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**Department of Defense
Fiscal Year (FY) 2016 President's Budget Submission**

February 2015



Army

Justification Book of

Research, Development, Test & Evaluation, Army

RDT&E – Volume II, Budget Activity 5a

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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, \$6,926,459,000.00 to remain available for obligation until September 30, 2017.

The following Justification Books were prepared at a cost of \$1,187,353.84: 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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Department of Defense
 FY 2016 President's Budget
 Exhibit R-1 FY 2016 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

15 Jan 2015

Appropriation	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Research, Development, Test & Eval, Army	7,124,298	6,673,146	2,000	6,675,146	6,924,959	1,500	6,926,459
Total Research, Development, Test & Evaluation	7,124,298	6,673,146	2,000	6,675,146	6,924,959	1,500	6,926,459

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Summary Recap of Budget Activities	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Basic Research	425,321	460,268		460,268	425,079		425,079
Applied Research	930,900	981,421		981,421	879,685		879,685
Advanced Technology Development	1,044,919	1,113,149		1,113,149	895,747		895,747
Advanced Component Development & Prototypes	424,652	302,922	2,000	304,922	498,659	1,500	500,159
System Development & Demonstration	1,955,833	1,622,353		1,622,353	2,068,950		2,068,950
RDT&E Management Support	1,317,280	1,015,139		1,015,139	1,027,542		1,027,542
Operational Systems Development	1,025,393	1,177,894		1,177,894	1,129,297		1,129,297
Total Research, Development, Test & Evaluation	7,124,298	6,673,146	2,000	6,675,146	6,924,959	1,500	6,926,459
Summary Recap of FYDP Programs							
Strategic Forces	58,383						
General Purpose Forces	581,979	716,615		716,615	693,053		693,053
Intelligence and Communications	201,878	165,416		165,416	163,446		163,446
Research and Development	6,222,823	5,710,126	2,000	5,712,126	6,015,482	1,500	6,016,982
Central Supply and Maintenance	54,392	76,187		76,187	48,442		48,442
Administration and Associated Activities	126						
Classified Programs	4,717	4,802		4,802	4,536		4,536
Total Research, Development, Test & Evaluation	7,124,298	6,673,146	2,000	6,675,146	6,924,959	1,500	6,926,459

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15 Jan 2015

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

Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Se
1	0601101A	In-House Laboratory Independent Research	01	21,255	13,427		13,427	13,018		13,018	U
2	0601102A	Defense Research Sciences	01	216,774	248,283		248,283	239,118		239,118	U
3	0601103A	University Research Initiatives	01	76,682	89,776		89,776	72,603		72,603	U
4	0601104A	University and Industry Research Centers	01	110,610	108,782		108,782	100,340		100,340	U
		Basic Research		425,321	460,268		460,268	425,079		425,079	
5	0602105A	Materials Technology	02	45,243	46,000		46,000	28,314		28,314	U
6	0602120A	Sensors and Electronic Survivability	02	42,677	46,258		46,258	38,374		38,374	U
7	0602122A	TRACTOR HIP	02	35,493	16,358		16,358	6,879		6,879	U
8	0602211A	Aviation Technology	02	54,667	63,414		63,414	56,884		56,884	U
9	0602270A	Electronic Warfare Technology	02	17,464	18,500		18,500	19,243		19,243	U
10	0602303A	Missile Technology	02	58,426	62,180		62,180	45,053		45,053	U
11	0602307A	Advanced Weapons Technology	02	25,310	38,513		38,513	29,428		29,428	U
12	0602308A	Advanced Concepts and Simulation	02	23,364	27,423		27,423	27,862		27,862	U
13	0602601A	Combat Vehicle and Automotive Technology	02	63,476	72,861		72,861	68,839		68,839	U
14	0602618A	Ballistics Technology	02	73,906	85,575		85,575	92,801		92,801	U
15	0602622A	Chemical, Smoke and Equipment Defeating Technology	02	4,378	3,970		3,970	3,866		3,866	U
16	0602623A	Joint Service Small Arms Program	02	7,592	6,850		6,850	5,487		5,487	U
17	0602624A	Weapons and Munitions Technology	02	52,013	63,057		63,057	48,340		48,340	U
18	0602705A	Electronics and Electronic Devices	02	68,062	73,422		73,422	55,301		55,301	U

