a FY 2017 MS C decision, contract options and conduct systems engineering to support other platform integration. ***FY 2017 Plans:*** The JAGM Product Office takes delivery of missile and system trainers while conducting government testing and systems engineering (Lethality, Safety, Qualification, Airworthiness, Logistics Demonstration, IOT&E and Full Material Release). JAGM Product Office will continue to coordinate and staff all acquisition documents in support of a fourth quarter FY 2017 MS C decision per DoD 5000.02 and AR 70-1 guidance.	-	15.997	10.862
Accomplishments/Planned Programs Subtotals	80.585	83.054	42.972

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• BLIN 005 (C70302A): *Joint Air-To-Ground Missile (JAGM) Procurement*	-	27.738	101.851	-	101.851	190.432	259.118	227.606	307.370	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0605450N: *Navy JAGM Missile RDT&E*	6.104	25.898	17.880	-	17.880	15.838	7.004	0.161	0.187	Continuing	Continuing
• 0206138M: *Navy JAGM Missile Procurement*	-	-	26.200	-	26.200	26.200	24.300	24.300	49.786	Continuing	Continuing

Remarks

D. Acquisition Strategy

The JAGM EMD acquisition approach outlines the plan to qualify the All Up Round (AUR), qualify the production line, qualify JAGM on the U.S. Army AH-64 Apache, and complete operational testing. Advanced Procurement of long lead items (HELLFIRE Romeo back ends and Guidance Section subsystems) occurs in FY 2016 - FY 2018. This long lead procurement is needed to facilitate Low Rate Initial Production (LRIP) I and II and Full Rate Production (FRP), which is necessary to achieve Initial Operational Capability (IOC). The JAGM Product Office and Army Contracting Command (ACC) - Redstone Arsenal conducted a full and open competition for the JAGM EMD phase and awarded a Fixed Price Incentive Fee (FPIF) contract in FY 2015.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	Project (Number/Name) JA6 / *Joint Air-To-Ground Missile (JAGM)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Eng/ Project Management	C/LH	Various : Performers	40.374	11.081	Oct 2014	15.997	Oct 2015	10.862	Oct 2016	-		10.862	0	78.314	0
		Subtotal	40.374	11.081		15.997		10.862		-		10.862	0.000	78.314	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development Prime Contract	C/FFP	TD : Prime Contract	371.319	-		-		-		-		-	0	371.319	0
Rocket Motor Insensitive Munition (IM) Qualification	C/CPFF	Defense Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	30.534	1.900	Jan 2015	-		-		-		-	0	32.434	0
Electro-Mechanical Control Actuator System (EMCAS)	C/CPFF	Defense Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	4.033	-		-		-		-		-	0	4.033	0
Integrated Warhead	C/CPFF	Defense Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	2.982	-		-		-		-		-	0	2.982	0
EMD Long Lead Contract (Backends)	SS/FFP	Lockheed Martin : Orlando, FL	0.430	7.652	Jul 2015	-		-		-		-	0	8.082	0
Development Engineering	C/LH	Various : Performers	21.648	-		-		-		-		-	0	21.648	0
EMD Prime Contract	C/FPIF	Lockheed Martin : Orlando, Florida	0.000	38.000	Apr 2015	29.060	Apr 2016	7.881	Apr 2017	-		7.881	0	74.941	0
		Subtotal	430.946	47.552		29.060		7.881		-		7.881	0.000	515.439	0.000

Remarks

(C / FFP) - Competitive / Firm Fixed Price
(C / CPFF) - Competitive / Cost-Plus Fixed Fee
(C / LH) - Competitive / Labor Hour

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(SS / FFP) - Sole Source / Firm Fixed Price (C / FPIF) - Competitive / Fixed Price Incentive (Firm Target)															

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Gov Agencies	C/LH	Various : Performers	24.326	21.952	Nov 2015	37.997	Nov 2016	24.229	Nov 2017	-		24.229	0	108.504	0
		Subtotal	24.326	21.952		37.997		24.229		-		24.229	0.000	108.504	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	495.646	80.585		83.054		42.972		-		42.972	0.000	702.257	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

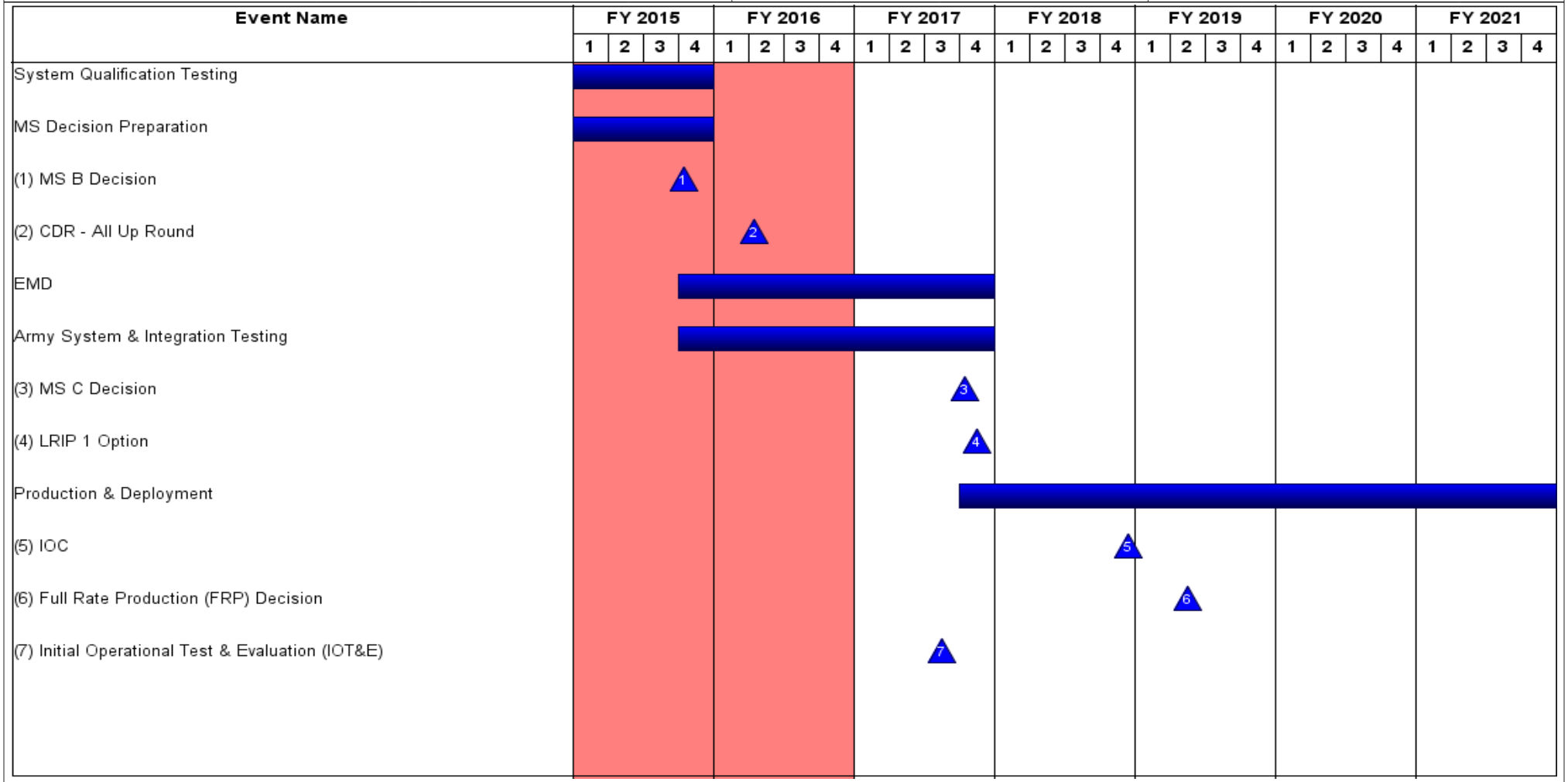

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
System Qualification Testing	3	2014	4	2015
MS Decision Preparation	1	2013	4	2015
MS B Decision	4	2015	4	2015
CDR - All Up Round	2	2016	2	2016
EMD	4	2015	4	2017
Army System & Integration Testing	4	2015	4	2017
MS C Decision	4	2017	4	2017
LRIP 1 Option	4	2017	4	2017
Production & Deployment	4	2017	4	2021
IOC	4	2018	4	2018
Full Rate Production (FRP) Decision	2	2019	2	2019
Initial Operational Test & Evaluation (IOT&E)	3	2017	3	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605456A / *PAC-3/MSE Missile*

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	33.709	2.272	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	35.981
PA3: *PAC-3/MSE Missile*	-	33.709	2.272	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	35.981

Note

Realigned requirements not unique to MSE to PE 0205456A EF9 in FY15.

A. Mission Description and Budget Item Justification

This system is an integral part of the overall Air and Missile Defense (AMD) architecture and enables the incremental fielding of the Integrated Air and Missile Defense Fire Control System/capability for the composite Army Air and Missile Defense Battalions.

The PAC-3 Missile Segment Enhancement (MSE) is the latest version of the PAC-3 Missile. It provides a more agile and lethal interceptor that increases the engagement envelope/defended area of the PATRIOT System. Both Live Fire Test and Evaluation (LFT&E) and Initial Operational Test & Evaluation (IOT&E) activities are required to be executed during Low Rate Initial Production (LRIP) in support of the planned Full Rate Production (FRP) decision. As software and hardware improvements are developed there is a continuing need for system level modeling, simulations, and tests. Modeling and Simulation allow for performance assessment against all threats that would not be possible in flight tests due to cost, target, and range constraints. Flight testing is periodically required for validation of the Modeling and Simulation as well as satisfying Army Test & Evaluation Command/Director, Operational Test & Evaluation (ATEC/DOTE) requirements.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	34.991	2.272	0.000	-	0.000
Current President's Budget	33.709	2.272	0.000	-	0.000
Total Adjustments	-1.282	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.282	-			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605456A / *PAC-3/MSE Missile*	Project (Number/Name) PA3 / *PAC-3/MSE Missile*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
PA3: *PAC-3/MSE Missile*	-	33.709	2.272	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	35.981
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Missile Segment Enhancement (MSE) is the latest version of the PAC-3 Missile. It provides a more agile and lethal interceptor that increases the engagement envelope/defended area of the PATRIOT System. Both LFT&E and IOT&E activities are required to be executed during Low Rate Initial Production (LRIP) in support of the planned Full Rate Production (FRP) decision. As software and hardware improvements are developed there is a continuing need for system level modeling, simulations, and tests. Modeling and Simulation allow for performance assessment against all threats that would not be possible in flight tests due to cost, target and range constraints. Flight testing is periodically required for validation of Modeling and Simulation as well as satisfying ATEC/DOTE requirements.

PATRIOT is an integral part of the overall Air and Missile Defense (AMD) Architecture and enables the incremental fielding of the system capability for Army Air and Missile Defense Battalions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: MSE PAC-3 ***Description:*** Funding is provided for the following efforts ***FY 2015 Accomplishments:*** Provided Missile Segment Enhancement / PAC-3 technical support for initial PDB-8.	11.851	-	-
Title: Testing, Targets, and Modeling and Simulation ***Description:*** Funding is provided for the following efforts ***FY 2015 Accomplishments:*** Integration of missile and ground system hardware and software. Test activities to support Test and Evaluation Master Plan (TEMP) for initial IOT&E activities. ***FY 2016 Plans:*** Continues test activities to support the Test and Evaluation Master Plan (TEMP) for IOT&E activities.	21.858	2.272	-
Accomplishments/Planned Programs Subtotals	33.709	2.272	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605456A / *PAC-3/MSE Missile*	**Project (Number/Name)** PA3 / *PAC-3/MSE Missile*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SSN C53101: *SSN C53101, MSE Missile*	532.605	414.946	423.201	-	423.201	459.040	497.009	529.839	520.513	Continuing	Continuing
• SSN C50016: *SSN C50016, Lower-Tier Air and Missile Defense (AMD)*	110.300	115.075	126.470	-	126.470	112.888	122.768	150.444	120.542	Continuing	Continuing
• PE 0205456: *PE 0205456, Proj EF9, System Integration and Test*	78.720	64.159	70.547	-	70.547	79.750	81.138	96.209	113.810	Continuing	Continuing
• PE 0604319A: *PE 0604319A, Proj DU3, IFPC2, (FY12 PE 0603305A IFPC II - Intercept)*	96.131	155.361	-	-	-	-	-	-	-	0	251.492
• SSN C62002: *SSN C62002, IFPC Inc 2-I Block 1 Missile*	-	-	-	-	-	73.552	123.106	186.840	146.300	Continuing	Continuing
• SSN C62001: *SSN C62001, IFPC Inc 2-I Block 1 System*	-	-	19.319	-	19.319	47.289	138.547	174.760	287.325	Continuing	Continuing
• PE 0604820A: *PE 0604820A, Proj E10, SENTINEL*	5.221	12.309	17.152	-	17.152	21.035	20.792	30.277	41.577	Continuing	Continuing
• PE 0605457A: *PE 0605457A, Proj S40 Army Integrated Air and Missile Defense (AIAMD)*	152.516	214.099	225.769	-	225.769	169.241	153.097	33.058	34.581	Continuing	Continuing
• SSN BZ5075: *SSN BZ5075, IAMD Battle Command System (IBCS)*	-	20.917	204.513	-	204.513	296.361	375.763	443.637	-	Continuing	Continuing
• PE 0604741A: *PE 0604741A, Proj 126,146,149, Air Defense C2I Eng Dev*	15.898	24.569	27.131	-	27.131	20.524	20.018	18.082	-	Continuing	Continuing
• SSN AD50700: *SSN AD50700; Air & Missle Defense Planning & Control Sys*	27.374	28.176	25.443	-	25.443	25.690	26.032	6.366	7.000	Continuing	Continuing
• PE 0202429A: *PE 0202429A Proj EP8 JLENS COCOM EXERCISE*	43.248	40.565	46.371	-	46.371	6.746	-	-	-	0	136.930

Remarks

This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605456A / *PAC-3/MSE Missile*	**Project (Number/Name)** PA3 / *PAC-3/MSE Missile*

D. Acquisition Strategy

The design objective of the PATRIOT system is to provide an element of an Integrated Air and Missile Defense System capable of being modified to cope with the evolving threat. This strategy minimizes technological risks and provides a means of enhancing system capability through planned upgrades of deployed systems. PAC-3 system development efforts further improve system capabilities against emerging and reactive threats. The PAC-3 Missile Program focuses on developing, fabricating and testing the high velocity, hit to kill, surface to air missile and associated ground support equipment to provide essential increases in battle space, accuracy, lethality and firepower to counter and destroy evolving air defense threats. The missile performance is demonstrated through a series of flight tests and modeling and simulation activities. The PAC-3 / MSE program evolves the PAC-3 system providing extended ranges, insensitive munitions enhancements, and greater logistical flexibility. The PAC-3 MSE will be fielded to U.S. PATRIOT units.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605456A / *PAC-3/MSE Missile*	Project (Number/Name) PA3 / *PAC-3/MSE Missile*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	Various : Huntsville, AL	4.109	-		-		-		-		-	0	4.109	4.109
PAC-3 Product Office	Various	Various : Huntsville, AL	12.028	1.000	Dec 2014	-		-		-		-	0	13.028	0
		Subtotal	16.137	1.000		-		-		-		-	0.000	17.137	4.109

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Integration	Various	Various : Huntsville, AL	49.581	-		-		-		-		-	0	49.581	49.573
MSE/PAC-3 Raytheon	Various	Raytheon : Waltham, Massachusetts	52.809	-		-		-		-		-	0	52.809	52.809
SETA Contracts	Various	Various : Huntsville, AL	12.648	-		-		-		-		-	0	12.648	12.640
		Subtotal	115.038	-		-		-		-		-	0.000	115.038	115.022

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Targets/Threat Simulators	Various	Various : Huntsville, AL	32.251	-		-		-		-		-	0	32.251	32.251
Modeling and Simulation	Various	Various : Huntsville, AL	7.904	-		-		-		-		-	0	7.904	7.904
Contractor T&E funding	Various	Various : Huntsville, AL / Dallas, TX	11.476	5.114	Dec 2014	-		-		-		-	0	16.590	24.185
Other T&E Funding	MIPR	Various : Holloman AFB, NM	27.067	6.295	Dec 2014	2.272	Dec 2015	-		-		-	0	35.634	36.338
Mobile Flight Mission Simulator	TBD	Raytheon : Massachusetts	21.500	-		-		-		-		-	0	21.500	21.500

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605456A / *PAC-3/MSE Missile*	Project (Number/Name) PA3 / *PAC-3/MSE Missile*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PDB 8 DT/OT	TBD	Various : Huntsville, AL	27.300	7.000	Dec 2015	-		-		-		-	0	34.300	9.900
U.S. Other Government Agencies (OGAs)	MIPR	Various : Huntsville, AL	24.049	3.000	Nov 2014	-		-		-		-	0	27.049	27.049
Missile Segment Enhancement (MSE) - Lockheed Martin Missiles and Fire Control (LMMFC)	C/CPIF	LMMFC Dallas, : Texas	74.238	11.300	Dec 2014	-		-		-		-	0	85.538	85.538
		Subtotal	225.785	32.709		2.272		-		-		-	0.000	260.766	244.665

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	356.960	33.709		2.272		-		-		-	0.000	392.941	363.796

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605456A / *PAC-3/MSE Missile*	**Project (Number/Name)** PA3 / *PAC-3/MSE Missile*

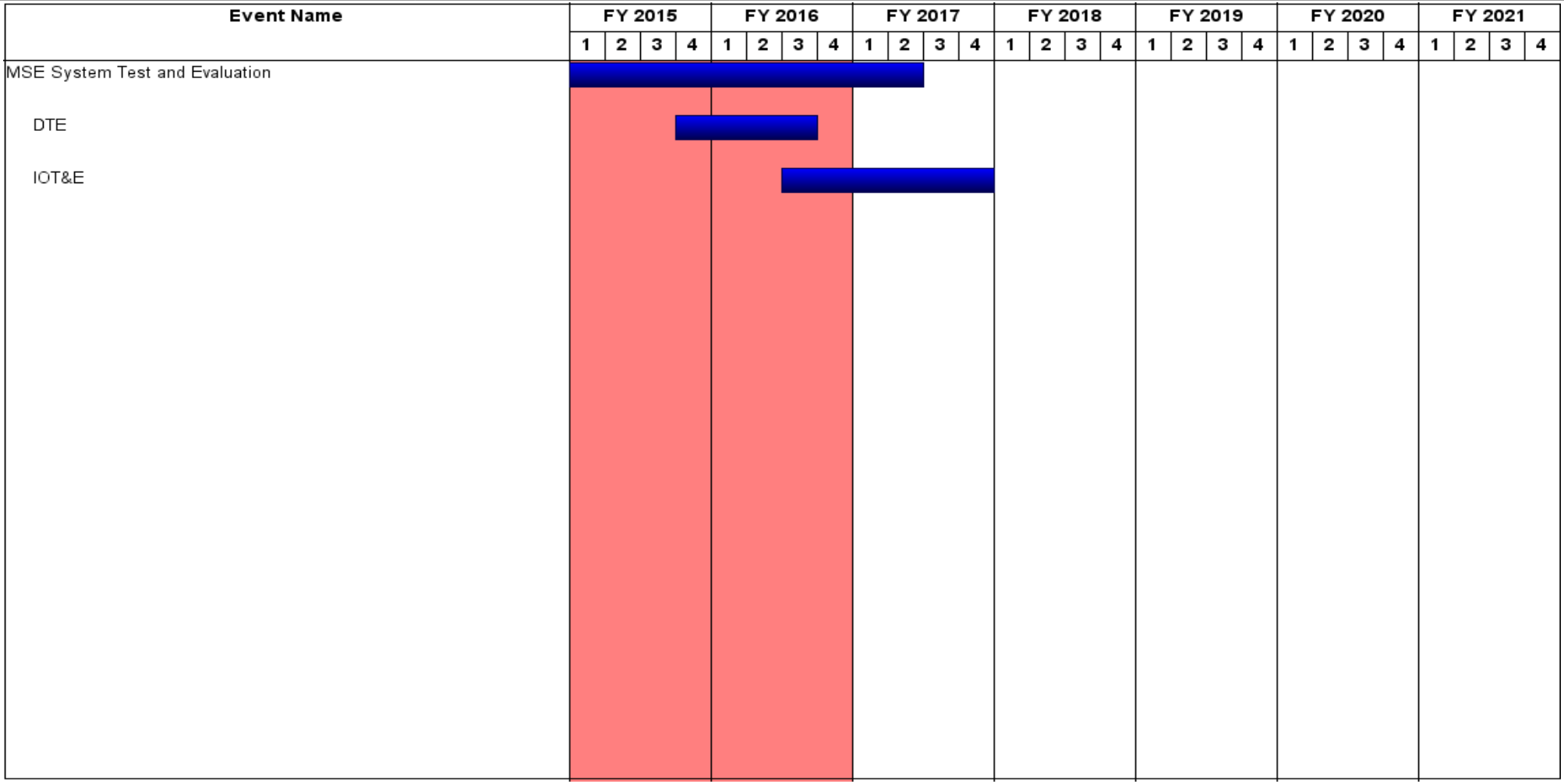

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605456A / *PAC-3/MSE Missile*	**Project (Number/Name)** PA3 / *PAC-3/MSE Missile*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MSE System Test and Evaluation	1	2014	2	2017
DTE	4	2015	3	2016
IOT&E	3	2016	4	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605457A *I Army Integrated Air and Missile Defense (AIAMD)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	147.250	222.075	252.811	-	252.811	169.070	152.942	32.914	34.447	Continuing	Continuing
S40: *Army Integrated Air and Missile Defense*	-	147.250	222.075	252.811	-	252.811	169.070	152.942	32.914	34.447	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Integrated Air and Missile Defense (AIAMD) program is a designated Major Defense Acquisition Program (MDAP).