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19	0602709A	Night Vision Technology	02	42,624	44,935		44,935	33,807		33,807	U
20	0602712A	Countermines Systems	02	30,019	29,428		29,428	25,068		25,068	U
21	0602716A	Human Factors Engineering Technology	02	21,118	23,778		23,778	23,681		23,681	U
22	0602720A	Environmental Quality Technology	02	22,333	15,653		15,653	20,850		20,850	U
23	0602782A	Command, Control, Communications Technology	02	33,580	33,807		33,807	36,160		36,160	U
24	0602783A	Computer and Software Technology	02	10,232	10,761		10,761	12,656		12,656	U
25	0602784A	Military Engineering Technology	02	69,192	67,302		67,302	63,409		63,409	U
26	0602785A	Manpower/Personnel/Training Technology	02	17,395	23,288		23,288	24,735		24,735	U
27	0602786A	Warfighter Technology	02	30,950	32,044		32,044	35,795		35,795	U
28	0602787A	Medical Technology	02	81,386	76,044		76,044	76,853		76,853	U
		Applied Research		930,900	981,421		981,421	879,685		879,685	
29	0603001A	Warfighter Advanced Technology	03	64,337	78,109		78,109	46,973		46,973	U
30	0603002A	Medical Advanced Technology	03	100,646	106,264		106,264	69,584		69,584	U
31	0603003A	Aviation Advanced Technology	03	78,513	102,950		102,950	89,736		89,736	U
32	0603004A	Weapons and Munitions Advanced Technology	03	72,934	72,908		72,908	57,663		57,663	U
33	0603005A	Combat Vehicle and Automotive Advanced Technology	03	146,486	147,485		147,485	113,071		113,071	U
34	0603006A	Space Application Advanced Technology	03	10,706	6,880		6,880	5,554		5,554	U
35	0603007A	Manpower, Personnel and Training Advanced Technology	03	6,145	13,574		13,574	12,636		12,636	U

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36	0603008A	Electronic Warfare Advanced Technology	03	40,345	44,851		44,851				U
37	0603009A	TRACTOR HIKE	03	9,161	7,492		7,492	7,502		7,502	U
38	0603015A	Next Generation Training & Simulation Systems	03	13,168	16,740		16,740	17,425		17,425	U
39	0603020A	TRACTOR ROSE	03	10,662	14,483		14,483	11,912		11,912	U
40	0603125A	Combating Terrorism - Technology Development	03	14,546	24,257		24,257	27,520		27,520	U
41	0603130A	TRACTOR NAIL	03	3,192	3,440		3,440	2,381		2,381	U
42	0603131A	TRACTOR EGGS	03	2,366	2,406		2,406	2,431		2,431	U
43	0603270A	Electronic Warfare Technology	03	24,652	26,046		26,046	26,874		26,874	U
44	0603313A	Missile and Rocket Advanced Technology	03	81,951	79,934		79,934	49,449		49,449	U
45	0603322A	TRACTOR CAGE	03	11,857	11,105		11,105	10,999		10,999	U
46	0603461A	High Performance Computing Modernization Program	03	213,238	221,518		221,518	177,159		177,159	U
47	0603606A	Landmine Warfare and Barrier Advanced Technology	03	22,233	13,070		13,070	13,993		13,993	U
48	0603607A	Joint Service Small Arms Program	03	4,902	7,318		7,318	5,105		5,105	U
49	0603710A	Night Vision Advanced Technology	03	43,459	44,119		44,119	40,929		40,929	U
50	0603728A	Environmental Quality Technology Demonstrations	03	11,540	11,445		11,445	10,727		10,727	U
51	0603734A	Military Engineering Advanced Technology	03	23,838	17,606		17,606	20,145		20,145	U
52	0603772A	Advanced Tactical Computer Science and Sensor Technology	03	34,042	39,149		39,149	38,163		38,163	U

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53	0603794A	C3 Advanced Technology	03					37,816		37,816	U
		Advanced Technology Development		1,044,919	1,113,149		1,113,149	895,747		895,747	
54	0603305A	Army Missile Defense Systems Integration	04	23,117	25,795		25,795	10,347		10,347	U
55	0603308A	Army Space Systems Integration	04	13,448	13,996		13,996	25,061		25,061	U
56	0603619A	Landmine Warfare and Barrier - Adv Dev	04					49,636		49,636	U
57	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	04					13,426		13,426	U
58	0603639A	Tank and Medium Caliber Ammunition	04	31,580	29,318		29,318	46,749		46,749	U
59	0603653A	Advanced Tank Armament System (ATAS)	04	54,259							U
60	0603747A	Soldier Support and Survivability	04	11,513	6,997	2,000	8,997	6,258	1,500	7,758	U
61	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	10,390	8,953		8,953	13,472		13,472	U
62	0603774A	Night Vision Systems Advanced Development	04	8,760	3,050		3,050	7,292		7,292	U
63	0603779A	Environmental Quality Technology - Dem/Val	04	2,544	7,826		7,826	8,813		8,813	U
64	0603782A	Warfighter Information Network-Tactical - DEM/VAL	04	118,256							U
65	0603790A	NATO Research and Development	04	3,743	2,952		2,952	6,075		6,075	U
66	0603801A	Aviation - Adv Dev	04	4,848							U
67	0603804A	Logistics and Engineer Equipment - Adv Dev	04	11,623	13,380		13,380	21,233		21,233	U
68	0603807A	Medical Systems - Adv Dev	04	17,524	23,647		23,647	31,962		31,962	U

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69	0603827A	Soldier Systems - Advanced Development	04	13,844	6,828		6,828	22,194		22,194	U
70	0603850A	Integrated Broadcast Service	04	79							U
71	0604100A	Analysis Of Alternatives	04		9,910		9,910	9,805		9,805	U
72	0604115A	Technology Maturation Initiatives	04	10,741	44,214		44,214	40,917		40,917	U
73	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	7,500	9,925		9,925	30,058		30,058	U
74	0604319A	Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)	04	76,559	96,131		96,131	155,361		155,361	U
75	0604785A	Integrated Base Defense (Budget Activity 4)	04	4,324							U
		Advanced Component Development & Prototypes		424,652	302,922	2,000	304,922	498,659	1,500	500,159	
76	0604201A	Aircraft Avionics	05	64,396	41,236		41,236	12,939		12,939	U
77	0604220A	Armed, Deployable Helos	05	26,000							U
78	0604270A	Electronic Warfare Development	05	134,260	5,999		5,999	18,843		18,843	U
79	0604280A	Joint Tactical Radio	05	30,752	9,827		9,827	9,861		9,861	U
80	0604290A	Mid-tier Networking Vehicular Radio (MNVR)	05	22,553	9,725		9,725	8,763		8,763	U
81	0604321A	All Source Analysis System	05	4,837	5,532		5,532	4,309		4,309	U
82	0604328A	TRACTOR CAGE	05	28,229	19,929		19,929	15,138		15,138	U
83	0604601A	Infantry Support Weapons	05	82,332	34,575		34,575	74,128		74,128	U
84	0604604A	Medium Tactical Vehicles	05	2,068	210		210				U
85	0604611A	JAVELIN	05	4,471	4,164		4,164	3,945		3,945	U
86	0604622A	Family of Heavy Tactical Vehicles	05	23,944	12,906		12,906				U

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87	0604633A	Air Traffic Control	05	514	16,756		16,756	10,076		10,076	U
88	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05		2,769		2,769	40,374		40,374	U
89	0604710A	Night Vision Systems - Eng Dev	05	47,811	65,299		65,299	67,582		67,582	U
90	0604713A	Combat Feeding, Clothing, and Equipment	05	1,874	3,034		3,034	1,763		1,763	U
91	0604715A	Non-System Training Devices - Eng Dev	05	22,168	8,943		8,943	27,155		27,155	U
92	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	38,412	15,898		15,898	24,569		24,569	U
93	0604742A	Constructive Simulation Systems Development	05	19,596	4,394		4,394	23,364		23,364	U
94	0604746A	Automatic Test Equipment Development	05	6,498	11,079		11,079	8,960		8,960	U
95	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	12,193	10,022		10,022	9,138		9,138	U
96	0604780A	Combined Arms Tactical Trainer (CATT) Core	05	26,720	34,712		34,712	21,622		21,622	U
97	0604798A	Brigade Analysis, Integration and Evaluation	05	91,427	85,246		85,246	99,242		99,242	U
98	0604802A	Weapons and Munitions - Eng Dev	05	16,770	14,998		14,998	21,379		21,379	U
99	0604804A	Logistics and Engineer Equipment - Eng Dev	05	43,497	24,566		24,566	48,339		48,339	U
100	0604805A	Command, Control, Communications Systems - Eng Dev	05	7,131	4,431		4,431	2,726		2,726	U
101	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	33,890	30,384		30,384	45,412		45,412	U
102	0604808A	Landmine Warfare/Barrier - Eng Dev	05	87,895	57,674		57,674	55,215		55,215	U