The AIAMD program is a direct response to the U.S. Army Air and Missile Defense (AMD) Concept and Operational and Organizational (O&O) Plan for the Future Force, the AIAMD System of Systems (SoS) Capabilities Development Document (CDD) and the new Air and Missile Defense Task Force Concept of Operations (CONOPS). The AIAMD Program is uniquely structured to enable the development of an overarching SoS capability with all participating Air Defense Artillery (ADA) components functioning interdependently to provide total operational capabilities not achievable by the individual element systems. The AIAMD program achieves this objective by establishing the AIAMD architecture and developing (1) the IAMD Battle Command Systems (IBCS) Engagement Operations Center (EOC) that provides the common Mission Command capability, (2) the Integrated Fire Control Network (IFCN) capability for fire control connectivity and distributed operations, and (3) the common Plug and Fight (P&F) Kits that network enable multiple sensor components, weapon components, and the IBCS EOC.

The AIAMD Program will provide advanced capabilities to the Army and the soldier by allowing transformation to a network-centric system-of-systems capability (also referred to as "Plug and Fight") that integrates AMD sensors and weapons with the IBCS EOC. The AIAMD SoS architecture will enable extended range and non-line-of-sight engagements, to include joint kill chain engagements across the full spectrum of aerial threats, providing fire control quality data to the most appropriate weapon to complete the mission successfully. Further, it will mitigate the coverage gaps and the single points of failure that have plagued AMD defense design in the past. The AIAMD program will provide the user with the ability to train on a single command and control (C2) system that will result in overall training savings. The AIAMD program will also provide the Army with the ability to procure components that will build to established interfaces allowing them to "connect" to the IFCN alleviating the cost of procuring total system capabilities in the future.

Funding in FY17 will provide for Low Rate Initial Production (LRIP) Developmental Test phase activities, to include preparation and conduct of flight tests, and First Unit Equipped (FUE).

Fielding of the IBCS is the Army Air Defense Artillery User's number one priority. The AIAMD Program is on track to deliver the Initial Operational Capability (IOC) in FY18. The FY18 IOC will be delivered through fielding of the IBCS EOC-based AIAMD architecture including the IBCS EOC, Sentinel, and Patriot components connected via an IFCN, working in an integrated manner. Additional capabilities include the incorporation of IBCS functionality into Air Defense Airspace Management (ADAM) Cells, ADA Brigade Headquarters and Army Air and Missile Defense Command (AAMDC) Headquarters. Future additional capabilities include incorporation of Terminal High Altitude Air Defense (THAAD) batteries and Indirect Fire Protection Capability (IFPC) components into the AIAMD architecture.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605457A *I Army Integrated Air and Missile Defense (AIAMD)*

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	152.516	214.099	227.103	-	227.103
Current President's Budget	147.250	222.075	252.811	-	252.811
Total Adjustments	-5.266	7.976	25.708	-	25.708
• Congressional General Reductions	-	-0.024			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	8.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.266	-			
• Adjustments to Budget Years	-	-	25.708	-	25.708

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2015	FY 2016
Project: S40: *Army Integrated Air and Missile Defense*		
Congressional Add: *Product Development - Cyber Security*	10.000	8.000
Congressional Add Subtotals for Project: S40	10.000	8.000
Congressional Add Totals for all Projects	10.000	8.000

Change Summary Explanation

FY17 Base funding increase in the amount of $25.708M provides necessary resources for the testing and integration program.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	Project (Number/Name) S40 / *Army Integrated Air and Missile Defense*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
S40: *Army Integrated Air and Missile Defense*	-	147.250	222.075	252.811	-	252.811	169.070	152.942	32.914	34.447	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Army Integrated Air and Missile Defense (AIAMD) Program is a direct response to the U.S. Army Air and Missile Defense (AMD) Concept and Operational and Organizational (O&O) Plan for the Future Force, the AIAMD System of Systems (SoS) Capabilities Development Document (CDD) and the new Air and Missile Defense Task Force Concept of Operations (CONOPS). The AIAMD Program is uniquely structured to enable the development of an overarching SoS capability with all participating Air Defense Artillery (ADA) components functioning interdependently to provide total operational capabilities not achievable by the individual element systems. The AIAMD program achieves this objective by establishing the AIAMD architecture and developing (1) the IAMD Battle Command Systems (IBCS) Engagement Operations Center (EOC) that provides the common Mission Command capability, (2) the Integrated Fire Control Network (IFCN) capability for fire control connectivity and distributed operations, and (3) the common Plug and Fight (P&F) Kits that network enable multiple sensor components, weapon components, and the IBCS EOC.

The AIAMD Program will provide advanced capabilities to the Army and the soldier by allowing transformation to a network-centric system-of-systems capability (also referred to as "Plug and Fight") that integrates AMD sensors and weapons with the IBCS EOC. The AIAMD SoS architecture will enable extended range and non-line-of-sight engagements, to include joint kill chain engagements across the full spectrum of aerial threats, providing fire control quality data to the most appropriate weapon to complete the mission successfully. Further, it will mitigate the coverage gaps and the single points of failure that have plagued AMD defense design in the past. The AIAMD program will provide the user with the ability to train on a single command and control (C2) system that will result in overall training savings. The AIAMD program will also provide the Army with the ability to procure components that will build to established interfaces allowing them to "connect" to the IFCN alleviating the cost of procuring total system capabilities in the future.

Funding in FY17 will provide for Low Rate Initial Production (LRIP) Developmental Test phase activities, to include preparation and conduct of flight tests, and First Unit Equipped (FUE).

Fielding of the IBCS is the Army Air Defense Artillery User's number one priority. The AIAMD Program is on track to deliver the Initial Operational Capability (IOC) in FY18. The FY18 IOC will be delivered through fielding of the IBCS EOC-based AIAMD architecture including the IBCS EOC, Sentinel, and Patriot components connected via an IFCN, working in an integrated manner. Additional capabilities include the incorporation of IBCS functionality into Air Defense Airspace Management (ADAM) Cells, ADA Brigade Headquarters and Army Air and Missile Defense Command (AAMDC) Headquarters. Future additional capabilities include incorporation of Terminal High Altitude Air Defense (THAAD) batteries and Indirect Fire Protection Capability (IFPC)components into the AIAMD architecture.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Product Development ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Product development in support of EMD Flight Test activities and risk reduction test. ***FY 2016 Plans:*** Product development in support of EMD Flight Test and Limited User Test (LUT) activities, MS C decision, and ongoing risk reduction test ***FY 2017 Base Plans:*** Product development in support of Low Rate Initial Production (LRIP) Developmental Test activities, First Unit Equipped (FUE), and ongoing risk reduction test.	104.386	154.308	184.505	-	184.505
Title: Government Program Management ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Government Program Management in support of developing the P&F kits, IFCN, and Modeling and Simulation. Other contracts and OGAs support of the EMD phase. Risk reduction test. ***FY 2016 Plans:*** Government Program Management in support of developing the P&F kits, IFCN, and Modeling and Simulation. Other contracts and OGAs in support of the EMD Developmental Test activities, preparation and conduct of flight tests, MS C decision, and ongoing risk reduction test. ***FY 2017 Base Plans:*** Government Program Management in support of developing the P&F kits, IFCN, and Modeling and Simulation. Other contracts and OGAs in support of the EMD Developmental Test activities, preparation and conduct of flight tests, and ongoing risk reduction test.	4.792	4.568	4.685	-	4.685
Title: Test and Evaluation ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:***	28.072	55.199	63.621	-	63.621

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Provides for Modeling and Simulation, Joint Interoperability Test Support, Army Evaluation Center/ Developmental Test Command/Operational Test Command support and White Sands Missile Range Test Support for EMD Developmental Test. Risk reduction test. Target preparation. ***FY 2016 Plans:*** Provides for Modeling and Simulation, Joint Interoperability Test Support, Army Evaluation Center/ Developmental Test Command/Operational Test Command support and White Sands Missile Range Test Support for EMD Developmental Test activities including preparation and conduct of flight tests. Also provides for Customer Test, Limited User Test/Hardware in the Loop, ongoing risk reduction test, and target preparation. ***FY 2017 Base Plans:*** Provides for Modeling and Simulation, Joint Interoperability Test Support, Army Evaluation Center/ Developmental Test Command/Operational Test Command support and White Sands Missile Range Test Support for LRIP Developmental Test activities including preparation and conduct of flight tests.					
Accomplishments/Planned Programs Subtotals	137.250	214.075	252.811	-	252.811

	FY 2015	FY 2016
Congressional Add: Product Development - Cyber Security	10.000	8.000
FY 2015 Accomplishments: Counter cyber vulnerabilities		
FY 2016 Plans: Cybersecurity research		
Congressional Adds Subtotals	10.000	8.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE 0605456A, Project PA3: *PE 0605456A, Project PA3, PAC- 3/MSE Missile*	33.709	2.272	-	-	-	-	-	-	-	0	35.981
• SSN C53101: *SSN C53101, MSE Missile*	532.605	514.946	423.201	-	423.201	459.040	497.009	529.839	520.513	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PE 0205456, Project EF9: *PE 0205456, Project EF9, System Integration and Test*	78.720	64.159	69.417	-	69.417	79.562	80.962	96.042	113.641	Continuing	Continuing
• PE 0604114A, Project EX2: *PE 0604114A, Project EX2, Lower Tier Air and Missile Defense (LTAMD) Capability*	-	-	35.132	-	35.132	93.208	78.820	87.128	84.826	Continuing	Continuing
• SSN C50016: *SSN C50016, Lower Tier Air and Missile Defense (AMD)*	110.300	115.075	126.470	-	126.470	112.888	122.768	150.444	120.542	Continuing	Continuing
• PE 0202429A, Project EP8: *PE 0202429A, Project EP8, JLENS COCOM EXERCISE*	43.248	10.565	45.482	-	45.482	6.746	-	-	-	0	106.041
• PE 0604319A, Proj DU3: *PE 0604319A, Proj DU3, IFPC2 (FY12 PE0603305A IFPC II- Intercept)*	92.475	155.361	-	-	-	40.003	80.004	120.004	120.006	Continuing	Continuing
• PE 0605052A, Project EY7: *PE 0605052A, Project EY7, IFPC Increment 2 - Block 1*	-	-	83.995	-	83.995	63.370	43.204	109.323	133.326	Continuing	Continuing
• SSN C62001: *SSN C62001, IFPC Inc 2-I Block 1 System*	-	-	19.920	-	19.920	47.289	138.547	174.760	287.325	Continuing	Continuing
• SSN C62002: *SSN C62002, IFPC INC 2-I Block 1 System*	-	-	-	-	-	73.552	123.106	186.840	146.300	Continuing	Continuing
• PE 0604820A, Proj E10: *PE 0604820A, Proj E10, SENTINEL*	5.022	12.309	15.983	-	15.983	20.844	20.612	30.106	41.402	Continuing	Continuing
• SSN BZ5075: *SSN BZ5075, Army IAMD Battle Command System (IBCS)*	-	20.917	204.969	-	204.969	287.220	372.916	440.567	439.780	Continuing	Continuing
• PE 0604741A, Proj 146, 149: *PE 0604741A, Proj 146, 149, Air Defense C2I Eng Dev*	15.294	34.569	36.256	-	36.256	20.141	19.658	17.738	11.651	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SSN AD50700: *SSN AD50700, AIR & MSL Defense Planning & Control Sys*	27.374	28.176	54.376	69.958	124.334	17.005	17.960	6.366	6.951	Continuing	Continuing

Remarks

This program is an integral part of the Army Integrated Air and Missile Defense (AIAMD) architecture. It provides for development of a common Mission Command (MC) through an open architecture approach allowing for integration of Air Defense Artillery (ADA) components as they become available. This approach enables the AIAMD program to pursue its baseline program independent of fluctuation of other programs.

D. Acquisition Strategy

The AIAMD acquisition strategy is to deliver an Initial Operational Capability (IOC) in FY18. The capabilities are delivered through the fielding of the IAMD Battle Command System (IBCS) Engagement Operations Center (EOC)-based AIAMD architecture including the IBCS EOC, Sentinel, and Patriot (through a Radar Interface Unit (RIU)) components connected via an Integrated Fire Control Network (IFCN), working in an integrated manner. Additional capabilities include the incorporation of IBCS functionality into Air Defense Airspace Management (ADAM) Cells, ADA Brigade Headquarters and Army Air and Missile Defense Command (AAMDC) Headquarters. Future additional capabilities include incorporation of Terminal High Altitude Area Defense (THAAD) batteries and other Army and Joint net-centric architectures to ensure compatibility.

Key principles of the AIAMD acquisition approach are the following:
- Migrate from system-based acquisition to component-based acquisition
- Use system-of-systems acquisition approach with collaboration among AIAMD, PEO MS, PEO C3T, and Brigade Combat Team (BCT) Modernization Component Project Offices, Missile Defense Agency (MDA), and other Service Project Offices to network enable weapons and sensor components
- Develop and procure common Army IAMD Battle Command System (IBCS) Engagement Operations Center (EOC) that replaces seven weapon system unique Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) components
- Establish product lines used to evaluate and select, modify and integrate modular open systems hardware (HW) and software (SW) common configuration items
- Conduct architecture-based System Engineering, Integration and Test (SEI&T) activities for an incremental fielded configuration of the AIAMD Integrated Fire Control (IFC) Network-compatible IBCS EOC, weapons and sensor system components

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	Project (Number/Name) S40 / *Army Integrated Air and Missile Defense*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	TBD	Various : Huntsville, AL	18.024	4.792		4.568		4.685		-		4.685	Continuing	Continuing	Continuing
		Subtotal	18.024	4.792		4.568		4.685		-		4.685	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Space and Missile Defense (ASMD) System of Systems (SOS) Hardware-in-the- Loop Testbed	C/CPFF	Various : Huntsville, AL and multiple other locations	17.697	-		-		-		-		-	0	17.697	0
AIAMD System Engineering & Integration	C/CPFF	Various : Huntsville, AL	75.480	22.507		26.716		28.115		-		28.115	Continuing	Continuing	Continuing
IAMD Engineering Manufacturing and Development	C/CPIF	Northrop Grumman, Raytheon and Other : Huntsville, AL and Various other locations	801.037	69.253		111.094		137.142		-		137.142	Continuing	Continuing	Continuing
Government Furnished Equipment	TBD	Various : Multiple	14.393	2.017		2.079		3.223		-		3.223	Continuing	Continuing	Continuing
Government Systems Engineering and Logistics	TBD	Various : Huntsville, AL	32.784	10.609		14.419		16.025		-		16.025	Continuing	Continuing	Continuing
Advanced Electronic Protection Enhancement (AEPE)	TBD	Various : TBD	21.000	-		-		-		-		-	0	21.000	0
Cyber Security	TBD	Huntsville, AL : TBD	5.000	10.000		8.000		-		-		-	0	23.000	0
		Subtotal	967.391	114.386		162.308		184.505		-		184.505	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	Project (Number/Name) S40 / *Army Integrated Air and Missile Defense*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Evaluation Center/ Developmental Test Command/Operational Test Command	TBD	Various : Multiple Locations	8.285	2.619		17.143		20.173		-		20.173	Continuing	Continuing	Continuing
Modeling & Sim/Joint Interoperability Test Spt	MIPR	SED : Huntsville, AL	92.123	14.354		27.014		32.163		-		32.163	Continuing	Continuing	Continuing
Range Support	TBD	WSMR : White Sands, NM	14.984	11.099		11.042		11.285		-		11.285	Continuing	Continuing	Continuing
		Subtotal	115.392	28.072		55.199		63.621		-		63.621	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,100.807	147.250		222.075		252.811		-		252.811	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

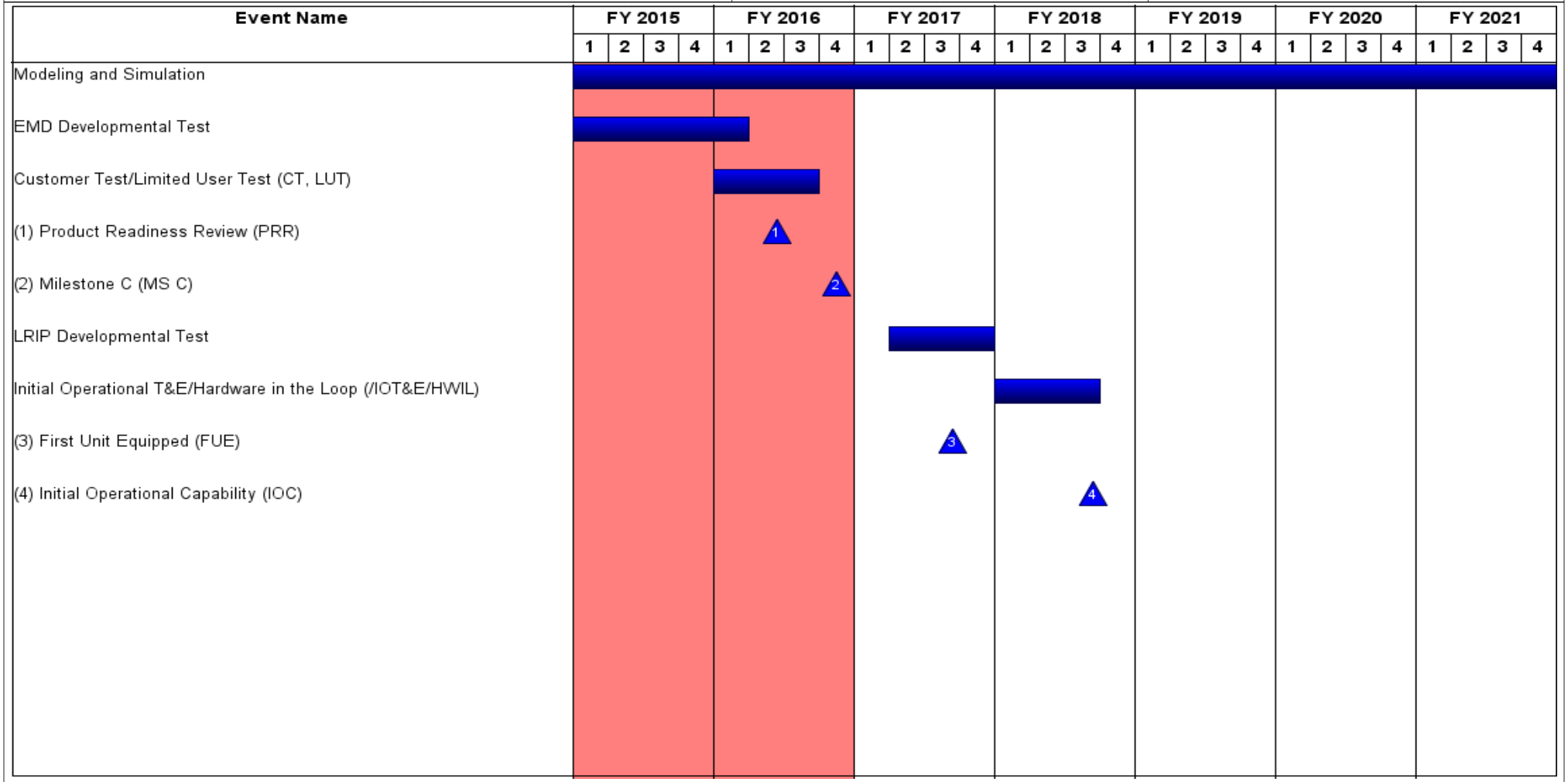

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Modeling and Simulation	1	2013	4	2021
EMD Developmental Test	4	2014	1	2016
Customer Test/Limited User Test (CT, LUT)	1	2016	3	2016
Product Readiness Review (PRR)	2	2016	2	2016
Milestone C (MS C)	4	2016	4	2016
LRIP Developmental Test	2	2017	4	2017
Initial Operational T&E/Hardware in the Loop (/IOT&E/HWIL)	1	2018	3	2018
First Unit Equipped (FUE)	3	2017	3	2017
Initial Operational Capability (IOC)	3	2018	3	2018

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605625A *I Manned Ground Vehicle*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	47.265	39.247	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	86.512
FC8: *BCT Ground Combat Vehicle*	-	47.265	39.247	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	86.512

A. Mission Description and Budget Item Justification

Fiscal constraints and competing demands during budget uncertainty forced the Army to make hard choices between near term readiness and modernizing current systems to meet near term capability gaps and developing the Ground Combat Vehicle (GCV). The Army concluded it was not the right time to develop the GCV and ended the program upon completion of the Technology Development (TD) phase in June 2014. The Army has benefited from investment in the GCV program and will use the insights gained to inform technology maturation efforts in support of a strategy for the Army's Future Fighting Vehicle (FFV) modernization program.

Although the GCV program ended at the conclusion of the TD phase, the Army still maintains their requirement to fully modernize their fleet of ground combat vehicles. The FFV program will continue to leverage information and insights gained from the GCV TD phase to allow the Army to make better informed decisions in the future regarding their Combat Vehicle Portfolio. The main goals of the FFV program are to conduct technical, cost, and risk assessments against selected capability trades and future technologies for a FFV system.

Funding is not provided for the FFV Program in FY 2017.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	49.134	49.247	0.000	-	0.000
Current President's Budget	47.265	39.247	0.000	-	0.000
Total Adjustments	-1.869	-10.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.869	-			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605625A / *Manned Ground Vehicle*	Project (Number/Name) FC8 / *BCT Ground Combat Vehicle*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
FC8: *BCT Ground Combat Vehicle*	-	47.265	39.247	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	86.512
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Fiscal constraints and competing demands during budget uncertainty forced the Army to make hard choices between near term readiness and modernizing current systems to meet near term capability gaps and developing the Ground Combat Vehicle (GCV). The Army concluded it was not the right time to develop the GCV and ended the program upon completion of the Technology Development (TD) phase in June 2014. The Army has benefited from investment in the GCV program and will use the insights gained to inform technology maturation efforts in support of a strategy for the Army's Future Fighting Vehicle (FFV) modernization program.

Although the GCV program ended at the conclusion of the TD phase, the Army still maintains their requirement to fully modernize their fleet of ground combat vehicles. The FFV program will continue to leverage information and insights gained from the GCV TD phase to allow the Army to make better informed decisions in the future regarding their Combat Vehicle Portfolio. The main goals of the FFV program are to conduct technical, cost, and risk assessments against selected capability trades and future technologies for a FFV system.

Funding is not provided for the FFV Program in FY 2017.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Government System Engineering & Program Management	9.134	9.247	-
Description: Provides for basic Government oversight of the Ground Combat Vehicle (GCV) and Future Fighting Vehicle (FFV) programs. Includes funding for government personnel (labor, travel, training, supplies) and other support (other government agencies, support contractors, automated data processing, communications, and equipment).			
FY 2015 Accomplishments: The Project Management team was significantly scaled back, but will continued to provide oversight to planned contract efforts. The contract efforts were focused on advanced concept development, technology risk reduction, and integration of S&T developed components. The Government Future Fighting Vehicle (FFV) team lead, integrated, and collaborated across technical and analytical efforts with the S&T and Requirements communities.			
FY 2016 Plans: The Project Management team will continue to provide oversight to planned contract efforts. The contract efforts will be focused on advanced concept development, technology risk reduction, and integration of S&T developed components. The Government			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** FC8 / *BCT Ground Combat Vehicle*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Future Fighting Vehicle (FFV) team will also lead, integrate, and collaborate across technical and analytical efforts with the S&T and Requirements communities.			
Title: Contractor Systems Engineering/Program Management ***Description:*** Provides for contractor basic development, engineering, and management for the GCV and FFV prime contracts, less prototype hardware and software development (which are captured in the following sections). Includes material consumed in support of component level engineering efforts. ***FY 2015 Accomplishments:*** Contractors conducted concept development work and subsystem risk reduction, in collaboration with planned S&T efforts. Concept development effort initially evolved from the design concepts developed under the GCV TD phase resulted in development and delivery of concept data packages that include: 3 dimensional/Computer Aided Design (CAD) model representations, bill of materials, product structure / weight tape / power and energy balance, and cost estimate. In addition, a variety of technical and operational analyses and trades were completed. ***FY 2016 Plans:*** Contractors will conduct concept development work and subsystem risk reduction, in collaboration with planned S&T efforts. Concept development effort will initially evolve from the design concepts developed under the GCV TD phase and will result in development and delivery of concept data packages that include: 3 dimensional/Computer Aided Design (CAD) model representations, bill of materials, product structure / weight tape / power and energy balance, and cost estimate. In addition, a variety of technical and operational analyses and trades are expected to be completed.	38.131	30.000	-
Accomplishments/Planned Programs Subtotals	47.265	39.247	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Army will continue to engage with the prime contractors from the Ground Combat Vehicle (GCV) Technology Development (TD) Phase, to conduct system level trade studies and integrated assessments using their designs relative to a new Future Fighting Vehicle (FFV). In addition, the contractors will perform design excursions based on the Bradley Fighting Vehicle. The data provided will be utilized by the Army to determine if the acquisition of a new FFV is the preferred choice over a modification to existing Fighting Vehicles.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** FC8 / *BCT Ground Combat Vehicle*

For the FY 2016 Budget, the Army will continue combat vehicle concept development and synchronization with planned Government S&T investments which will eventually form the foundation for a future fighting vehicle program. The Project Management Office is assessing the full impact of this decision and will ultimately formalize a future fighting vehicle acquisition strategy.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605625A / *Manned Ground Vehicle*	Project (Number/Name) FC8 / *BCT Ground Combat Vehicle*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor System Engineering and Prog. Mgt GCV/FFV	SS/CPFF	BAE / GDLS, Sterling Heights, MI : .	1,052.769	38.131	May 2015	30.000	Jan 2016	-		-		-	Continuing	Continuing	Continuing
Contractor Prototypes GCV	SS/CPFF	BAE / GDLS, Sterling Heights, MI : .	65.659	-		-		-		-		-	Continuing	Continuing	Continuing
Contractor Software GCV	SS/CPFF	BAE / GDLS, Sterling Heights, MI : .	82.478	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	1,200.906	38.131		30.000		-		-		-	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Engineering and Prog. Mgt GCV/FFV	Various	PM Ground Combat Vehicle : Warren, MI	221.872	9.134	Oct 2014	-		-		-		-	Continuing	Continuing	Continuing
Government System Engineering and Prog Mgt FFV	Various	PM FFV : Various Locations	0.000	-		9.247	Nov 2015	-		-		-	0	9.247	0
Assessment of Selected Non-developmental Vehicles (ASNV) GCV	Various	Various Locations : Various Locations	38.304	-		-		-		-		-	0	38.304	0
		Subtotal	260.176	9.134		9.247		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Tests & Modeling & Simulation GCV	Various	PM Ground Combat Vehicle : Warren, MI	31.110	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	31.110	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605625A / *Manned Ground Vehicle*	Project (Number/Name) FC8 / *BCT Ground Combat Vehicle*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,492.192	47.265		39.247		-		-		-	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** FC8 / *BCT Ground Combat Vehicle*

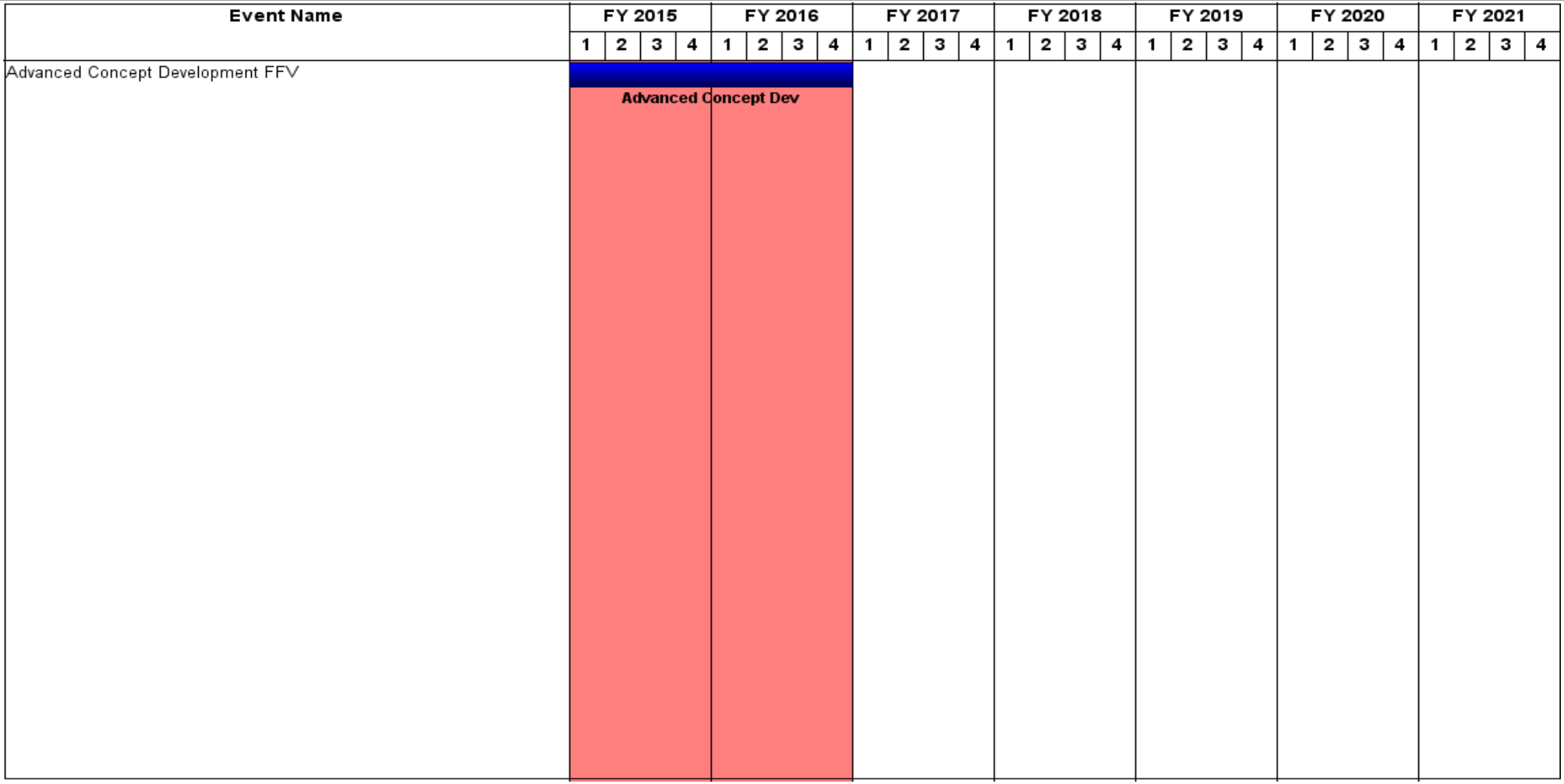

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** FC8 / *BCT Ground Combat Vehicle*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Advanced Concept Development FFV	1	2015	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605626A / *Aerial Common Sensor*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	17.748	0.002	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.750
AC5: *Enhanced Medium Alt Recon Surv Sys*	-	17.748	0.002	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.750

Note

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) Research, Development, Test, and Evaluation (RDTE) funding line contains funding for Airborne Reconnaissance Low - Enhanced (ARL-E) in Fiscal Year (FY) 2015 ($10.174 million). The remaining funds will go towards Interim Contractor Logistics Support (ICLS) and test support for the EMARSS Variants: EMARSS-G (Constant Hawk & Tactical Operations (TACOP) Light Imaging Detection and Ranging (LiDAR)); EMARSS-V (Vehicle and Dismounted Exploitation Radar (VaDER)); EMARSS-M (Liberty Project Aircraft (LPA)); and EMARSS-S Engineering and Manufacturing Development (EMD) systems.

For FY16 and beyond, the EMARSS RDTE funding line continues on 375206EH3.
For FY16 and beyond, the ARL-E RDTE funding line continues on 375206EH5.

A. Mission Description and Budget Item Justification

The EMARSS is the Army's next generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. EMARSS provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS aircraft will be assigned to the U.S. Army Intelligence and Security Command's (INSCOM) Aerial Exploitation Battalions (AEB). EMARSS is an improvement over the existing Medium Altitude Reconnaissance and Surveillance System Quick Reaction Capability (MARSS QRC) in that it hosts an on board Distributed Common Ground System - Army (DCGS-A) capability, improved satellite communications, improved aircraft performance, and life cycle logistics sustainment capability.

EMARSS will consist of a commercial derivative aircraft equipped with an Electro-optical/Infrared (EO/IR) sensor with Full Motion Video (FMV), a Communications Intelligence (COMINT) collection system, an Aerial Precision Geolocation (APG) system, tactical line-of-site (LOS) and beyond line-of-site (BLOS) communications suite, two DCGS-A enabled operator workstations and a self-protection suite. EMARSS is built to allow future capabilities to be integrated on platform with the addition of a third carry-on workstation.

EMARSS will operate in direct support of tactical missions. EMARSS, integrating elements of the DCGS-A, will provide efficient response to Combat Forces with Intelligence, Surveillance and Reconnaissance (ISR) tasking.

The EMARSS funding line contains funding for the ARL-E program. ARL-E supports the Aerial ISR 2020 Strategy which recommended replacement of the current Airborne Reconnaissance Low Multifunction (ARL-M) and migrates the current ARL sensors plus new niche sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. ARL-E procures the hardware, software, and infrastructure to rapidly install sensors which support a rapid plug and play, quick connect/ disconnect, mounting system to allow the installation of various combinations of sensor-types in support of a wide-range of theater operations. The sensor suite will

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605626A *I Aerial Common Sensor*

consist of a COMINT subsystem capable of supporting theater net centric geo-location efforts, High Definition Full Motion Video (FMV); Improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar capability and updated mission workstations, as well as radio and data/communications architecture. ARL-E will leverage existing sensors as well as integrating and installing niche sensors to augment current capabilities. Niche capabilities include Wide Area Aerial Surveillance (WAAS), LIDAR, and Hyper Spectral Imaging (HSI) sensors.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	17.748	0.002	0.000	-	0.000
Current President's Budget	17.748	0.002	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605626A / *Aerial Common Sensor*	Project (Number/Name) AC5 / *Enhanced Medium Alt Recon Surv Sys*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
AC5: *Enhanced Medium Alt Recon Surv Sys*	-	17.748	0.002	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.750
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Enhanced Medium Altitude Reconnaissance and Surveillance System (EMARSS) Research, Development, Test, and Evaluation (RDTE) funding line contains funding for Airborne Reconnaissance Low - Enhanced (ARL-E) in Fiscal Year (FY) 2015 ($10.174 million). The remaining funds will go towards Interim Contractor Logistics Support (ICLS) and test support for the EMARSS Variants: EMARSS-G (Constant Hawk & Tactical Operations (TACOP) Light Imaging Detection and Ranging (LiDAR)); EMARSS-V (Vehicle and Dismounted Exploitation Radar (VaDER)); EMARSS-M (Liberty Project Aircraft (LPA)); and EMARSS-S Engineering and Manufacturing Development (EMD) systems.

For FY16 and beyond, the EMARSS RDTE funding line continues on 375206EH3.
For FY16 and beyond, the ARL-E RDTE funding line continues on 375206EH5.

A. Mission Description and Budget Item Justification

The EMARSS is the Army's next generation C-12 based, direct support, manned airborne intelligence collection, processing, and targeting support system. EMARSS provides a persistent capability to detect, locate, classify/identify, and track surface targets with a high degree of timeliness and accuracy. EMARSS aircraft will be assigned to the U.S. Army Intelligence and Security Command's (INSCOM) Aerial Exploitation Battalions (AEB). EMARSS is an improvement over the existing Medium Altitude Reconnaissance and Surveillance System Quick Reaction Capability (MARSS QRC) in that it hosts an on board Distributed Common Ground System - Army (DCGS-A) capability, improved satellite communications, improved aircraft performance, and life cycle logistics sustainment capability.

EMARSS Payloads will consist of Mission Equipment Packages (MEP) and Processing Exploitation & Dissemination commercial derivative equipment such as, an Electro-optical/Infrared (EO/IR) sensor with Full Motion Video (FMV), a Communications Intelligence (COMINT) collection system, an Aerial Precision Geolocation (APG) system, tactical line-of-site (LOS) and beyond line-of-site (BLOS) communications suite, two DCGS-A enabled operator workstations and a self-protection suite. Payloads integrated on platforms will include: niche capabilities such as Wide Area Aerial Surveillance (WAAS), LiDAR and improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar capability.

EMARSS will operate in direct support of tactical missions. EMARSS, integrating elements of the DCGS-A, will provide provide a near real-time response to Combat Forces with Intelligence, Surveillance and Reconnaissance (ISR) tasking.

The FY 2015 EMARSS funding line contains $10.174 million for the ARL-E program. ARL-E supports the Aerial ISR 2020 Strategy which recommended replacement of the current Airborne Reconnaissance Low Multifunction (ARL-M) and migrates the current ARL sensors plus new niche sensors to meet the ARL-E Capabilities Production Document (CPD) requirements. ARL-E procures the hardware, software, and infrastructure to rapidly install sensors which support a rapid plug and play,

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quick connect/disconnect, mounting system to allow the installation of various combinations of sensor-types in support of a wide-range of theater operations. The sensor suite will consist of a COMINT subsystem capable of supporting theater net centric geo-location efforts, High Definition FMV; Improved Synthetic Aperture Radar / Moving Target Indicator (SAR/MTI) radar capability and updated mission workstations, as well as radio and data/communications architecture. ARL-E will leverage existing sensors as well as integrating and installing niche sensors to augment current capabilities. Niche capabilities include WAAS, LiDAR, and Hyper Spectral Imaging (HSI) sensors.

FY 2016 RDTE funding in the amount of $0.002 million provides Interim Contractor Logistical Support (ICLS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: EMARSS - Product Development ***Description:*** Funding is provided for the following efforts: ***FY 2015 Accomplishments:*** EMARSS RDTE funds Sensor Engineering Change Proposals (ECPs) and contractor system support. Partially funds an ICLS capability to support testing. ***FY 2016 Plans:*** Partially funds an ICLS capability.	5.474	0.002	-
Title: Support Costs ***Description:*** Support costs for matrix government, matrix contractor and Program Management (PM) Fixed Wing. ***FY 2015 Accomplishments:*** Support costs for matrix government, matrix contractor and PM Fixed Wing.	0.800	-	-
Title: Program Management Support ***Description:*** Funding is provided for the following effort: ***FY 2015 Accomplishments:*** Continues Program Management Office (PMO) support and travel, Systems Engineering and Technical Assistance (SETA) and MITRE support.	1.300	-	-
Title: ARL-E - Product Development ***Description:*** ARL-E RDTE in EMARSS funding line until new RDTE line can be established. ***FY 2015 Accomplishments:***	10.174	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
ARL-E RDTE funds the development of a Long Range Radar prototype for ARL-E.			
Accomplishments/Planned Programs Subtotals	17.748	0.002	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Aerial Common Sensor (ACS): *EMARSS - Aircraft Procurement (A02005)*	165.890	99.500	-	-	-	-	-	-	-	0	265.390
• EMARSS MEP/PED: *EMARSS Payloads (AZ2054)*	-	20.570	13.316	-	13.316	3.305	21.294	4.452	-	0	62.937
• ARL Mod: *ARL Mods (AZ2050)*	131.892	68.540	52.400	-	52.400	53.778	7.668	2.679	-	0	316.957

Remarks

Aerial Common Sensor (ACS) - A02005 - FY 2015 Base procurement dollars in the amount of $165.890 million supports the modification and conversion of the balance of QRC systems redeploying out of Afghanistan to meet the EMARSS CPD.

FY 2014 A02005 Oversea Contingency Operations (OCO) in the amount of $28 million procured one EMARSS-V.

For FY 2016 and beyond, the EMARSS Aviation Procurement - Army (APA) funding line continues from A02005 and splits between Project Manager Sensors - Aerial Intelligence (PM SAI) AZ2054 EMARSS Payloads and Project Manager Fixed Wing (PM FW) A02112 EMARSS Special Electronic Mission Aircraft (SEMA). Also in FY 2016 the EMARSS Payloads AZ2054 line is established/separated from ARL Mod AZ2050. Separate funding lines support the Army Acquisition Executive's directive, codified in the October 28, 2011 memorandum, to assign overall acquisition lead for manned airborne intelligence systems to Program Executive Officer for Aviation PEO-AVN); and overall sensor,processing, exploitation, and dissemination responsibilities to Program Executive Officer or Intelligence, Electronic Warfare, and Sensors (PEO-IEWS).

D. Acquisition Strategy

EMARSS is a Program of Record based on an Army G-3/5/7 Directed Requirement (DR) signed 11 December 2009. The program entered the acquisition process in the EMD phase with a 1QFY11 contract award that was competitively awarded to a single contractor. Program completed System Design Review in 1QFY12 and began modification and integration of the aircraft in 2QFY12. Program currently has an Army validated CPD and a successful Milestone C.

ARL-E portion, in the amount of $10.174 million, funds the engineering, manufacturing and development of a Long Range radar prototype to replace the current ARL Phoenix Eye to meet requirement for increased performance for ARL-E.