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103	0604814A	Artillery Munitions - EMD	05	6,352							U
104	0604818A	Army Tactical Command & Control Hardware & Software	05	22,900	29,675		29,675	163,643		163,643	U
105	0604820A	Radar Development	05	1,796	5,221		5,221	12,309		12,309	U
106	0604822A	General Fund Enterprise Business System (GFEBs)	05	3,218				15,700		15,700	U
107	0604823A	Firefinder	05	17,734	23,480		23,480	6,243		6,243	U
108	0604827A	Soldier Systems - Warrior Dem/Val	05	25,477	6,155		6,155	18,776		18,776	U
109	0604854A	Artillery Systems - EMD	05	117,241	1,911		1,911	1,953		1,953	U
110	0605013A	Information Technology Development	05	59,329	69,728		69,728	67,358		67,358	U
111	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	34,400	68,434		68,434	136,011		136,011	U
112	0605028A	Armored Multi-Purpose Vehicle (AMPV)	05	27,345	92,309		92,309	230,210		230,210	U
113	0605030A	Joint Tactical Network Center (JTNC)	05	65,849	8,436		8,436	13,357		13,357	U
114	0605031A	Joint Tactical Network (JTN)	05		17,989		17,989	18,055		18,055	U
115	0605032A	TRACTOR TIRE	05					5,677		5,677	U
116	0605035A	Common Infrared Countermeasures (CIRCM)	05		145,337		145,337	77,570		77,570	U
117	0605051A	Aircraft Survivability Development	05					18,112		18,112	U
118	0605350A	WIN-T Increment 3 - Full Networking	05		113,155		113,155	39,700		39,700	U
119	0605380A	AMF Joint Tactical Radio System (JTRS)	05	9,874	6,878		6,878	12,987		12,987	U
120	0605450A	Joint Air-to-Ground Missile (JAGM)	05	15,684	83,799		83,799	88,866		88,866	U
121	0605456A	PAC-3/MSE Missile	05	86,223	34,991		34,991	2,272		2,272	U

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122	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	358,192	152,516		152,516	214,099		214,099	U
123	0605625A	Manned Ground Vehicle	05	96,820	49,134		49,134	49,247		49,247	U
124	0605626A	Aerial Common Sensor	05	10,377	17,748		17,748	2		2	U
125	0605766A	National Capabilities Integration (MIP)	05	21,132	15,212		15,212	10,599		10,599	U
126	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	81,388	45,694		45,694	32,486		32,486	U
127	0605830A	Aviation Ground Support Equipment	05		10,036		10,036	8,880		8,880	U
128	0210609A	Paladin Integrated Management (PIM)	05		80,263		80,263	152,288		152,288	U
129	0303032A	TROJAN - RH12	05	3,463	983		983	5,022		5,022	U
130	0304270A	Electronic Warfare Development	05	10,801	8,961		8,961	12,686		12,686	U
		System Development & Demonstration		1,955,833	1,622,353		1,622,353	2,068,950		2,068,950	
131	0604256A	Threat Simulator Development	06	23,598	22,057		22,057	20,035		20,035	U
132	0604258A	Target Systems Development	06	13,139	10,037		10,037	16,684		16,684	U
133	0604759A	Major T&E Investment	06	38,534	56,285		56,285	62,580		62,580	U
134	0605103A	Rand Arroyo Center	06	18,281	20,601		20,601	20,853		20,853	U
135	0605301A	Army Kwajalein Atoll	06	187,225	175,956		175,956	205,145		205,145	U
136	0605326A	Concepts Experimentation Program	06	21,563	19,430		19,430	19,430		19,430	U
137	0605502A	Small Business Innovative Research	06	182,958							U
138	0605601A	Army Test Ranges and Facilities	06	335,270	274,980		274,980	277,646		277,646	U
139	0605602A	Army Technical Test Instrumentation and Targets	06	63,944	45,573		45,573	51,550		51,550	U