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E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	Various	PM SAI : Aberdeen Proving Ground, MD	12.053	0.500		-		-		-		-	0	12.553	0
SETA Support	C/CPFF	PM SAI : Aberdeen Proving Ground, MD	6.060	0.400		-		-		-		-	0	6.460	0
MITRE - FFRDC Support	C/CPFF	PM SAI : Aberdeen Proving Ground, MD	3.933	0.400		-		-		-		-	0	4.333	0
		Subtotal	22.046	1.300		-		-		-		-	0.000	23.346	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMARSS EMD (#5 & #6 green ACFT purchase)	C/CPIF	Boeing Company : Ridley Park, PA	72.438	-		-		-		-		-	0	72.438	0
Request for Equitable Adjustment (REA)	C/FP	Boeing Company : Ridley Park, PA	7.085	-		-		-		-		-	0	7.085	0
Prime Contractor Systems Support	C/CPFF	Boeing Company : Ridley Park, PA	22.712	3.736		-		-		-		-	0	26.448	0
Engineering Change Proposals (ECP) for Sensors	C/CPIF	Boeing Company : Ridley Park, PA	12.966	1.738		-		-		-		-	0	14.704	0
Sensors acquisition	SS/FFP	BAE Systems : Nashua, NH	6.351	-		-		-		-		-	0	6.351	0
EMD Contract Cost Growth	Allot	Boeing Company : Ridley Park, PA	19.600	-		-		-		-		-	0	19.600	0
EMARSS - EMD 5 (currently held for potential REAs)	C/CPIF	Boeing Company : Ridley Park, PA	20.000	-		-		-		-		-	0	20.000	0
DCGS-A & Orion S/W processing on board	Various	Various : Various	6.740	-		-		-		-		-	0	6.740	0
ARL-E - Radar Development	C/TBD	TBD : TBD	0.000	10.174	Jun 2015	-		-		-		-	0	10.174	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	167.892	15.648		-		-		-		-	0.000	183.540	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Government	MIPR	Various : Various	15.387	0.400		-		-		-		-	0	15.787	0
Matrix Contractor Support	Various	Various : Various	3.313	0.400		-		-		-		-	0	3.713	0
		Subtotal	18.700	0.800		-		-		-		-	0.000	19.500	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government DT/OT, LUT	Various	Various : Various	11.760	-		0.002		-		-		-	0	11.762	0
Contractor Test (CT/DT)	C/CPIF	Various : Various	0.390	-		-		-		-		-	0	0.390	0
Test Flight Ranges	Various	Various : Various	7.517	-		-		-		-		-	0	7.517	0
Forward Operational Assessment (FOA)	MIPR	Various : Various	0.124	-		-		-		-		-	0	0.124	0
Initial Operational Test and Evaluation (IOT&E)	MIPR	Various : Various	1.000	-		-		-		-		-	0	1.000	0
Joint Test & Integration Facility (JTIF)	Various	Various : various	11.771	-		-		-		-		-	0	11.771	0
		Subtotal	32.562	-		0.002		-		-		-	0.000	32.564	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	241.200	17.748		0.002		-		-		-	0.000	258.950	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
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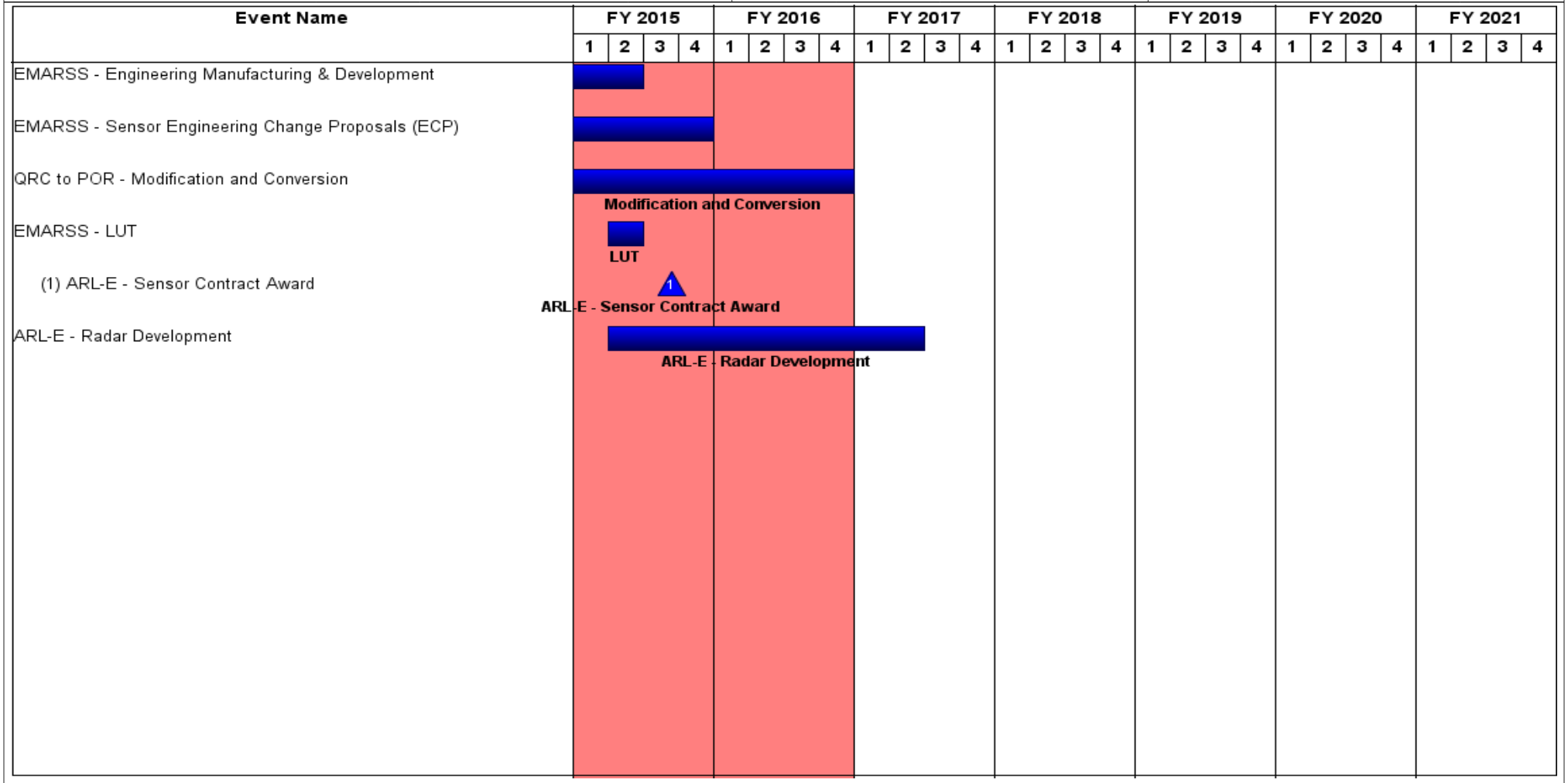

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMARSS - Engineering Manufacturing & Development	3	2011	2	2015
EMARSS - Sensor Engineering Change Proposals (ECP)	4	2014	4	2015
QRC to POR - Modification and Conversion	4	2014	4	2016
EMARSS - LUT	2	2015	2	2015
ARL-E - Sensor Contract Award	3	2015	3	2015
ARL-E - Radar Development	2	2015	2	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	18.254	10.599	4.955	-	4.955	7.201	8.360	7.349	7.537	Continuing	Continuing
DX9: *National Integration To Tactical Systems(MIP)*	-	18.254	10.599	4.955	-	4.955	7.201	8.360	7.349	7.537	Continuing	Continuing

A. Mission Description and Budget Item Justification

National Integration to Tactical Systems provides centralized monitoring and synchronization by the Army's Tactical Exploitation of National Capabilities (TENCAP) office, for the transition and integration of proven advanced technologies, prototypes and standards developed by the National Intelligence Community (IC) into Army systems and Programs of Record. This Program Element includes Project funds for an Army ACAT III Program of Record (POR). It also enables efficient use and oversight of system development funds for final stage integration, development, and testing of successful technologies and prototypes to advance, or make compliant, Army systems and Programs of Record that have or use National capabilities.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	15.212	10.599	8.970	-	8.970
Current President's Budget	18.254	10.599	4.955	-	4.955
Total Adjustments	3.042	0.000	-4.015	-	-4.015
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.042	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-4.015	-	-4.015

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) DX9 / *National Integration To Tactical Systems(MIP)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DX9: *National Integration To Tactical Systems(MIP)*	-	18.254	10.599	4.955	-	4.955	7.201	8.360	7.349	7.537	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

National Integration to Tactical Systems provides for centralized monitoring and synchronization by the Army's Tactical Exploitation of National Capabilities (TENCAP) office for the transition and integration of new, updated, and emerging National Intelligence Community (IC) technologies, capabilities, and standards into Programs of Record across the Army to: (1) maintain operational relevance of Army programs and address changes in technology and the threat, (2) ensure Army programs maintain interoperability with and access to the National community architecture and systems, and (3) advance Army ability to conduct analysis and tasking, collection, processing, exploitation, dissemination and feedback (TCPEDF) of intelligence data.

FY2017 Base funding in the amount of $4.955 million provides integration funds for 2 validated National Intel Community (IC) efforts: (1) Air Vigilance (AV) software development with $2.352 Million for the integration of advanced sensor developments into the Army Air Vigilance (AV) Program of Record; (2) Army TNG Integration, $2.603 million funds the continued efforts to ensure Army Programs of Record are in compliance to the National standard for Airborne Overhead Cooperative Operations/Theater Net-Centric Geolocation (AOCO/TNG), per the Joint Requirement (JROCM 101-10).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Advanced Air Vigilance (AV) capabilities	7.362	7.179	2.352
Description: Advanced development, modifications and changes to the Air Vigilance (AV) system software.			
FY 2015 Accomplishments: Advanced development, modifications, and changes to the Air Vigilance (AV) system's software. Provided updates to software baseline being used to provide timely intelligence to the warfighter across the world. Developed proof of concepts for the ability of the software to be placed on various aerial assets.			
FY 2016 Plans: Provides updates to software baseline being used to provide timely intelligence to the warfighter across the world. Develops a future capability from the user to have the POR be used to collect data in an austere environment.			
FY 2017 Plans: Provided updates to software baseline being used to provide timely intelligence to the warfighter across the world. Develops the user capability to ensure theater net-centric geolocation			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
capability, and the ability for the POR to be operated in austere environments as required by the warfighter.			
Title: Army TNG Integration - Airborne Overhead Cooperative Operations (AOCO) / Theater Net-Centric Geolocation (TNG) ***Description:*** National Intelligence Community (IC) standard for interoperability and use of specific intelligence networked capabilities. ***FY 2015 Accomplishments:*** Provided funds to specified Army Programs of Record for software development and enhancements and for integration, ensuring compliance to the National requirement and standards and interoperability with this National Intelligence Community (IC) networked capability for tactical use and improved Army battlefield awareness. ***FY 2016 Plans:*** Provides funds to specified Army Programs of Record for software development and enhancements and for integration, ensuring compliance to the National requirement and standards and interoperability with this National Intelligence Community (IC) networked capability for tactical use and improved Army battlefield awareness. ***FY 2017 Plans:*** Provides funds to ensure SIGNIT Army assets can perform timely and accurate geolocation against high value targets through software development enhancements of the current JCID 4.1/4.2 TNG investment, ensuring compliance to the National requirement and standards and interoperability with National Intelligence Community (IC) networked capabilities for tactical use and improved Army battlefield awareness, to participate in the Theater Net-Centric Geolocation (TNG) standards for interoperability. (ref. CJCSI 32450.61, AOCO 13Jan2012)	7.850	3.420	2.603
Title: AMDAS ADV ***Description:*** AMDAS ADV upgrade development efforts. ***FY 2015 Accomplishments:*** AMDAS ADV upgrade development efforts. Program specific details are classified. Details can be provided by separate correspondence.	3.042	-	-
Accomplishments/Planned Programs Subtotals	18.254	10.599	4.955

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• 0603766A: *Tactical Support Development - Adv Dev (MIP), PE 643766*	9.255	13.472	15.730	-	15.730	20.595	20.998	21.403	21.969	Continuing	Continuing
• W60001: *Air Vigilance (AV), OPA2 (W60001)*	7.000	8.224	0.733	-	0.733	1.518	2.484	2.533	2.585	Continuing	Continuing

Remarks

D. Acquisition Strategy

The 'National Integration To Tactical Systems (Military Intelligence Program - MIP)' funds provide for transition and integration of National Intelligence Community (IC) advanced technologies and prototypes leveraged by the Army's Tactical Exploitation of National Capabilities (TENCAP) program office. The Army TENCAP acquisition strategy is driven by an annual TENCAP General Officer Steering Group (TGOSG), co-chaired by the Army G2; Army G8; and the Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology [ASA(ALT)]; and includes representatives from the Army G3; Army G6; Army Training and Doctrine Command (TRADOC); and the Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S). The TGOSG reviews, validates, prioritizes, and guides Army TENCAP efforts, according to Army and Defense strategy. Based on this TGOSG guidance, Army TENCAP invests BA 6.4 RDTE in Intelligence Community (IC) developments during the more cost-effective advanced development phase to ensure Army requirements are met with minimal redundancy. Army TENCAP then uses BA 6.5 RDTE to manage the transition of these advanced development efforts through system development and integration into Army Programs of Record (POR). This strategy ensures these leveraged investments remain viable through multiple budget cycles, significantly increasing successful transition to recipient Army POR. Army TENCAP facilitates the continued access to National Intel Community (IC) 'joint' efforts and compatibility with those National standards and software baseline for those Army PORs that benefit from these leveraged National IC technologies, resulting in cost-savings through cost-sharing, and Army participation in collaborative Intelligence. Funds will be utilized for the ACAT III POR Air Vigilance and Theater Net-Centric Geolocation (TNG).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AV POR Matrix Gov Engineers	MIPR	AGC : Alexandria, VA	0.195	0.200	Nov 2014	0.208	Nov 2015	0.660	Nov 2016	-		0.660	Continuing	Continuing	0
AV POR Intel Engineers, PM Support	C/FFP	TASC, Inc. : Chantilly, VA	0.675	-		-		-		-		-	Continuing	Continuing	0
AV POR Intel Engineers, PM Support	C/CPFF	TBD : TBD	0.000	0.695	Dec 2014	0.770	Dec 2015	-		-		-	0	1.465	0
		Subtotal	0.870	0.895		0.978		0.660		-		0.660	-	-	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vigilance (AV) software updates and integration	MIPR	Classified : MIPR	5.389	4.761	Dec 2014	4.391	Nov 2015	0.612	Nov 2015	-		0.612	Continuing	Continuing	0
TNG for Multiple Army PORs	MIPR	Multiple : Multiple	13.100	7.850	Feb 2015	3.420	Mar 2016	2.603	Mar 2017	-		2.603	Continuing	Continuing	0
AMDAS ADV upgrade development efforts	MIPR	MIPR : MIPR	0.000	3.042	Aug 2015	-		-		-		-	0	3.042	0
		Subtotal	18.489	15.653		7.811		3.215		-		3.215	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vigilance (AV) PM Dir costs - Gov, travel, etc.	Allot	Army TENCAP : Alexandria, VA	1.273	1.206	Oct 2014	1.230	Oct 2015	0.830	Oct 2016	-		0.830	Continuing	Continuing	0
		Subtotal	1.273	1.206		1.230		0.830		-		0.830	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AV POR testing	MIPR	Multiple : Multiple	0.500	0.500	Jan 2015	0.580	Jan 2016	0.250	Jan 2017	-		0.250	Continuing	Continuing	0
		Subtotal	0.500	0.500		0.580		0.250		-		0.250	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.132	18.254		10.599		4.955		-		4.955	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** DX9 / *National Integration To Tactical Systems(MIP)*

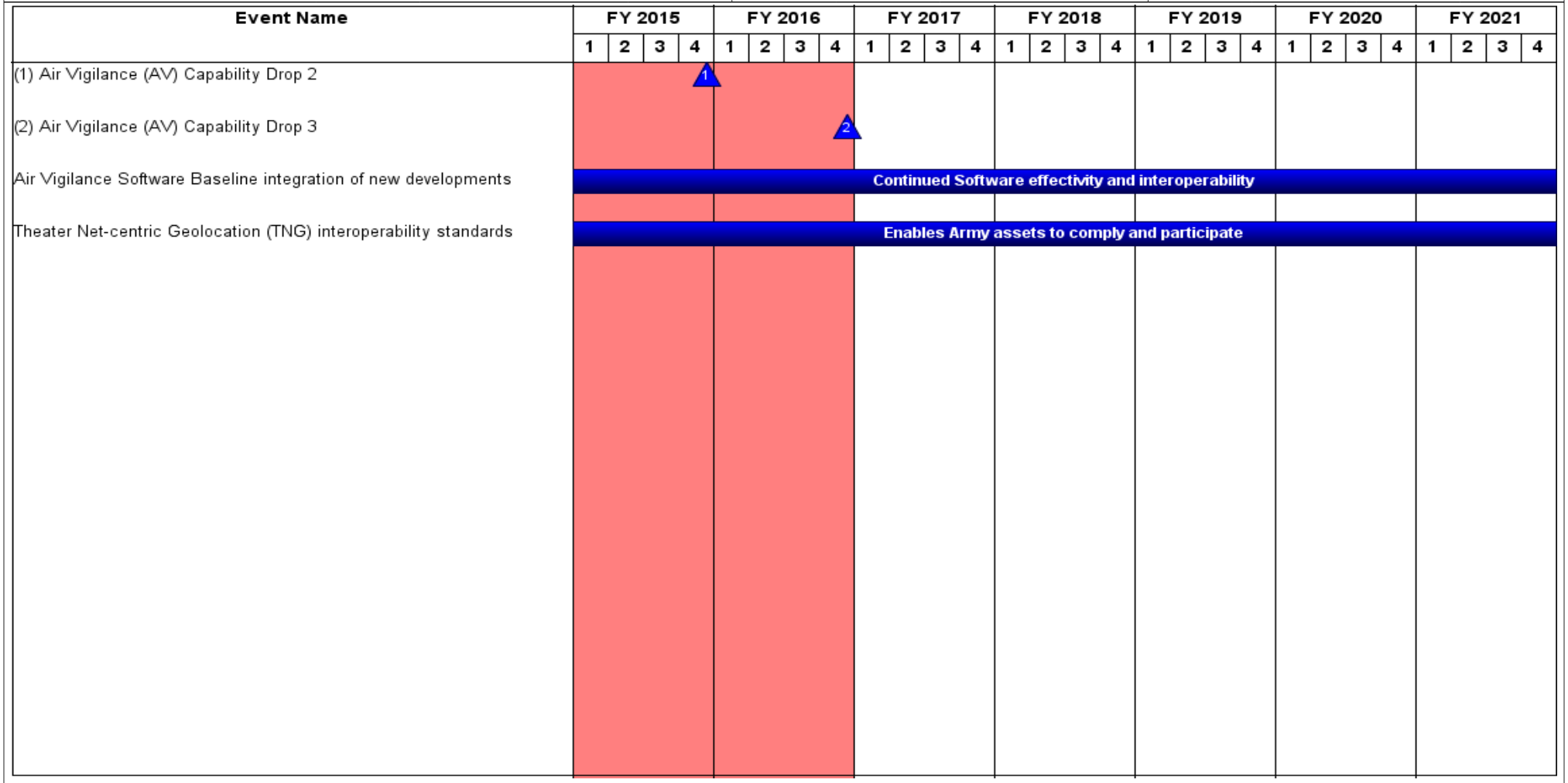

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** DX9 / *National Integration To Tactical Systems(MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Air Vigilance (AV) Capability Drop 2	4	2015	4	2015
Air Vigilance (AV) Capability Drop 3	4	2016	4	2016
Air Vigilance Software Baseline integration of new developments	4	2013	4	2022
Theater Net-centric Geolocation (TNG) interoperability standards	2	2014	1	2022

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605812A *I Joint Light Tactical Vehicle - ED*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	43.302	32.486	11.530	-	11.530	3.022	2.905	2.971	1.967	Continuing	Continuing
VU9: *Joint Light Tactical Vehicle - ED*	-	43.302	32.486	11.530	-	11.530	3.022	2.905	2.971	1.967	Continuing	Continuing

Note

FY 2012 funding for the Joint Light Tactical Vehicles (JLTV) program is under Program Element (PE) 0604804A, Project L50.
FY 2013 and out year funding is under Project Element (PE) 0605812A, Project VU9.

A. Mission Description and Budget Item Justification

Funding supports the development and testing of the Joint Light Tactical Vehicle (JLTV) Family of Vehicles (FoV). JLTV is a joint program between the U.S. Army and the U.S. Marine Corps, of which the U.S. Army has the lead. The JLTV goal is a FoV capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., between vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized.

Major FY 2017 budget activities include the continued monitoring of contractor performance, completion of provisioning, and the continuation of Live Fire Test for the Low-Rate Initial Production (LRIP) program to include: Full Up System Level (FUSL), Automatic Fire Extinguishing System (AFES), Corrosion, Ballistics, and Logistics Demonstration testing.

The FY 2017 funding request was reduced by $13.689 million to account for the availability of prior year execution balances.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle - ED*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	45.694	32.486	25.566	-	25.566
Current President's Budget	43.302	32.486	11.530	-	11.530
Total Adjustments	-2.392	0.000	-14.036	-	-14.036
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.654	-			
• SBIR/STTR Transfer	-1.738	-			
• Adjustments to Budget Years	-	-	-14.036	-	-14.036

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle - ED*	Project (Number/Name) VU9 / *Joint Light Tactical Vehicle - ED*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
VU9: *Joint Light Tactical Vehicle - ED*	-	43.302	32.486	11.530	-	11.530	3.022	2.905	2.971	1.967	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2012 funding for the Joint Light Tactical Vehicles (JLTV) program is under Program Element (PE) 0604804A, Project L50.
FY 2013 and out year funding is under Project Element (PE) 0605812A, Project VU9.

A. Mission Description and Budget Item Justification

Funding supports the development and testing of the Joint Light Tactical Vehicle (JLTV) Family of Vehicles (FoV). JLTV is a joint program between the U.S. Army and the U.S. Marine Corps, of which the U.S. Army has the lead. The JLTV goal is a FoV capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., between vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized.

Major FY 2017 budget activities include the continued monitoring of contractor performance, completion of provisioning, and the continuation of Live Fire Test for the Low-Rate Initial Production (LRIP) program to include: Full Up System Level (FUSL), Automatic Fire Extinguishing System (AFES), Corrosion, Ballistics, and Logistics Demonstration testing.

The FY 2017 funding request was reduced by $13.689 million to account for the availability of prior year execution balances.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Contract and support for development, fabrication, and test of live fire test assets.	17.825	9.377	4.271
Description: Funding is provided for the contract award for live fire test assets.			
FY 2015 Accomplishments: Funding provides for contract award of live fire test assets that will be destroyed during ballistic testing. Developed logistics documentation, Government Furnished Equipment (GFE), management, and provided oversight of programmatic and contractual issues related to logistics.			
FY 2016 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle - ED*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle - ED*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Funding provides for contract award to continue testing of Live Fire Test Assets that will be destroyed during ballistic testing and support for live fire testing. Continue logistics support of GFE which will be detroyed during live fire test events. ***FY 2017 Plans:*** Funding provides for contract award to continue testing of Live Fire Test Assets that will be destroyed during ballistic testing and support for live fire testing. Continue logistics support of GFE which will be detroyed during live fire test events.			
Title: Joint Light Tactical Vehicles (JLTV) program management support ***Description:*** Funding is provided for the support of program management government operations. ***FY 2015 Accomplishments:*** Continue support for the completion of the EMD phase to include program management, level of effort reports, test evaluation analyses, integrated logistics support, government furnished equipment management, building maintenance, building utilities, vehicle leases, close out of the EMD contracts, preparation of analysis and documentation in support of Milestone C, and LRIP source selection. ***FY 2016 Plans:*** Support for LRIP phase to include program management and monitoring of vendor performance for the live fire tests. ***FY 2017 Plans:*** Continue support for LRIP phase to include monitoring of vendor performance for the live fire asset effort and program management.	8.165	2.497	2.046
Title: Test and Evaluation Events and Analysis. ***Description:*** Test and Evaluation Events ***FY 2015 Accomplishments:*** Completion of LUT testing and finalize the EMD test reports in support of Milestone C, LRIP source selection, and ballistic hulls in preparation of LRIP test. ***FY 2016 Plans:*** Finalize the LRIP test plan and start the LRIP test program to include Full Up System Level (FUSL), Automatic Fire Extinguishing System (AFES), ballistic, corrosion, and roof crush. ***FY 2017 Plans:***	17.312	20.612	5.213

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle - ED*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle - ED*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Beginning of Logistics Demonstration testing and the continuation of the LRIP test program to include Full Up System Level (FUSL), Automatic Fire Extinguishing System (AFES), corrosion, and ballistic testing.			
Accomplishments/Planned Programs Subtotals	43.302	32.486	11.530

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• PM JLTV PRODUCTION D15603: *Joint Light Tactical Vehicles (JLTV), D15603, Army OPA 1*	164.615	249.911	587.514	-	587.514	827.890	1,082.456	1,103.261	1,139.366	Continuing	Continuing
• PM JLTV PROJECT 3209 0605812M: *Marine Corps Ground Combat/Support Systems, RDTE Project 3209 0605812M*	8.970	32.149	23.197	-	23.197	7.873	2.854	2.135	-	Continuing	Continuing
• PM JLTV PRODUCTION 5095: *Marine Corps Ground Combat/ Support Systems, Production 5095*	7.425	59.954	113.230	-	113.230	421.660	668.830	681.183	98.994	Continuing	Continuing

Remarks

D. Acquisition Strategy

Joint Light Tactical Vehicle (JLTV) is a Joint Service Program with the U.S. Army and U.S. Marine Corps as the two main components. The U.S. Army is the JLTV service lead.

The JLTV Program entered the Production and Deployment Phase with the Acquisition Decision Memorandum authorization on 25 August 2015. With Milestone C approval the LRIP fixed price contract was awarded to Oshkosh Defense LLC on 25 August 2015. This contract consists of a three year LRIP period with options for five additional years of FRP deliveries. JPO JLTV requested separately priced firm fixed price (FFP) option(s) for the purchase of the Technical Data Package (TDP) with appropriate data rights to allow for possible future competition for production vehicles as well as spares. On 8 September 2015, a Stop Work Order was issued to Oshkosh after a protest was filed to the Government Accountability Office (GAO). On 15 December 2015, the Government Accountability Office (GAO) dismissed the protest due to Lockheed Martin's notice that they intended to file a Post-Award Bid Protest with the U.S. Court of Federal Claims (COFC). The Stop Work Order was officially canceled and Oshkosh has resumed work. On 17 December 2015, Lockheed Martin officially filed a complaint with the COFC and an injunction decision is pending. JPO JLTV is currently evaluating potential injunction impacts.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle - ED*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle - ED*

The program now begins the LRIP phase where it will strive to produce production vehicles for extensive Test and Evaluation activities to support a FRP Decision. A ramp up of JLTV quantities will continue thru FY19 to support fielding's to Army and USMC units once the FRP decision is achieved and allow the program to smoothly transition into FRP.

The JLTV program will continually monitor emerging technologies and capabilities through its partnerships with Army and Marine Corps science and technology organizations as well as through industry market research and partnerships. At this time Follow-on Increments for technology insertion is undefined, the JLTV program will look for opportunities to implement increased capabilities throughout the system's Life Cycle.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle - ED*	Project (Number/Name) VU9 / *Joint Light Tactical Vehicle - ED*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Light Tactical Vehicles (JLTV)Contract Service Support	SS/CPFF	Booz-Allen Hamilton, : McLean, VA	10.191	-		-		-		-		-	0	10.191	0
JLTV Contract Service Support for Cost Analysis for JLTV CARD	SS/CPFF	Camber Corporation, : Huntsville, AL	0.561	0.030	Nov 2015	-		-		-		-	0	0.591	0
JLTV Service Support	MIPR	US Army Combined Arms Support Commands - CASCOM, : Ft. Lee, VA	0.200	-		-		-		-		-	0	0.200	0
		Subtotal	10.952	0.030		-		-		-		-	0.000	10.982	0.000

Remarks

Funding for Management Services has shiftted from RDT&E to procurement.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Light Tactical Vehicles (JLTV) Engineering and Manufacturing Development (EMD) Contract	C/FFP	Oshkosh Corporation, : Oshkosh, WI	34.920	-		-		-		-		-	0	34.920	56.864
JLTV Engineering and Manufacturing Development Contract	C/FFP	Lockheed Martin Corporation, : Grand Prairie, TX	18.878	-		-		-		-		-	0	18.878	65.497
JLTV Engineering and Manufacturing Development Contract	C/FFP	AM General, : South Bend, IN	53.565	-		-		-		-		-	0	53.565	64.545

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle - ED*	Project (Number/Name) VU9 / *Joint Light Tactical Vehicle - ED*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JLTV Live Fire Test Assets and Support	C/FFP	Oshkosh Corporation : Oshkosh, WI	0.000	5.708	Aug 2015	5.432	Feb 2016	4.121	Dec 2016	-		4.121	Continuing	Continuing	Continuing
		Subtotal	107.363	5.708		5.432		4.121		-		4.121	-	-	-

Remarks

Joint Light Tactical Vehicles (JLTV) is a Joint Services Program with the U.S. Army and U.S. Marine Corps as the two main components. U.S. Army under PE 0604804A Project L50 and U.S. Marine Corps under PE 0603635M Project 3209. The LRIP/FRP contract awarded in FY15 has a cost sharing agreement between the services to cover shared RDT&E funded test activities.

Total estimated target value of the Live Fire Test contract is shared between the U.S. Army and the U.S. Marine Corps. The U.S. Marine Corps funds are under PE 0605812M Project 3209.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Light Tactical Vehicles (JLTV) Program Management Support	Various	TACOM Life Cycle Management Command (LCMC), : Harrison Township, MI	16.308	8.165	Sep 2015	2.497	Sep 2016	2.046	Sep 2017	-		2.046	Continuing	Continuing	Continuing
GFE Management / GFE / Analysis	MIPR	Various : TBD	13.799	2.881	Mar 2015	3.800	Aug 2016	-		-		-	Continuing	Continuing	Continuing
JLTV EMD/LRIP phase.	MIPR	Tank-Automotive Reseach, Development, and Engineering Center - TARDEC : Warren, MI	9.670	4.575	Jan 2015	-		-		-		-	Continuing	Continuing	Continuing
JLTV Prototype EMD/LRIP - Cost and Systems, Legal, Budget, Safety, Security, Contracting, Logistics	MIPR	TACOM Life Cycle Management Command (LCMC), : Warren, MI	5.759	4.631	Dec 2014	0.145	Dec 2015	0.150	Dec 2016	-		0.150	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle - ED*	Project (Number/Name) VU9 / *Joint Light Tactical Vehicle - ED*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	45.536	20.252		6.442		2.196		-		2.196	-	-	-

Remarks

Funding for Support Costs decreases due to the end of the development phase as well as programmatic support shifting from RDT&E to procurement.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Complete Engineering and Manufacturing Development (EMD) Test - Limited User Test (LUT)	MIPR	Army Evaluation Center (AEC) : Aberdeen Proving Ground, MD	40.942	0.400	Aug 2015	-		-		-		-	0	41.342	0
Live Fire T&E - ballistics, FUSL, AFES, roof crush, Log demo, and corrosion.	Various	TBD : Various	0.000	16.912	Feb 2015	20.612	Oct 2015	5.213	Oct 2016	-		5.213	23.708	66.445	0
		Subtotal	40.942	17.312		20.612		5.213		-		5.213	23.708	107.787	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	204.793	43.302		32.486		11.530		-		11.530	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle - ED*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle - ED*

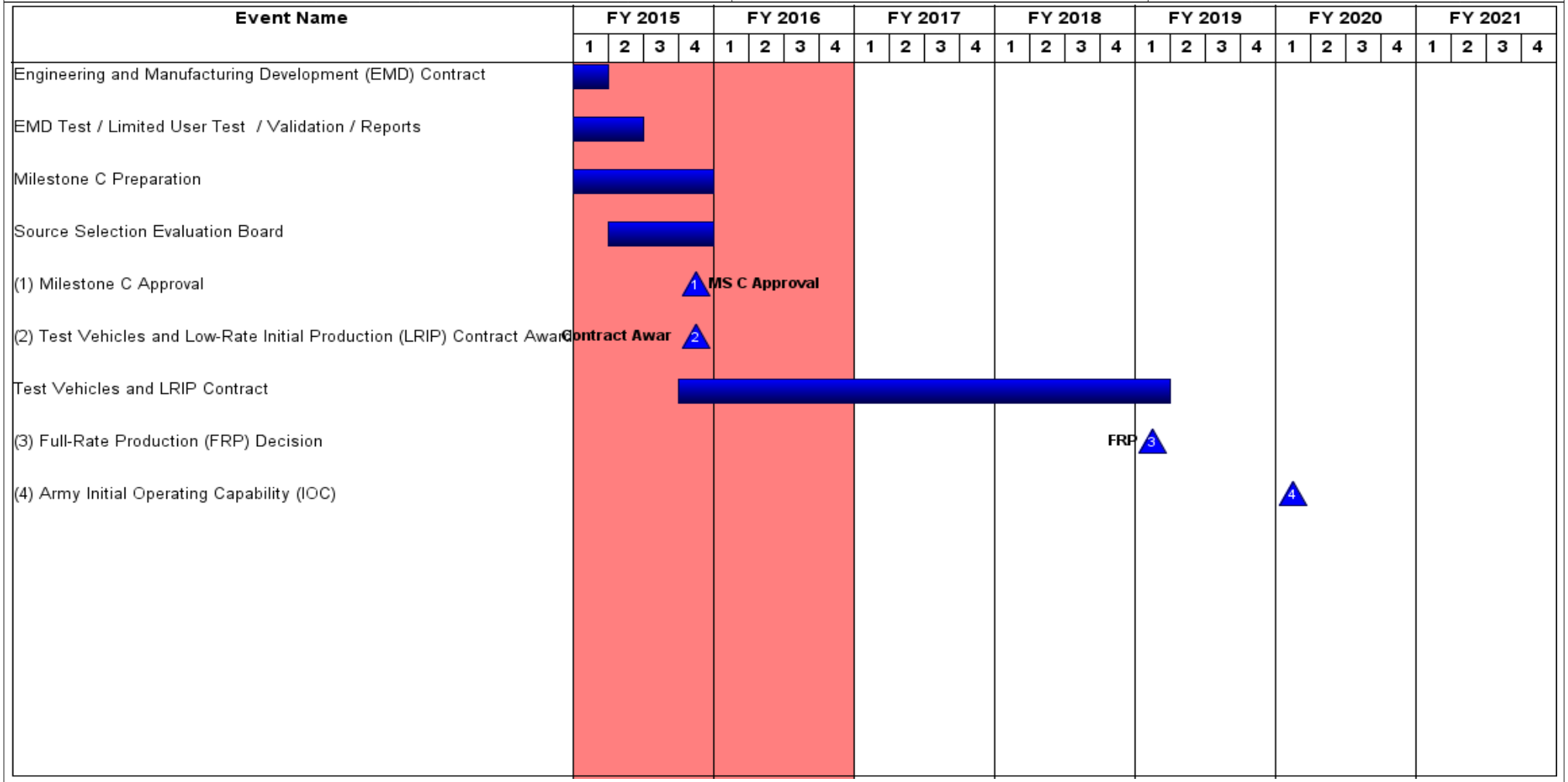

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle - ED*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle - ED*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Engineering and Manufacturing Development (EMD) Contract	4	2012	1	2015
EMD Test / Limited User Test / Validation / Reports	1	2013	2	2015
Milestone C Preparation	1	2014	4	2015
Source Selection Evaluation Board	2	2015	4	2015
Milestone C Approval	4	2015	4	2015
Test Vehicles and Low-Rate Initial Production (LRIP) Contract Award	4	2015	4	2015
Test Vehicles and LRIP Contract	4	2015	1	2019
Full-Rate Production (FRP) Decision	1	2019	1	2019
Army Initial Operating Capability (IOC)	1	2020	1	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605830A / *Aviation Ground Support Equipment*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	9.655	13.880	2.142	-	2.142	6.808	4.117	7.092	5.387	Continuing	Continuing
EE5: *Aviation Ground Support Equipment*	-	9.655	13.880	2.142	-	2.142	6.808	4.117	7.092	5.387	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element funds Aviation Ground Support Equipment (AGSE) developmental testing and acquisition of prototypes to enhance the functionality of current and future aircraft maintenance equipment. This will be accomplished by identifying more effective aircraft maintenance equipment, validating new maintenance concepts, improving machine interfaces, updating aircraft maintenance processes, and developing improved diagnostic technologies which will reduce Operation and Support costs. This program provides for the development of rapid battle repair procedures, tools, ground handling, and test equipment to speed the return of aircraft to a fully mission capable status. Included in this program are: Aviation Ground Power Unit (AGPU), Self-propelled Crane Aircraft Maintenance and Positioning Increment II (SCAMP II), Aviation Unit Maintenance Shop Set (AVUM SS), Modernized Flexible Engine Diagnostic System (MFEDS), (formerly referred to as Digital Flexible Engine Diagnostic System (DFEDS)), Modernized Maintenance Stands (MMS), Unit Maintenance Aerial Recovery Kit (UMARK), Aviation Maintenance Support System (AMSS), Generic Aircraft Nitrogen Generator (GANG), Pitot Static Test Set (PSTS) and development of support equipment required for maintenance support to modernized/future force aircraft.

B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	10.036	8.880	7.880	-	7.880
Current President's Budget	9.655	13.880	2.142	-	2.142
Total Adjustments	-0.381	5.000	-5.738	-	-5.738
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.381	-			
• Adjustments to Budget Years	-	-	-5.738	-	-5.738

Change Summary Explanation

FY 2016 increase of $5.000 million is a program increase as a result of the FY16 OMNIBUS Appropriation Act.

FY 2017 decrease of $5.738 million reflects an adjustment to align funding including a Resource Management Decision decrement of $2,364K.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605830A / *Aviation Ground Support Equipment*	Project (Number/Name) EE5 / *Aviation Ground Support Equipment*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EE5: *Aviation Ground Support Equipment*	-	9.655	13.880	2.142	-	2.142	6.808	4.117	7.092	5.387	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project funds Aviation Ground Support Equipment (AGSE) developmental testing and acquisition of prototypes to enhance the functionality of current and future aircraft maintenance equipment. This will be accomplished by identifying more effective aircraft maintenance equipment, validating new maintenance concepts, improving machine interfaces, updating aircraft maintenance processes, and developing improved diagnostic technologies which will reduce Operation and Support costs. This program provides for the development of rapid battle repair procedures, tools, ground handling, and test equipment to speed the return of aircraft to a fully mission capable status. Included in this program are: Aviation Ground Power Unit (AGPU), Self-propelled Crane Aircraft Maintenance and Positioning Increment II (SCAMP II), Aviation Unit Maintenance Shop Set (AVUM SS), Modernized Flexible Engine Diagnostic System (MFEDS), (formerly referred to as Digital Flexible Engine Diagnostic System (DFEDS)), Modernized Maintenance Stands (MMS), Unit Maintenance Aerial Recovery Kit (UMARK), Aviation Maintenance Support System (AMSS), Generic Aircraft Nitrogen Generator (GANG), Pitot Static Test Set (PSTS) and development of support equipment required for maintenance support to modernized/future force aircraft.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Aviation Ground Power Unit (AGPU) ***Description:*** The AGPU provides external hydraulic, pneumatic, and AC/DC electrical power to meet Army helicopter servicing requirements. ***FY 2015 Accomplishments:*** Completed development and component level testing of redesigned hydraulic and electrical modules. ***FY 2016 Plans:*** Conduct system level testing and evaluation with redesigned components into prototype AGPUs.	2.099	1.015	-
Title: Aviation Unit Maintenance Shop Set (AVUM SS) ***Description:*** The AVUM SS consists of three deployable shelters which provide deployable tool loads required for unit-level aviation maintenance tasks. ***FY 2015 Accomplishments:***	2.596	0.850	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Procured test samples, performed both developmental and operational testing, and finalized acquisition documentation in preparation for procurement. ***FY 2016 Plans:*** Complete developmental and operational testing of test samples and finalize acquisition documentation in preparation for procurement.			
Title: SCAMP II Flight Line/Expeditionary ***Description:*** SCAMP II maintenance lifting capability ranges from simple scheduled maintenance lifting on the flight line and other improved Aviation maintenance areas to maintenance lifting required during contact maintenance and Downed Aircraft Recovery Team (DART) operations in unimproved environments. ***FY 2015 Accomplishments:*** Performed market research, prepared Statement of Work, created detailed test plan and prepared contract requirements package. ***FY 2016 Plans:*** Perform technical reviews of proposals, procure samples for testing, initiate testing of product samples and update acquisition documentation supporting a Milestone C decision. ***FY 2017 Plans:*** Complete Source Selection Evaluation Board, and acquisition documentation supporting a Milestone C decision.	0.367	1.712	1.449
Title: Non-Destructive Test Equipment (NDTE) ***Description:*** NDTE provides Army Aviation Maintenance units with an electronic test instrument to inspect aircraft components and structures without complete disassembly or removal from the aircraft (includes eddy current, ultrasonic and harmonic bond capabilities). ***FY 2015 Accomplishments:*** Completed market research for modernization of Non-Destructive Test Equipment to incorporate technology advancements, verified and developed purchase item description and created contracts requirements package. ***FY 2016 Plans:*** Purchase product samples, conduct performance verification testing and technical manual updates.	0.055	0.200	-
Title: Modernized Flexible Engine Diagnostic System (MFEDS) ***Description:*** The MFEDS is an advanced technology engine test system designed to test and verify flight readiness of engines removed from aircraft for maintenance.	2.401	4.453	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Performed prototype system performance assessment, fuel skid redesign, dynamometer torque measurement system integration testing, International Organization for Standardization (ISO) shelter design. ***FY 2016 Plans:*** Perform system level performance verification testing and technical manual development.			
Title: Modernized Maintenance Stand (MMS) ***Description:*** The Modernized Maintenance Stand provides a stable work platform for aircraft maintainers from ground level to the rotor systems. It enhances the occupational safety environment during scheduled and unscheduled maintenance operations. ***FY 2015 Accomplishments:*** Completed a Source Selection Evaluation Board which identified two vendors technically acceptable for this requirement. One production sample from each was purchased for performance testing to determine final selection and contract award. ***FY 2016 Plans:*** Complete performance testing and Source Selection Evaluation Board.	0.382	0.049	-
Title: Unit Maintenance Aerial Recovery Kit (UMARK) ***Description:*** UMARK provides Aviation Support Company and Aviation Maintenance Company units with the ability to quickly rig for transport crash-damaged non-flyable aircraft for evacuation and maintenance. ***FY 2015 Accomplishments:*** Finalized UMARK Technical Data Package, rigging procedures and manuals.	0.473	-	-
Title: Management Support Services ***Description:*** Management Support Services in support of the Aviation Ground Support Equipment Product Management Office. ***FY 2015 Accomplishments:*** Continued Management Support Services. ***FY 2016 Plans:*** Continue Management Support Services. ***FY 2017 Plans:*** Continue Management Support Services	0.350	0.306	0.321
Title: Research, Development, Test, and Evaluation (RDTE) Project Test Support	0.490	5.000	0.062

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: RDTE Project Test Support for the Aviation Ground Support Equipment Product Management Office. ***FY 2015 Accomplishments:*** Continued RDTE Project Test Support. ***FY 2016 Plans:*** Continue Project Test Support ***FY 2017 Plans:*** Continue Project Test Support			
Title: Technical Engineering Services ***Description:*** Technical Engineering Services in support of the Aviation Ground Support Equipment Product Management Office. ***FY 2015 Accomplishments:*** Continued Technical Engineering Services. ***FY 2016 Plans:*** Continue Technical Engineering Services ***FY 2017 Plans:*** Continue Technical Engineering Services	0.442	0.295	0.310
Accomplishments/Planned Programs Subtotals	9.655	13.880	2.142

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Aviation Ground Support Equipment: *Aviation Ground Support Equipment, SSN AZ3520*	31.681	58.067	48.234	-	48.234	47.404	37.529	37.154	34.795	Continuing	Continuing

Remarks

D. Acquisition Strategy

This project is an aggregate of aviation ground support equipment related projects. While the detailed acquisition strategy varies from program to program, the general strategy for each individual program is to complete the development effort through Government test (developmental and operational). Program documentation for milestone decision is prepared, as appropriate, concurrently with the development effort.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605830A / *Aviation Ground Support Equipment*	Project (Number/Name) EE5 / *Aviation Ground Support Equipment*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support Services	Various	PM AGSE : Redstone Arsenal, AL	0.000	0.350	Oct 2014	0.306	Feb 2016	0.321	Oct 2016	-		0.321	Continuing	Continuing	Continuing
		Subtotal	0.000	0.350		0.306		0.321		-		0.321	-	-	-

Remarks

None.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AGPU	Various	UAH, RSA, AL; RTTC, Redstone Arsenal, AL; AMRDEC, RSA, AL; Aberdeen Test Center, : Aberdeen Proving Ground, MD	0.000	2.099	Apr 2015	1.015	Aug 2016	-		-		-	0	3.114	0
AVUM SS	Various	AMRDEC, RSA; RTTC, RSA; Aberdeen Test Center, : Aberdeen Proving Ground, MD	0.000	2.596	Apr 2015	0.850	Jun 2016	-		-		-	0	3.446	0
SCAMP II Flight Line/ Expeditionary	Various	AMCOM, RSA; AMRDEC, RSA : Redstone Arsenal, AL	0.000	0.367	Jun 2015	1.712	Jul 2016	1.449	Jun 2017	-		1.449	Continuing	Continuing	Continuing
NDTE	Various	AMRDEC, RSA, AL; ATC : Aberdeen Proving Ground, MD	0.000	0.055	Apr 2015	0.200	May 2016	-		-		-	0	0.255	0
MFEDS	Various	RTTC (RSA); AMDREDEC	0.000	2.401	Jan 2015	4.453	Apr 2016	-		-		-	0	6.854	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605830A / *Aviation Ground Support Equipment*	Project (Number/Name) EE5 / *Aviation Ground Support Equipment*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		(RSA); : Redstone Arsenal, AL													
MMS	C/IDIQ	PM, AGSE : Redstone Arsenal, AL	0.000	0.382	Sep 2015	0.049	May 2016	-		-		-	0	0.431	0
UMARK	Various	AMRDEC, RSA, AL; Aberdeen Test Center, APG, MD; AATD : Fort Eustis, VA	0.000	0.473	Feb 2015	-		-		-		-	0	0.473	0
		Subtotal	0.000	8.373		8.279		1.449		-		1.449	-	-	-

Remarks

None.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Engineering Services	MIPR	AATD : Ft. Eustis, VA	0.000	0.300	Apr 2015	0.200	Apr 2016	0.200	Apr 2017	-		0.200	Continuing	Continuing	Continuing
Technical Engineering Services	MIPR	AED : Redstone Arsenal, AL	0.000	0.142	Apr 2015	0.095	Apr 2016	0.110	Apr 2017	-		0.110	Continuing	Continuing	Continuing
		Subtotal	0.000	0.442		0.295		0.310		-		0.310	-	-	-

Remarks

None.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605830A / *Aviation Ground Support Equipment*	Project (Number/Name) EE5 / *Aviation Ground Support Equipment*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RDTE Project Test Support	MIPR	ATC : Aberdeen Proving Ground, MD	0.000	0.320	Jan 2015	0.100	Jan 2016	-		-		-	Continuing	Continuing	Continuing
RDTE Project Test Support	Various	AMRDEC : Redstone Arsenal, AL	0.000	0.115	May 2015	0.075	May 2016	-		-		-	Continuing	Continuing	Continuing
RDTE Project Test Support	Various	AMCOM, : Redstone Arsenal, AL	0.000	0.055	Jan 2015	4.825	Jan 2016	0.062	Jan 2017	-		0.062	Continuing	Continuing	Continuing
		Subtotal	0.000	0.490		5.000		0.062		-		0.062	-	-	-

Remarks

None.

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	9.655		13.880		2.142		-		2.142	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

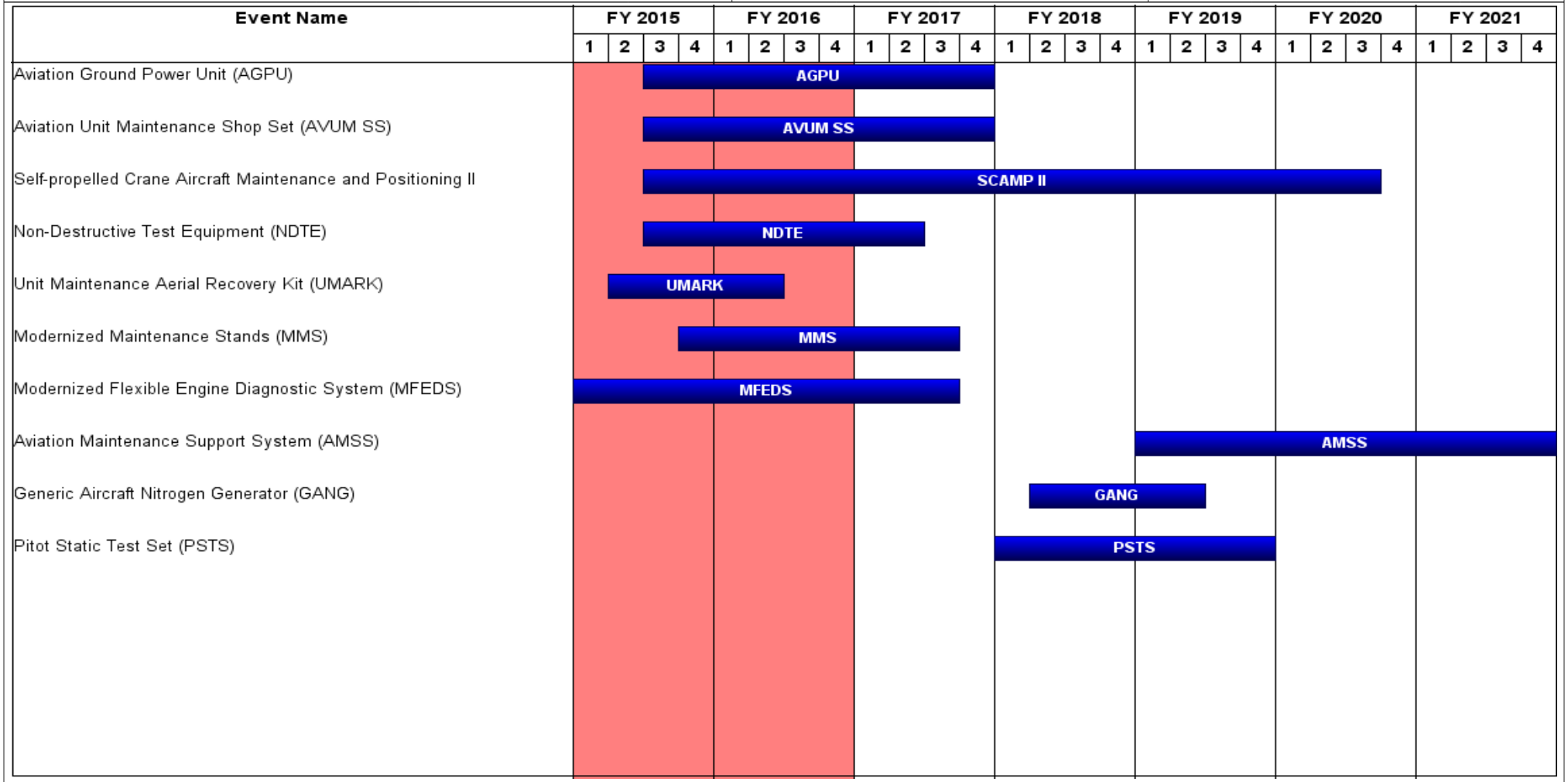

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Aviation Ground Power Unit (AGPU)	3	2015	4	2017
Aviation Unit Maintenance Shop Set (AVUM SS)	3	2015	4	2017
Self-propelled Crane Aircraft Maintenance and Positioning II	3	2015	3	2020
Non-Destructive Test Equipment (NDTE)	3	2015	2	2017
Unit Maintenance Aerial Recovery Kit (UMARK)	2	2015	2	2016
Modernized Maintenance Stands (MMS)	4	2015	3	2017
Modernized Flexible Engine Diagnostic System (MFEDS)	1	2015	3	2017
Aviation Maintenance Support System (AMSS)	1	2019	4	2021
Generic Aircraft Nitrogen Generator (GANG)	2	2018	2	2019
Pitot Static Test Set (PSTS)	1	2018	4	2019

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0210609A / *Paladin Integrated Management (PIM)*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	77.210	152.288	41.498	-	41.498	6.112	0.000	0.000	0.000	0.000	277.108
ED8: *Paladin Integrated Management (PIM)*	-	77.210	152.288	41.498	-	41.498	6.112	0.000	0.000	0.000	0.000	277.108

A. Mission Description and Budget Item Justification

Paladin Integrated Management (PIM) is an ACAT 1D Acquisition Program. The program will replace the current fleet of M109 Family of Vehicles (FoV) consisting of the M109A6 Paladin Self Propelled Howitzer and M992A2 Field Artillery Ammunition Supply Vehicle (FAASV). PIM is an Army Modernization Program that addresses a critical capability gap created by the Non-Line of Sight Cannon termination in June of 2009 as well as obsolescence and Space, Weight,and Power (SWAP) issues in the M109 FoV current fleet. The PIM system integrates current Bradley Fighting Vehicle suspension and drive train items, Future Combat Systems (FCS) developed Electric Gun Drive systems and current fleet (M109A6) fire control systems into a new chassis providing better force protection, survivability and increases in electrical power over the current fleet. PIM is a two vehicle system: The M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition Tracked (CAT). The SPH has all characteristics listed above. The CAT utilizes all of these same components and traits except those related directly to the cannon system. The PIM system replaces the current M109 FoV on a one for one basis, in the cannon fires battalions in the Armored Brigade Combat Team Formations and the Echelons above Brigade (EAB). The overall intent is to increase Soldier force protection, vehicle survivability, provide an appropriate amount of SWAP capacity to add future capabilities, increase vehicle reliability, reduce life cycle costs and extend the life of the M109 FoV through FY 2050.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	80.263	152.288	42.060	-	42.060
Current President's Budget	77.210	152.288	41.498	-	41.498
Total Adjustments	-3.053	0.000	-0.562	-	-0.562
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-3.053	-	-0.562	-	-0.562

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0210609A / *Paladin Integrated Management (PIM)*	Project (Number/Name) ED8 / *Paladin Integrated Management (PIM)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
ED8: *Paladin Integrated Management (PIM)*	-	77.210	152.288	41.498	-	41.498	6.112	0.000	0.000	0.000	0.000	277.108
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Paladin Integrated Management (PIM) is an ACAT 1D Acquisition Program. The program will replace the current fleet of M109 Family of Vehicles (FoV) consisting of the M109A6 Paladin Self Propelled Howitzer and M992A2 Field Artillery Ammunition Supply Vehicle (FAASV). PIM is an Army Modernization Program that addresses a critical capability gap created by the Non-Line of Sight Cannon termination in June of 2009 as well as obsolescence and Space, Weight, and Power (SWAP) issues in the M109 FoV current fleet. The PIM system integrates current Bradley Fighting Vehicle suspension and drive train items, Future Combat Systems (FCS) developed Electric Gun Drive systems and current fleet (M109A6) fire control systems into a new chassis providing better force protection, survivability, and increases in electrical power over the current fleet. PIM is a two vehicle system: The M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition, Tracked (CAT). The SPH has all characteristics listed above. The CAT utilizes all these same components and traits except those related directly to the cannon system. The PIM system replaces the current M109 FoV on a one for one basis, in the cannon fires battalions in the Armored Brigade Combat Team Formations and the Echelons above Brigade (EAB). The overall intent is to increase Soldier force protection, vehicle survivability, provide an appropriate amount of SWAP capacity to add future capabilities, increase vehicle reliability, reduce life cycle costs, and extend the life of the M109 FoV through FY 2050.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Paladin/FAASV Integrated Management (PIM) Development	54.039	84.773	30.504	-	30.504
Description: Funding is provided for the following contractor developmental efforts: ***FY 2015 Accomplishments:*** Finalization of developmental fixes, sub-system qualification, and testing for production as well as the completion of the System Level Developmental testing. Continuance of engineering development and testing for Corrective Actions, Producibility, and Obsolescence (CPOs) and Software Phase III efforts required for Low Rate Initial Production (LRIP) production. Continued Software Phase II maintenance efforts for CPO functionality and executing Software Formal Qualification Testing (FQT) for Software Phase III (SW PH III). Started the testing of an Objective Underbelly Kit per guidance of the Defense Acquisition Executive (DAE.) Execute the Log Demonstration (LOG DEMO) and Manual validation supporting Initial Operational Test (IOT) to meet requirements for fielding. Began the execution of the Production Qualification Test (PQT) and Full Up System Live Fire (FUSL) testing phase at Army test centers using LRIP platforms. ***FY 2016 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0210609A / *Paladin Integrated Management (PIM)*	**Project (Number/Name)** ED8 / *Paladin Integrated Management (PIM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Funding provides contractor support for the execution of the final Engineering and Manufacturing Development (EMD) testing for the M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition, Tracked (CAT). These tests include Production Qualification Test (PQT), Initial Operational Test and Evaluation (IOT&E), Full Up System Live Fire (FUSL), Threshold 2 (T2) and Under Belly Armor characterization testing. Threshold 1 (T1) is the base vehicle configuration without add-on armor. T2 is the vehicle with add-on armor kits to increase force protection/survivability. These events will be conducted at various test sites throughout the US including Yuma Proving Grounds (YPG), Aberdeen Proving Grounds (APG), White Sands Missile Range (WSMR), and the Cold Regions Test Center (CRTC). Software Phase III maintenance and Training Aids, Devices, Simulators and Simulations (TADSS) development will also be conducted this year. New Equipment Training (NET) Programs of Instruction (POI) development and execution to support IOT&E will be accomplished this year. All of the listed events are required to complete the various documentation requirements and test reports that will determine the operational suitability of the system and support the Full Rate Production decision in 2nd QTR FY 2017. ***FY 2017 Base Plans:*** Funding provides contractor support for the execution of the final Engineering and Manufacturing Development (EMD) testing for the M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition, Tracked (CAT). These tests include Production Qualification Test (PQT), Initial Operational Test and Evaluation (IOT&E), Full Up System Live Fire (FUSL), and Under Belly Armor characterization testing. The reduced funding level from FY 16 to FY 17 reflects the culmination of the test events and writing of the test reports, addressing any issues discovered during test and the shift of the actual IOT&E test event into the 1st QTR FY17. These events will be conducted at various test sites throughout the US including Yuma Proving Grounds (YPG), Aberdeen Proving Grounds (APG), White Sands Missile Range (WSMR), and the Cold Regions Test Center (CRTC). Software Phase III maintenance and Training Aids, Devices, Simulators and Simulations (TADSS) development will also be conducted this year. New Equipment Training (NET) Programs of Instruction (POI) development and execution to support IOT&E will be accomplished this year. All of the listed events are required to complete the various documentation requirements and test reports that will determine the operational suitability of the system and support the Full Rate Production decision in 2nd QTR FY 2017.					
Title: Test and Evaluation ***Description:*** Funding is provided for the following Government test efforts: ***FY 2015 Accomplishments:***	9.012	55.644	5.973	-	5.973

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0210609A / *Paladin Integrated Management (PIM)*	**Project (Number/Name)** ED8 / *Paladin Integrated Management (PIM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Completed testing of developmental fixes, sub-system qualification, and System Level Developmental testing. Completed testing for Corrective Actions, Producibility, and Obsolescence (CPO) and Software Phase III efforts required for Low Rate Initial Production (LRIP); completed Software Phase III Formal Qualification Testing (FQT) for the SPH and the CAT platforms. Started the testing of an Objective Underbelly Kit per guidance of the Defense Acquisition Executive (DAE.) Executed the Log Demonstration and Manual validation effort supporting IOT and to meet requirements for fielding. Began the execution of the PQT and Full Up Systems Live Fire (FUSL) testing phase at Army test centers using LRIP platforms. ***FY 2016 Plans:*** Funding provides program support and execution of the final EMD testing for the M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition, Tracked (CAT). These tests include Production Qualification Test (PQT), Initial Operational Test and Evaluation (IOT&E), Full Up System Live Fire (FUSL), T2 and the DAE directed Underbelly characterization testing. T2 is the vehicle with add-on armor kits to increase force protection/survivability. These events will be conducted at various test sites throughout the US including Yuma Proving Grounds (YPG), Aberdeen Proving Grounds (APG), White Sands Missile Range (WSMR), and the Cold Regions Test Center (CRTC). ***FY 2017 Base Plans:*** Funding provides program support and execution of the final EMD testing for the M109A7 Self Propelled Howitzer (SPH) and the M992A3 Carrier Ammunition, Tracked (CAT). These tests include Production Qualification Test (PQT), Initial Operational Test and Evaluation (IOT&E), Full Up System Live Fire (FUSL), T2 and the DAE directed Underbelly characterization testing. T2 is the vehicle with add-on armor kits to increase force protection/survivability. These events will be conducted at various test sites throughout the US including Yuma Proving Grounds (YPG), Aberdeen Proving Grounds (APG), White Sands Missile Range (WSMR), and the Cold Regions Test Center (CRTC).					
Title: Program Management ***Description:*** Funding is provided for the following program management support: ***FY 2015 Accomplishments:*** Continued the Government System Engineering and Program Management for the total program including: Original Equipment Manufacturer (OEM) management consisting of weekly, monthly, and quarterly program management reviews; continued contract execution management for the EMD phase contract until completion of all efforts in FY 2016. Managed Government Developmental System Test and Evaluation program as it entered	8.475	8.365	2.295	-	2.295

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0210609A / *Paladin Integrated Management (PIM)*	**Project (Number/Name)** ED8 / *Paladin Integrated Management (PIM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
the LRIP testing phase. Management of the program cost, schedule, and performance metrics including making programmatic trade-off decisions. Management of Other Governmental Agencies (OGAs) that support the PIM program. ***FY 2016 Plans:*** Continue the Government System Engineering and Program Management for the total program including: Original Equipment Manufacturer (OEM) management consisting of weekly, monthly, and quarterly program management reviews; continue contract execution management for the EMD phase contract until completion of all efforts in FY 2017. Manage Government Developmental System Test and Evaluation program as it enters the LRIP testing phase. Management of the program cost, schedule, and performance metrics including making programmatic trade-off decisions. Management of Other Governmental Agencies (OGAs) that support the PIM program. ***FY 2017 Base Plans:*** Continue the Government System Engineering and Program Management for the total program including: Original Equipment Manufacturer (OEM) management consisting of weekly, monthly, and quarterly program management reviews; continue contract execution management for the EMD phase contract until completion of all efforts in FY 2017. Manage Government Developmental System Test and Evaluation program as it enters the LRIP testing phase. Management of the program cost, schedule, and performance metrics including making programmatic trade-off decisions. Management of Other Governmental Agencies (OGAs) that support the PIM program.					
Title: Training ***Description:*** Funding is provided for the following training government and contractor efforts: ***FY 2015 Accomplishments:*** Completed basic training development to support LRIP Operational Test (OT), Maintenance training to support LOG DEMO and Technical Manual (TM) validation efforts. Conducted training efforts to validate the training Programs of Instruction (POI's) for designated OT Army units. Completed Training Aids, Devices, Simulators and Simulations (TADSS) for OT designated units going into the Operational Test Phase of the program. ***FY 2016 Plans:***	4.879	2.796	2.726	-	2.726

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0210609A / *Paladin Integrated Management (PIM)*	**Project (Number/Name)** ED8 / *Paladin Integrated Management (PIM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Complete final development of training support packages and POI's to support IOT&E and LOG verification events. Complete Training Aids, Devices, Simulators and Simulations for Operational Test units in support of IOT&E. ***FY 2017 Base Plans:*** Complete final development of training support packages and POI's to support IOT&E and Full Rate Decision. Complete Training Aids, Devices, Simulators and Simulations for Operational Test units in support of IOT&E.					
Title: Data ***Description:*** Funding is provided for the following data contractor efforts: ***FY 2015 Accomplishments:*** Maintained Contractor Technical Data Packages. Continued the validation of Technical Publications that support LOG DEMO and TM validation as well as fielding's to active and reserve component organizations. ***FY 2016 Plans:*** Maintain Contractor Technical Data Packages. Continue the validation of Technical Publications that will support IOT&E and the future Active and Reserve component units during fielding.	0.805	0.710	-	-	-
Accomplishments/Planned Programs Subtotals	77.210	152.288	41.498	-	41.498

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• Paladin Integrated Management: *Paladin Integrated Management*	247.400	273.850	469.305	125.184	594.489	662.413	656.599	653.494	663.204	2,811.927	6,563.376

Remarks

D. Acquisition Strategy

The PIM Program was initiated on 16 August 2007 under the BAE Systems, Inc., System Technical Support (STS) Contract W56HZV-07-C-0096. Subsequent work directives were awarded under BAE STS contract W56HZV-07-C-0256 to further define the configuration of the PIM vehicles. On 14 August 2009, a Research, Development, Test and Evaluation (RDT&E) Contract W56HZV-09-C-0550 was awarded to BAE Systems Inc. for the Prototype Development and Fabrication of 7 prototype vehicles (5 PIM Self Propelled Howitzer (SPH) Systems and 2 PIM Carrier Ammunition, Tracked (CAT) vehicles). A Comprehensive Contract Modification (CCM) award to the RDT&E contract was accomplished on 6 January 2012. This modification allows for the completion of the design engineering and initial developmental test portion of the Engineering and Manufacturing Development (EMD) Phase and transfers the system responsibility for the program from the

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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Government to BAE Systems Inc. An additional modification to the EMD contract was awarded on 18 July 2014 to extend the contract until 31 March 2017 to cover contractor support to Production Qualification Testing (PQT), the Logistics Demonstration, and Initial Operational Test & Evaluation (IOT&E). The awarded Low-Rate Initial Production (LRIP) contract is of a Fixed Price Incentive Firm Target (FPIF) contract type for procurement of vehicles with a period of performance running from November 2013 through approximately June 2019. The LRIP contract will provide for three LRIP years with the initial base year including 19 SPHs and 18 CATs and the remaining two option years with 18 sets and 30 sets, respectively (each set consisting of one each SPH and CAT) of PIM vehicles. The Full Rate Production (FRP) contract is planned as a FPIF contract that converts to a Firm Fixed Price (FFP) contract after the second year of FRP. The FRP contract provides for the remaining PIM vehicles to fulfill the requirement up to the Army Acquisition Objective of 580 sets.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Data	SS/CPIF	BAE Systems : York, PA	0.000	0.805	Dec 2014	0.710	Dec 2015	-		-		-	0	1.515	0
Training	SS/CPIF	BAE Systems : York, PA	0.000	4.879	Dec 2014	2.796	Dec 2015	2.726	Dec 2016	-		2.726	2.778	13.179	0
PIM Development-Government	MIPR	Various OGAs : Various	0.000	11.091	Dec 2014	19.707	Dec 2015	3.616	Dec 2016	-		3.616	1.755	36.169	0
PIM Development-Contractor	SS/CPIF	BAE Systems : York, PA	0.000	42.948	Dec 2014	65.066	Dec 2015	26.888	Dec 2016	-		26.888	0	134.902	0
		Subtotal	0.000	59.723		88.279		33.230		-		33.230	4.533	185.765	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO/PEO Support	MIPR	PM/PEO Paladin/FAASV : Picatinny	0.000	8.475	Dec 2014	8.365	Dec 2015	2.295	Dec 2016	-		2.295	1.579	20.714	0
		Subtotal	0.000	8.475		8.365		2.295		-		2.295	1.579	20.714	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Level Testing	MIPR	Various OGAs : Various	0.000	9.012	Dec 2014	55.644	Dec 2015	5.973	Dec 2016	-		5.973	0	70.629	0
		Subtotal	0.000	9.012		55.644		5.973		-		5.973	0.000	70.629	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	77.210		152.288		41.498		-		41.498	6.112	277.108	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0210609A / *Paladin Integrated Management (PIM)*	**Project (Number/Name)** ED8 / *Paladin Integrated Management (PIM)*

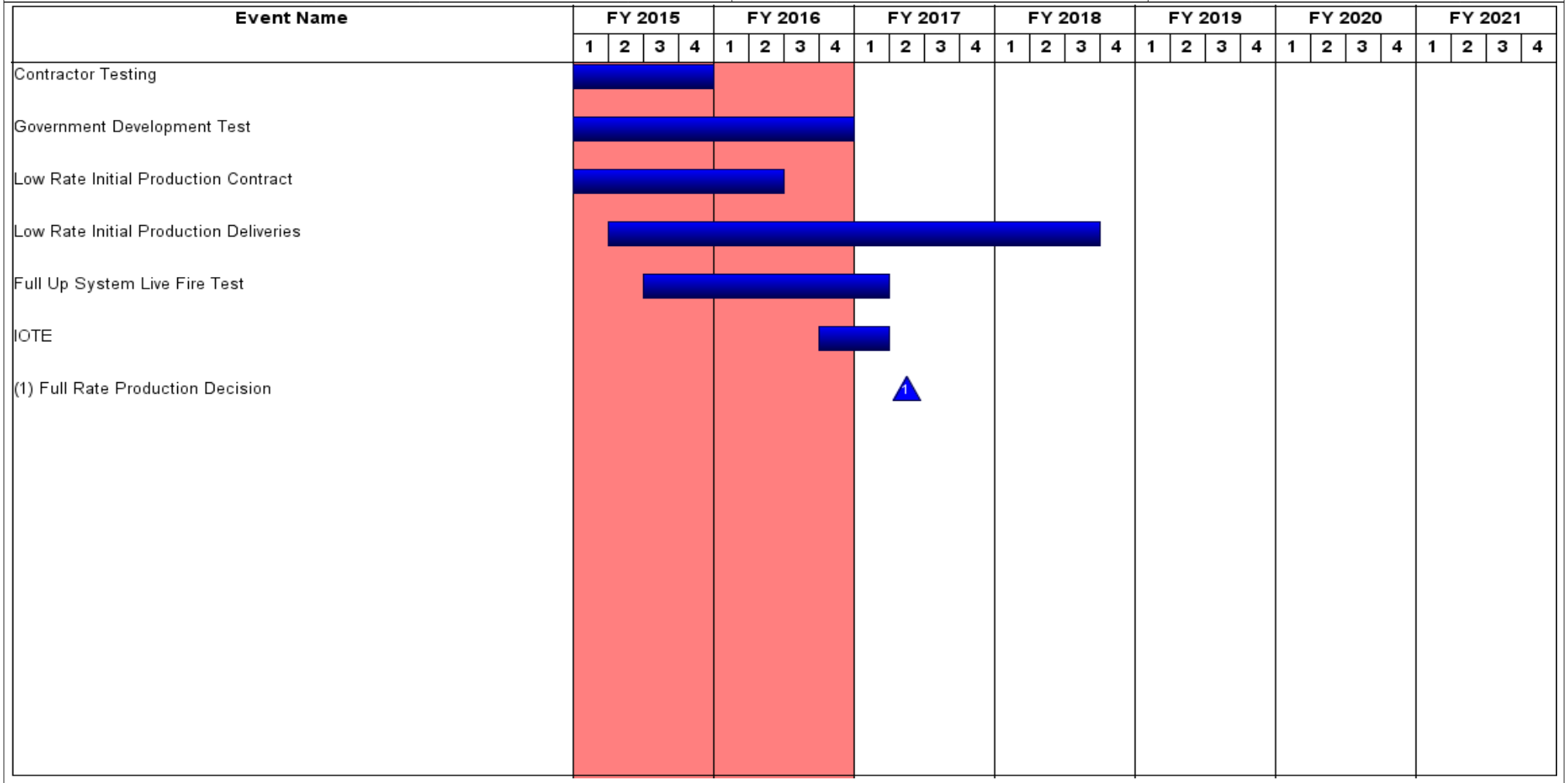

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0210609A / *Paladin Integrated Management (PIM)*	**Project (Number/Name)** ED8 / *Paladin Integrated Management (PIM)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Contractor Testing	4	2012	4	2015
Government Development Test	4	2012	4	2016
Low Rate Initial Production Contract	1	2014	2	2016
Low Rate Initial Production Deliveries	2	2015	3	2018
Full Up System Live Fire Test	3	2015	1	2017
IOTE	4	2016	1	2017
Full Rate Production Decision	2	2017	2	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0303032A / *TROJAN - RH12*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.983	5.022	4.273	-	4.273	4.284	4.386	4.452	4.494	Continuing	Continuing
RH5: *TROJAN - RH12 - MIP*	-	0.983	5.022	4.273	-	4.273	4.284	4.386	4.452	4.494	Continuing	Continuing

A. Mission Description and Budget Item Justification

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

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

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.983	5.022	4.473	-	4.473
Current President's Budget	0.983	5.022	4.273	-	4.273
Total Adjustments	0.000	0.000	-0.200	-	-0.200
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.200	-	-0.200

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0303032A / *TROJAN - RH12*	Project (Number/Name) RH5 / *TROJAN - RH12 - MIP*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
RH5: *TROJAN - RH12 - MIP*	-	0.983	5.022	4.273	-	4.273	4.284	4.386	4.452	4.494	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Integrate Direction Finding and geo-location	0.225	1.263	1.118
Description: Integrate Direction Finding (DF) and geolocation (GL) technologies into TROJAN Remote Receiving Groups.			
FY 2015 Accomplishments: Continued to explore an effort to integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups.			
FY 2016 Plans: Continue efforts to integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12 - MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue efforts to integrate Direction Finding (DF) and geolocation technologies into TROJAN Remote Receiving Groups in accordance with Joint Interface Control Document (JICD) 4.2. Will utilize field based risk reduction exercises to test and evaluate integrated technologies of the overall TROJAN Intelligence, Surveillance, and Reconnaissance (ISR) Enterprise.			
Title: Improve security of the TROJAN Network architecture (formerly Improve bandwidth utilization to maximize efficiency). ***Description:*** Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput. ***FY 2015 Accomplishments:*** Examined increasing efficiency and maximizing throughput via hardware consolidation and virtualization. ***FY 2016 Plans:*** Improve bandwidth utilization and network architecture to maximize TROJAN intelligence network throughput. ***FY 2017 Plans:*** Will utilize Government off the shelf (GOTS)/ Commercial of the shelf (COTS) solutions to secure data-at-rest / data-in-transit to extend the TROJAN intelligence network architecture to the edge.	0.089	0.960	1.186
Title: Integrate and test specialized hardware/software ***Description:*** Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resource development of GL Application Interface for Virtual Environments (GLAIVE) software (SW). Integrated several new National Security Agency (NSA) SW packages. ***FY 2015 Accomplishments:*** Integrated and tested a scaled back suite of specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms and resourced development of GLAIVE software. Conducted limited effort to develop TROJAN Intelligence Surveillance Reconnaissance enterprise. ***FY 2016 Plans:*** Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resource development of GLAIVE software. Continue efforts to develop TROJAN Intelligence Surveillance Reconnaissance enterprise. Continue efforts to integrate the REDHAWK architecture and JICD 4.2 across all platforms. ***FY 2017 Plans:*** Will continue integration and testing of specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Will continue resource development of GLAIVE software. Will continue efforts	0.203	0.900	0.505

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12 - MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
to develop TROJAN Intelligence Surveillance Reconnaissance enterprise. Will continue efforts to integrate the REDHAWK architecture and JICD 4.2 across all platforms.			
Title: Research and testing of receivers ***Description:*** Research and testing of receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using Digital System Processing (DSP) and Field Programmable Gate Arrays (FPGAs) technologies. ***FY 2015 Accomplishments:*** Conducted a limited effort relating to the development of receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs. ***FY 2016 Plans:*** Continue research and testing of receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs. ***FY 2017 Plans:*** Will continue research and testing of receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using DSP and FPGAs.	0.071	0.330	0.295
Title: Development of Satellite Communication (SATCOM) dishes and transceivers ***Description:*** Development of smaller more mobile Satellite Communication (SATCOM) dishes and transceivers. Development of more efficient use of bandwidth, communications on the move and man-packable intelligence collection systems. ***FY 2015 Accomplishments:*** Continued development of smaller more mobile SATCOM dishes. ***FY 2016 Plans:*** Continue development of smaller more mobile SATCOM dishes. ***FY 2017 Plans:*** Will continue development of smaller tactical SATCOM dishes and transceivers to support beyond line of sight capabilities.	0.101	0.744	0.371
Title: Develop specialized software enhancements to the TROJAN streaming subsystems ***Description:*** Develop specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy and throughput capacity and system management capabilities; Investigate compression/processing technologies to reduce communications bandwidth requirements for remoted TROJAN systems, including streaming audio technologies. ***FY 2015 Accomplishments:***	0.071	0.050	0.023

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12 - MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued development of specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy and throughput capacity. ***FY 2016 Plans:*** Develop specialized software enhancements to the TROJAN audio streaming subsystems to improve system redundancy and throughput capacity. ***FY 2017 Plans:*** Will research specialized software enhancements to improve system redundancy and throughput capacity to enable support for full motion video (FMV) streaming.			
Title: Labor cost software (SW) engineers ***Description:*** Labor for two software (SW) engineers in support of GLAIVE and other above applicable efforts. Labor for one Material Developer (MAT DEV) technologist, one MAT DEV software and one MAT DEV Hardware (HW) engineer. ***FY 2015 Accomplishments:*** Resourced labor for one part-time SW engineer in support of GLAIVE and other above applicable efforts. Resourced labor for one part-time MAT DEV software and one part-time MAT DEV HW engineer. ***FY 2016 Plans:*** Resource labor for two SW engineers in support of GLAIVE and other above applicable efforts. Resource labor for one MAT DEV technologist, one MAT DEV software and one MAT DEV HW engineer. ***FY 2017 Plans:*** Will resource labor for one MAT DEV technologist, two MAT DEV software engineers and two MAT DEV HW engineers.	0.223	0.775	0.775
Accomplishments/Planned Programs Subtotals	0.983	5.022	4.273

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• BA0326: *TROJAN (MIP) (OPA SSN BA0326)*	15.214	20.471	20.760	-	20.760	13.202	13.956	14.403	14.591	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12 - MIP*

D. Acquisition Strategy

The Acquisition Strategy for the TROJAN NexGEN Systems supported by TROJAN RDT&E is to adapt and leverage from Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) products. Additionally leverage off of development by DoD and other Government agencies to the greatest extent possible. TROJAN RDT&E is used to fund the development of enhancing these technologies to meet specific user requirements.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0303032A / *TROJAN - RH12*	Project (Number/Name) RH5 / *TROJAN - RH12 - MIP*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Labor Costs MAT DEV HW/SW Engineers	Various	CERDEC I2WD, APG, MD : MD	2.564	0.223	Oct 2014	0.775	Oct 2015	0.775	Oct 2016	-		0.775	0	4.337	0
		Subtotal	2.564	0.223		0.775		0.775		-		0.775	0.000	4.337	0.000

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrate Direction Finding and geo-location	Various	APG : MD	1.412	0.225	Oct 2014	1.263	Oct 2015	1.118	Oct 2016	-		1.118	Continuing	Continuing	0
Improve security of the TROJAN Network architecture	Various	APG : MD	1.040	0.089	Oct 2014	0.960	Oct 2015	1.186	Oct 2016	-		1.186	Continuing	Continuing	0
Research and testing of Receivers	Various	APG : MD	0.945	0.071	Oct 2014	0.330	Oct 2015	0.295	Oct 2016	-		0.295	Continuing	Continuing	0
Develop Satellite Communications (SATCOM) Dishes and transceivers	Various	APG : MD	2.053	0.101	Oct 2014	0.744	Oct 2015	0.371	Oct 2016	-		0.371	Continuing	Continuing	0
Specialized Software Enhancements	Various	APG : MD	0.831	0.071	Oct 2014	0.050	Oct 2015	0.023	Oct 2016	-		0.023	Continuing	Continuing	0
Develop Hardware/ Software Interface	Various	APG : MD	0.445	-		-		-		-		-	0	0.445	0
		Subtotal	6.726	0.557		3.347		2.993		-		2.993	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration and Testing of Hardware/Software	Various	APG : MD	1.979	0.203	Oct 2014	0.900	Oct 2015	0.505	Oct 2016	-		0.505	0	3.587	0
		Subtotal	1.979	0.203		0.900		0.505		-		0.505	0.000	3.587	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0303032A / *TROJAN - RH12*	Project (Number/Name) RH5 / *TROJAN - RH12 - MIP*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.269	0.983		5.022		4.273		-		4.273	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12 - MIP*

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12 - MIP*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Hardware, Software and Systems Development	1	2014	4	2015
Follow on Hardware, Software and Systems Development	1	2016	4	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0304270A *I Electronic Warfare Development*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	8.961	12.686	14.425	-	14.425	13.677	13.533	13.809	41.380	Continuing	Continuing
EW5: *Electronic Warfare Development - MIP*	-	4.426	6.660	6.758	-	6.758	5.512	4.842	4.942	32.275	Continuing	Continuing
EW6: *ARAT-TSS - MIP*	-	4.535	6.026	7.667	-	7.667	8.165	8.691	8.867	9.105	Continuing	Continuing

A. Mission Description and Budget Item Justification

Fiscal Year (FY) 2017 budget request funds Electronic Warfare (EW) Development. This Program Element encompasses engineering and manufacturing development for tactical EW. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program provides the Army with the capability to degrade or deny hostile forces the effective use of their communications, counter mortar/counterbattery radars, surveillance radars, infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threats. Prophet Enhanced is the current system under the Prophet Ground acquisition program. Its primary mission is to provide 24-hour Situation Development and Information Superiority to the supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet Enhanced provides a modular, scalable, open architecture-based system solution optimized for ease of use in a variety of configurations (Stationary-Fixed, Mobile and Manpack). The Army Reprogramming Analysis Team (ARAT) is a Department of the Army established project to develop techniques, methods, tools and architecture to reprogram mission software embedded in Army EW systems, Force Protection Systems (FPS), and Target Sensing Systems (TSS) in response to changes in threat signatures. ARAT Research and Development enables continuous development of: 1) automated threat analysis tools to rapidly detect (flag) threat changes within intelligence systems, 2) tools to minimize the time to develop EW Mission Software and Products (MSP) for both air and ground EW systems, 3) tools and technology to minimize the time required to test and validate MSPs, 4) improved communications conduits to transmit mission software changes to field users, and 5) enhanced mission-software uploading tools. These efforts allow for rapid threat analysis, simulation, mission software development, distribution and uploading of mission software changes directly to the supported Soldier in the field. The ARAT project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon system.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*		R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	8.961	12.686	15.598	-	15.598
Current President's Budget	8.961	12.686	14.425	-	14.425
Total Adjustments	0.000	0.000	-1.173	-	-1.173
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-1.173	-	-1.173

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development - MIP*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EW5: *Electronic Warfare Development - MIP*	-	4.426	6.660	6.758	-	6.758	5.512	4.842	4.942	32.275	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Prophet Enhanced is the current system under the Prophet Ground acquisition program. Funds provide for development and integration of Pre-Planned Product Improvement (P3I) upgrades for Next Generation Signals and state-of-the-art Signals Intelligence (SIGINT) exploitation techniques to increase the capabilities of the Prophet Enhanced and maintain operational relevance. The Prophet Enhanced is the tactical commander's sole organic ground-based SIGINT/Electronic Warfare system for the Brigade Combat Team (BCT), Stryker Brigade Combat Team (SBCT), and Battlefield Surveillance Brigade (BfSB). Its primary mission is to provide 24-hour Situation Development and Information Superiority to the supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet Enhanced provides a modular, scalable, open architecture-based system solution optimized for ease of use in a variety of configurations (Stationary-Fixed, Mobile and Manpack). It also incorporates product modernization, integration, and test of equipment for rapid integration of Technical Insertions (TI) and product development to ensure operational relevance.

Justification:
Fiscal Year (FY) 2017 Base dollars in the amount of $6.758 million will support non-recurring engineering upgrades to the Prophet Enhanced Manpack subsystem. Specifically, new signal capabilities will be developed, integrated, and tested/accredited to ensure that Prophet keeps pace with the constantly changing signal environment and to ensure that Prophet maintains its operational relevance against key enemy threats.

FY17 funding request for PE 0304270A was reduced by $1.173M. Out of this total reduction, EW5 FY17 funding request was reduced by $.965 million to account for the availability of prior year execution balances. Remaining funding reduction was for EW6 ARAT program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Next Generation Signals	2.073	3.139	-
Description: Development of next generation signals enable the Prophet system to remain operationally relevant with state-of-the-art Signal and Threat exploitation capabilities. ***FY 2015 Accomplishments:*** Funds were used for development of next generation signals and required test support activities. ***FY 2016 Plans:*** Funds are provided for hardware upgrades to increase system performance.			
Title: Enhanced SIGINT Exploitation	2.153	3.321	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development - MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Development of next generation signals enable the Prophet system to remain operationally relevant with state-of-the-art Signal and Threat exploitation capabilities. ***FY 2015 Accomplishments:*** Funds were provided for S/W upgrades (increase in memory, antenna upgrade, operating system upgrade) to increase system performance. ***FY 2016 Plans:*** Funds are provided for S/W upgrades (receiver software upgrade) to increase system performance.			
Title: Improved Manpack Signal Set ***Description:*** Development and integration of the improved Manpack will enable the Prophet system to remain operationally relevant in the constantly changing signal environment. ***FY 2017 Plans:*** Funds will provide support for non-recurring engineering change and software qualification testing for the Prophet Enhanced Manpack system. In addition, funds will also provide for engineering and software development support for the Prophet program.	-	-	6.258
Title: Program Management ***Description:*** Development of next generation signals, enhanced SIGINT exploitation, and improved manpack signal sets enable the Prophet system to remain operationally relevant with state-of-the-art Signal and Threat exploitation capabilities. ***FY 2015 Accomplishments:*** Funds were provided for core, matrix and contractor system engineering and program management support for the Prophet program. ***FY 2016 Plans:*** Funds are provided for core, matrix and contractor system engineering and program management support for the Prophet program. ***FY 2017 Plans:*** Funds will provide for core, matrix and contractor system engineering and program management support for the Prophet program. In addition, the integration of the advanced signal types requires increased manpower for the oversight and system engineering support to the integration efforts.	0.200	0.200	0.500
Accomplishments/Planned Programs Subtotals	4.426	6.660	6.758

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development - MIP*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• SSN BZ9753: *Prophet Enhanced Modification MIP (BZ9753)*	-	-	40.910	-	40.910	30.114	43.359	46.874	80.392	Continuing	Continuing
• SSN BZ7326: *Prophet Ground (OPA) - BZ7326*	55.896	53.650	-	-	-	-	-	-	-	Continuing	Continuing
• SSN BZ9751: *Special Purpose Systems (MIP OPA) (Prophet Only) - BZ9751*	3.901	3.978	4.055	-	4.055	4.189	4.482	9.194	6.047	Continuing	Continuing
• SSN 0605766A: *National Integration to Tactical Systems (MIP) - DX9 (TNG, PE 0605766A)*	0.450	0.434	0.526	-	0.526	-	-	0.500	0.500	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Prophet Research and Development (R&D) Acquisition Strategy is structured to maintain operational relevancy of Prophet Enhanced systems in a dynamic threat environment while reducing risk and streamlining business and engineering processes. Follow-on contracting activities are to modernize forty-seven previously fielded ground tactical SIGINT systems to the current technology baseline. The P3I contract supports R&D and other developmental work.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PM Electronic Warfare & Cyber : APG, MD	0.581	0.200	Oct 2014	0.200	Oct 2015	0.500	Nov 2016	-		0.500	Continuing	Continuing	Continuing
		Subtotal	0.581	0.200		0.200		0.500		-		0.500	-	-	-

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software SIL	C/CPFF	GD C4 Systems : Scottsdale, AZ	0.889	-		-		-		-		-	0	0.889	0
Radio/Receiver Inegration (integrate software defined receiver)	C/CPFF	GD C4 Systems : Scottsdale, AZ	4.037	-		-		-		-		-	Continuing	Continuing	Continuing
Integrate Electronic Warfare Systems	C/CPFF	TRAC : Ft. Leavenworth, KS	4.900	-		-		-		-		-	Continuing	Continuing	Continuing
Next Generation Signals (TOS)	C/CPFF	GD C4 Systems : Scottsdale, AZ	1.200	-		-		-		-		-	Continuing	Continuing	Continuing
Precision Geo-Location	C/CPFF	GD C4 Systems : Scottsdale, AZ	4.200	-		-		-		-		-	Continuing	Continuing	Continuing
Real-time Signal Processing architectural framework (software defined capabilities)	C/CPFF	GD C4 Systems : Scottsdale, AZ	6.706	-		-		-		-		-	Continuing	Continuing	Continuing
Next Generation Signals	C/CPFF	GD C4 Systems : Scottsdale, AZ	6.168	2.073	Mar 2015	3.139	Mar 2016	-		-		-	Continuing	Continuing	Continuing
Enhance SIGINT Exploitation	C/CPFF	GD C4 Systems : Scottsdale, AZ	2.811	2.153	Mar 2015	3.321	Mar 2016	-		-		-	Continuing	Continuing	0
Improved Manpack Signal Set	C/CPFF	TBD : TBD	0.000	-		-		5.258	Jan 2017	-		5.258	0	5.258	0
		Subtotal	30.911	4.226		6.460		5.258		-		5.258	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development - MIP*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Software Support	C/IDIQ	AASKI Technology : APG, MD	0.964	-		-		-		-		-	0	0.964	0
System Integration Lab	Various	I2WD : APG, MD	2.500	-		-		-		-		-	0	2.500	0
		Subtotal	3.464	-		-		-		-		-	0.000	3.464	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prepare and Conduct Delta Testing	MIPR	EPG/AEC : Huachuca, AZ	1.240	-		-		-		-		-	Continuing	Continuing	Continuing
oftware Qualification Test	MIPR	TBD : TBD	0.000	-		-		1.000	Jul 2017	-		1.000	0	1.000	0
		Subtotal	1.240	-		-		1.000		-		1.000	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.196	4.426		6.660		6.758		-		6.758	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development - MIP*

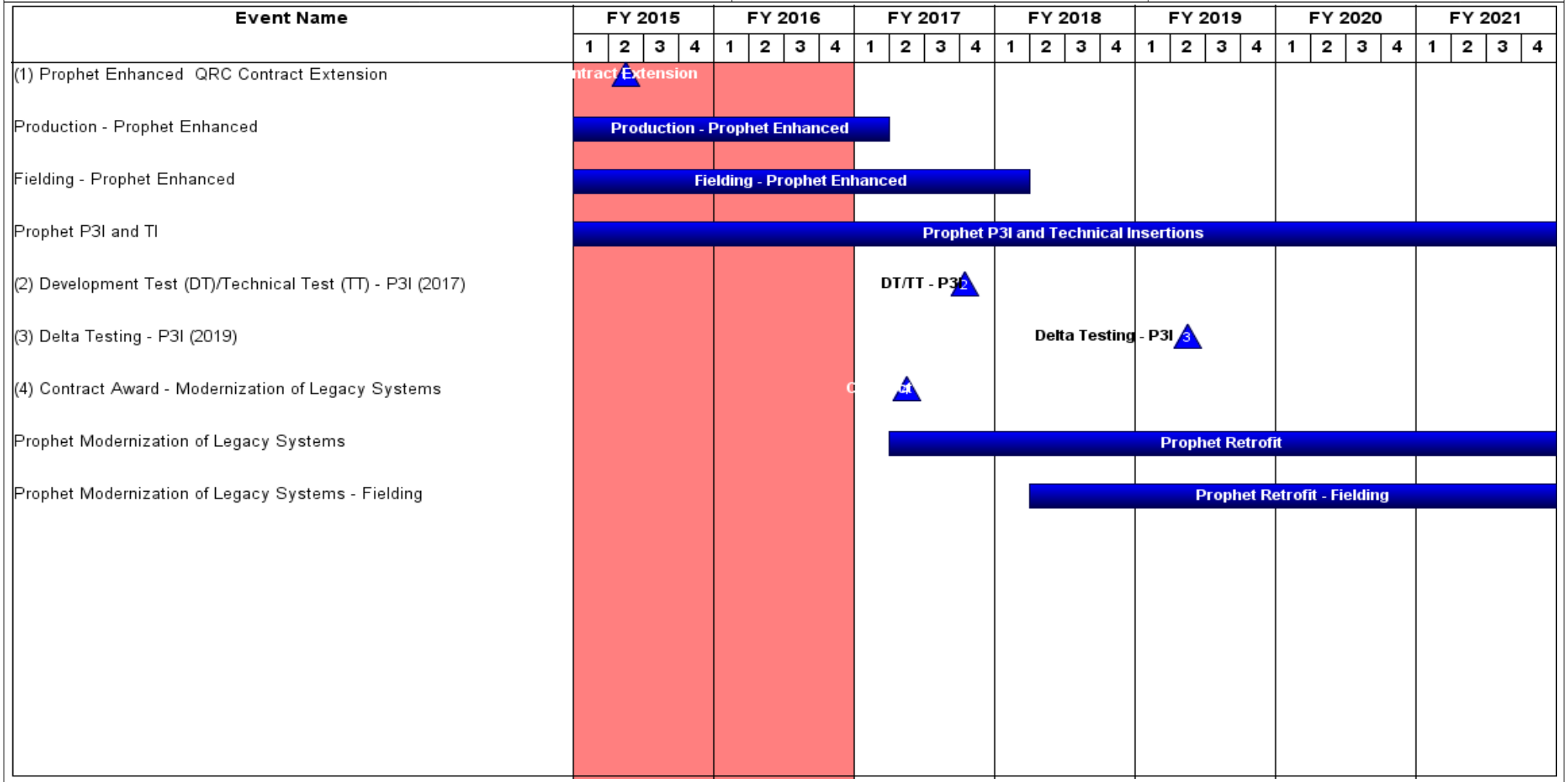

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development - MIP*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Prophet Enhanced QRC Contract Extension	2	2015	2	2015
Production - Prophet Enhanced	2	2009	1	2017
Fielding - Prophet Enhanced	2	2010	1	2018
Prophet P3I and TI	4	2008	4	2021
Development Test (DT)/Technical Test (TT) - P3I (2017)	4	2017	4	2017
Delta Testing - P3I (2019)	2	2019	2	2019
Contract Award - Modernization of Legacy Systems	2	2017	2	2017
Prophet Modernization of Legacy Systems	2	2017	4	2021
Prophet Modernization of Legacy Systems - Fielding	2	2018	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW6 / *ARAT-TSS - MIP*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EW6: *ARAT-TSS - MIP*	-	4.535	6.026	7.667	-	7.667	8.165	8.691	8.867	9.105	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Army Reprogramming Analysis Team (ARAT) is a Department of the Army established program to develop techniques, methods, tools and architecture to rapidly reprogram mission software embedded in Army Electronic Warfare (EW) systems in response to changes in threat signatures. The regulatory guidance directing this mission is contained in AR 525-15, AR 525-22, and AR 95-1. The ARAT develops integrated technical solutions required to counter increasingly sophisticated EW threats to US Forces. The ARAT reprogramming infrastructure supports the Army Campaign Plan to provide the Regionally Aligned Forces tactical Commander timely rapid-reprogramming capability of EW systems with mission software. The ARAT mission responsibility is to develop and distribute Mission Software and Products to forward deployed combat forces. ARAT identifies and analyzes threat signature changes which affect EW systems; determines the impact of observed signature changes; develops new mission software to adapt friendly systems to detect enemy changes; disseminates the Mission Software and Products, and provides tools and software to upload new mission software into the affected EW systems.

A. Mission Description and Budget Item Justification

Current military operations are conducted in a rapidly changing threat environment, where Improvised Explosive Devices (IEDs), Infra Red (IR) man-portable air defense systems (MANPADS) seekers, radar guided surface-to-air-missiles (SAM), laser guided weapons, anti-helicopter mines, and targeting sensors are proliferating and evolving. Integrated solutions are required to counter increasingly sophisticated EW threats. The ARAT reprogramming infrastructure supports the tactical Commander by providing timely rapid reprogramming of mission software and information dissemination for Army supported, Joint and allied services. ARAT supports integrated reprogramming of target acquisition, target engagement, vehicle survivability, and Aircraft Survivability Equipment (ASE). ARAT rapid-reprogramming infrastructure supports tactical requirements for deployed aircraft and ground-based (e.g. Counter Radio-Controlled Improvised Explosive Device (CREW)) survivability systems. ARAT identifies and analyzes threat signature changes which affect EW systems; determines the impact of observed signature changes; develops new mission software to adapt the system to the changes; disseminates the mission software; and provides methods to upload the new mission software into the affected EW systems. Each element within the ARAT infrastructure plays a specific role within the program's rapid reprogramming process, providing the Soldier with the capability to install mission and target identification software at the lowest possible level, thus maximizing flexibility for tactical commanders. ARAT participates in the operational and developmental test design of Army EW systems, and supports Joint Service Reprogramming Exercises in all theaters. ARAT Research and Development enables continuous development of: 1) automated threat analysis tools to rapidly detect (flag) threat changes within the intelligence system, 2) tools to minimize the time to develop Mission Software and Products (MSP), 3) tools and technology to minimize the time required to test and validate MSPs, 4) improved communications conduits to rapidly transmit mission software to upload into supported EW systems. These efforts allow for rapid threat analysis, threat modeling and simulation, mission software development and testing, distribution and uploading of mission software directly to the supported Soldier in the field.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Keeping Pace with the Enemy and Technology	3.258	3.987	4.402

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS - MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: This effort focuses on developing a capability for the Government to rapidly develop and distribute organic mission software solutions for multiple EW systems. The Army must continually modernize and enhance software tools and processes counter enemy technology. ARAT EW6 Military Intelligence Program (MIP) executes Research, Development, Test, and Evaluation (RDTE) funding to provide an organic Army capability for this organization to rapidly develop and distribute mission software solutions for forward deployed combat forces. ***FY 2015 Accomplishments:*** In FY15 ARAT developed the Ground Electronic Warfare (EW) Automated Test Set (ATS), a unique integrated testbed for development and evaluation of Ground EW threat devices and load sets. The ATS provides hardware in the loop (HWIL) automated testing of Army Ground EW systems against real-world legacy and advanced threat devices, including multiple cellular communications technologies. With ATS, the Army is now able to test and optimize Ground EW systems for optimal performance against multiple threat devices in a complex RF environment. The ATS replaces a prior manual test set which was limited to single threat devices, human observation of basic test apparatus and manual data recording. Full use of the ATS in load set development will shorten timelines and reduce the costs of rapid reprogramming of Army Ground EW systems. ***FY 2016 Plans:*** This FY effort continues to: 1) analyze the intelligence data requirements to support MSP development for EO/UV/IR spectrums and other multi-spectral sensors for aviation and non-aviation EW systems, 2) Develop government organic knowledge and application-base enabling reprogramming of future systems, 3) Perform requirements analysis and concept development for the reprogramming of multi-spectral EW systems. ***FY 2017 Plans:*** This FY effort will continue to: 1) study the intelligence data requirements to support MSP development for EO/UV/IR spectrums and other multi-spectral sensors for aviation and non-aviation EW systems, 2) Develop government organic knowledge and application-base enabling reprogramming of future systems, 3)Perform requirements analysis and concept development for the reprogramming of multi-spectral EW systems.			
Title: Infrastructure Improvements Multispectral ***Description:*** This effort focuses on enhancing the Army's multispectral Missile Warning System (MWS) software sustainment infrastructure. With the worldwide proliferation of MANPADS the Army must have the capability to rapidly analyze and develop mission software solutions to detect and counter MANPADS to defend Army Aviation platforms against this lethal threat. ***FY 2015 Accomplishments:*** Developed a modernized version of the Common Missile Warning System (CMWS) User Data Module Generator (UDMG) software. This software, which runs on the Army approved Windows 7 Army Gold Master (AGM) replaces the obsolete and	0.746	1.323	1.477

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
unsupportable original equipment manufacturer (OEM) software which required the Information Assurance (IA) non-compliant Solaris 8 operating system. The Windows UDMG software is fully IA compliant. Developed software tools and databases for organic United States Government (USG) sustainment and support of the CMWS algorithm and Bulk File Data (BFD), including the advanced Virtual Software Integration Lab (VSIL) software, which allows laboratory runs of archived test data to be performed at high speed on modern cluster processing computer systems. These infrastructure enhancements provide the basis for an Operational Flight Program (OFP) development environment to enable the (USG) to develop and deploy an OFP environment for CMWS. Previously, minimal government organic capability existed, increasing the risk that systems cannot be readily adapted to changing threats in the future. ***FY 2016 Plans:*** Conduct infrastructure enhancements for an OFP software development environment to enable the USG to develop and deploy an OFP environment for MWS. Determine data and conduct analysis requirements for MANPADS characterization and establish an organic government analysis and sustainment process to support OFPs and subsequently adapt MWSs to new threats. Establish initial government organic capability, thereby decreasing the risk that systems cannot be readily adapted to changing threats. ***FY 2017 Plans:*** Will conduct infrastructure enhancements for an OFP software development environment to enable the USG to develop and deploy an OFP environment for MWS. Will determine data and conduct analysis requirements for MANPADS characterization and establish an organic government analysis and sustainment process to support OFPs and subsequently adapt MWSs to new threats. Will establish government organic capability, thereby decreasing the risk that systems cannot be readily adapted to changing threats. Currently, minimal government organic capability exists, increasing the risk that systems cannot be readily adapted to changing threats.			
Title: Infrastructure Improvement Radio Frequency General ***Description:*** This effort focuses on enhancing the Army's Radio Frequency (RF) EW system MSP development and distribution infrastructure. The Army must fight in a contested and congested EW environment. Mission software solutions to defend against RF threats must be rapidly developed, tested and distributed to Soldiers on an ever changing battlefield. ***FY 2015 Accomplishments:*** Developed the Test Automation Suite (TAS) of software which provides computer-controlled automated HWIL RF testing for multiple Army Radar Warning Receivers. TAS allows engineers to pre-program multiple simulated threats and operating modes for test and evaluation of Mission Data Software in the laboratory. TAS allows for unmonitored batch testing and automated data collection, greatly reducing the man hours required for Mission Data Software validation. ***FY 2016 Plans:***	0.419	0.507	1.394

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS - MIP*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Enhance the ARAT communications architecture to facilitate the rapid secure transmission of mission software changes to EW systems, with emphasis on remote user and highly mobile Soldier connectivity. Develop and implement an initial integrated EW development and test environment to ensure MSP and threat countermeasure integration on the respective ground and airborne platforms. ***FY 2017 Plans:*** Will continue to enhance the ARAT communications architecture to facilitate the rapid secure transmission of mission software changes to EW systems, with emphasis on remote user and highly mobile Soldier connectivity. Will develop and implement an initial integrated EW development and test environment to ensure MSP and threat countermeasure integration on the respective EW platform.			
Title: Threat Flagging and Mission Data Set Reprogramming Tool Development ***Description:*** This effort focuses on enhancing the Army's capability to monitor changes in enemy EW systems that affect system performance of onboard Army detection, declaration and countermeasure EW systems. The enemy is continuously developing or modifying it's EW systems. For Army platforms to have protection against enemy systems it must have a robust capability to immediately detect changes in threat system performance and rapidly develop, test, and distribute a mission software solution that counter the threat. This effort will enhance the Army's capability bridge detection of a change in enemy threat and the rapid development of MSP. ***FY 2015 Accomplishments:*** Developed the ARAT Display Emulator software, which precisely produces the symbology displayed by the UH-60M Multi-Function Display (MFD) and the AH-64D Multi-Purpose Display (MPD) using Commercial Off The Shelf (COTS) computer hardware and operating systems. The Display Emulator is scalable, and can be modified to emulate other USG on-aircraft displays in the future. Enhanced threat flagging (threat performance change detection) and intelligence analytical tools, based on supported systems performance criteria, to rapidly identify and counter emerging and changing threats that adversely affect the performance of the EW systems. Conducted initial mission software development, develop testing and validation tools to decrease time from threat-change detection to the distribution of MSP in order to increase the accuracy and fidelity of threat identification, and reduce the engineering involvement/workload associated with the manually intensive analysis and MSP development processes. Defined requirements and developed tools to migrate to a data support infrastructure that employs the Electronic Warfare Integrated Reprogramming (EWIR) database. ***FY 2016 Plans:*** Continue to develop and enhance applications for ARAT internal system specific threat flagging, threat analysis, mission software generation and testing processes. Continue to enhance threat flagging (threat performance change detection) and intelligence analytical tools, based on supported systems performance criteria, to rapidly identify and counter emerging and changing threats	0.112	0.209	0.394

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
that adversely affect the performance of the EW systems. Enhance mission software development, testing and validation tools to decrease time from threat-change detection to the distribution of MSP in order to increase the accuracy and fidelity of threat identification, and reduce the engineering involvement/workload associated with the manually intensive analysis and MSP development processes. Define requirements and develop tools to enhance a data support infrastructure that employs the EWIR database. ***FY 2017 Plans:*** Will develop enhanced spiral applications for ARAT internal system specific threat flagging, threat analysis, mission software generation and testing processes. Will conduct spiral enhancement of threat flagging (threat performance change detection) and intelligence analytical tools, based on supported systems performance criteria, to rapidly identify and counter emerging and changing threats that adversely affect the performance of the EW systems. Will develop enhanced mission software development, testing and validation tools to decrease time from threat-change detection to the distribution of MSP in order to increase the accuracy and fidelity of threat identification, and reduce the engineering involvement/workload associated with the manually intensive analysis and MSP development processes. Will continue to evaluate and define requirements to develop tools that enhance a data support infrastructure that employs the EWIR database.			
Accomplishments/Planned Programs Subtotals	4.535	6.026	7.667

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The efforts to be funded in this project will require a combination of systems specific and high-tech knowledge. The contractual services portion for the project will be obtained from both the Communications-Electronics Command (CECOM) Software Engineering Center (SEC) competitive omnibus and the Research, Development and Engineering Command (RDECOM) and the Defense Technical Intelligence Center (DTIC) high tech contracts.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW6 / *ARAT-TSS - MIP*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	CECOM SEC : Aberdeen Proving Ground, MD	0.000	-		0.256	Oct 2015	0.266	Oct 2016	-		0.266	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.256		0.266		-		0.266	-	-	-

Remarks

Beginning FY16, Program Management cost is properly aligned in Management Services.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USG Labor	Various	CECOM SEC : Various Locations	2.448	0.663	Oct 2014	-		-		-		-	0	3.111	0
Travel	Various	CECOM SEC : Various Locations	0.654	0.184	Oct 2014	-		-		-		-	0	0.838	0
		Subtotal	3.102	0.847		-		-		-		-	0.000	3.949	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	CECOM SEC, RDECOM, DTIC : Various Locations	13.867	3.688	Oct 2014	5.770	Oct 2015	7.401	Oct 2016	-		7.401	Continuing	Continuing	Continuing
		Subtotal	13.867	3.688		5.770		7.401		-		7.401	-	-	-

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.969	4.535		6.026		7.667		-		7.667	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW6 / *ARAT-TSS - MIP*	

	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS - MIP*

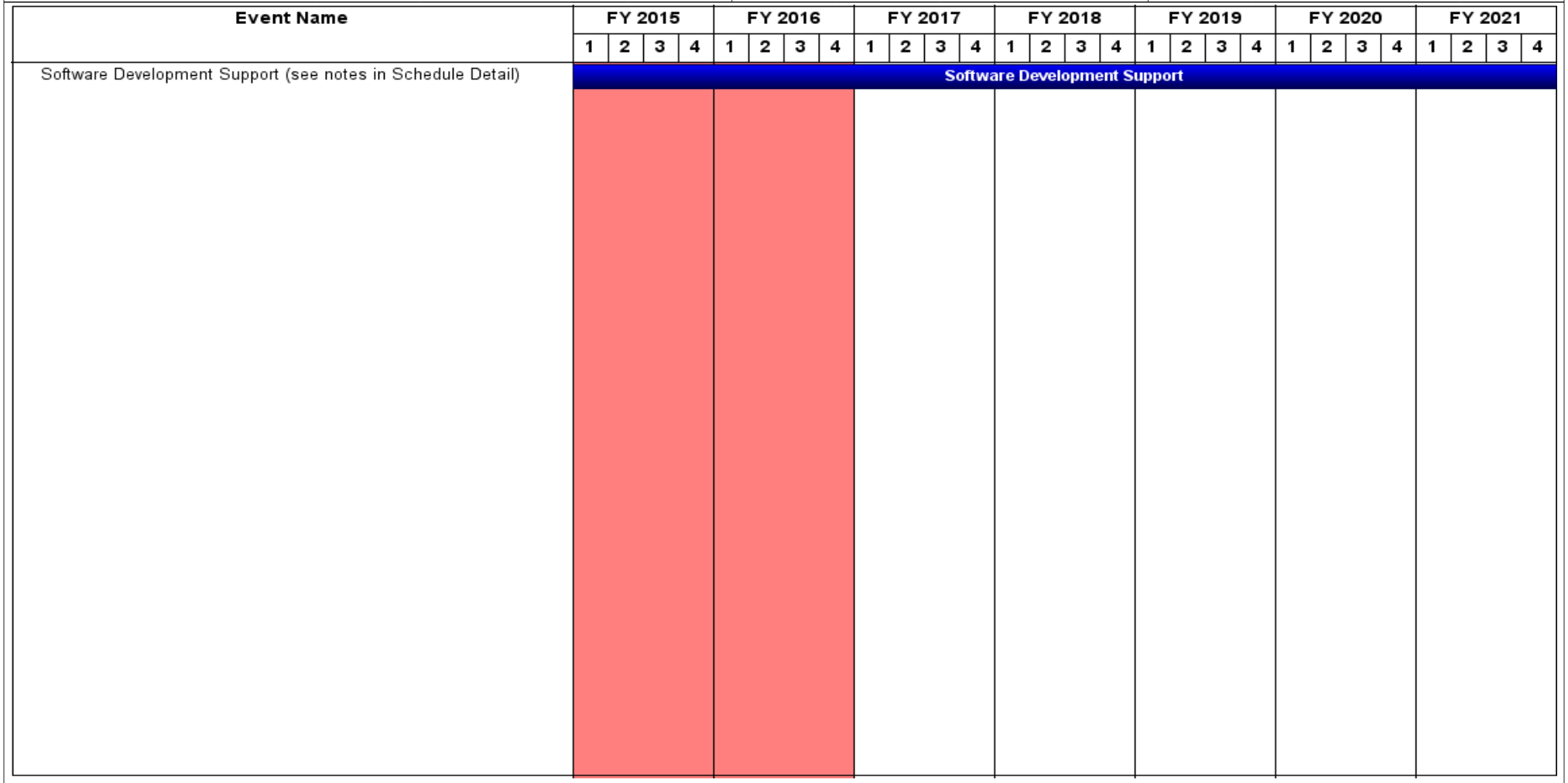

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS - MIP*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Software Development Support (see notes in Schedule Detail)	1	2015	4	2021

Note

-Software Test Automation
-Threat Analysis Data Evaluation Tool
-Enhance Data Distribution