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(Dollars in Thousands)

15 Jan 2015

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

Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	S e c
140	0605604A	Survivability/Lethality Analysis	06	42,865	33,294		33,294	33,246		33,246	U
141	0605606A	Aircraft Certification	06	5,953	4,700		4,700	4,760		4,760	U
142	0605702A	Meteorological Support to RDT&E Activities	06	7,210	6,411		6,411	8,303		8,303	U
143	0605706A	Materiel Systems Analysis	06	19,694	20,744		20,744	20,403		20,403	U
144	0605709A	Exploitation of Foreign Items	06	7,125	7,015		7,015	10,396		10,396	U
145	0605712A	Support of Operational Testing	06	55,062	49,217		49,217	49,337		49,337	U
146	0605716A	Army Evaluation Center	06	64,425	55,031		55,031	52,694		52,694	U
147	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	1,239	1,124		1,124	938		938	U
148	0605801A	Programwide Activities	06	81,013	64,160		64,160	60,319		60,319	U
149	0605803A	Technical Information Activities	06	33,018	32,303		32,303	28,478		28,478	U
150	0605805A	Munitions Standardization, Effectiveness and Safety	06	56,543	64,027		64,027	32,604		32,604	U
151	0605857A	Environmental Quality Technology Mgmt Support	06	5,019	2,611		2,611	3,186		3,186	U
152	0605898A	Management HQ - R&D	06	53,476	49,583		49,583	48,955		48,955	U
153	0909999A	Financing for Cancelled Account Adjustments	06	126							U
		RDT&E Management Support		1,317,280	1,015,139		1,015,139	1,027,542		1,027,542	
154	0603778A	MLRS Product Improvement Program	07	93,621	17,103		17,103	18,397		18,397	U
155	0603813A	TRACTOR PULL	07					9,461		9,461	U
156	0607131A	Weapons and Munitions Product Improvement Programs	07					4,945		4,945	U

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Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	S e c
157	0607133A	TRACTOR SMOKE	07					7,569		7,569	U
158	0607135A	Apache Product Improvement Program	07		86,099		86,099	69,862		69,862	U
159	0607136A	Blackhawk Product Improvement Program	07		48,446		48,446	66,653		66,653	U
160	0607137A	Chinook Product Improvement Program	07		35,424		35,424	37,407		37,407	U
161	0607138A	Fixed Wing Product Improvement Program	07		819		819	1,151		1,151	U
162	0607139A	Improved Turbine Engine Program	07		49,328		49,328	51,164		51,164	U
163	0607140A	Emerging Technologies from NIE	07		4,916		4,916	2,481		2,481	U
164	0607141A	Logistics Automation	07	3,592	3,652		3,652	1,673		1,673	U
165	0607664A	Biometric Enabling Capability (BEC)	07		1,332		1,332				U
166	0607665A	Family of Biometrics	07	7,160				13,237		13,237	U
167	0607865A	Patriot Product Improvement	07	33,935	57,962		57,962	105,816		105,816	U
168	0102419A	Aerostat Joint Project - EMD	07	58,383							U
169	0202429A	Aerostat Joint Project - COCOM Exercise	07	22,252	43,248		43,248	40,565		40,565	U
170	0203726A	Adv Field Artillery Tactical Data System	07	24,120	1,273		1,273				U
171	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07		36,658		36,658	35,719		35,719	U
172	0203735A	Combat Vehicle Improvement Programs	07	171,543	297,850		297,850	257,167		257,167	U
173	0203740A	Maneuver Control System	07	35,337	45,065		45,065	15,445		15,445	U
174	0203744A	Aircraft Modifications/Product Improvement Programs	07	227,333							U

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Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	S e c
175	0203752A	Aircraft Engine Component Improvement Program	07	309	381		381	364		364	U
176	0203758A	Digitization	07	5,978	5,993		5,993	4,361		4,361	U
177	0203801A	Missile/Air Defense Product Improvement Program	07	1,830	5,112		5,112	3,154		3,154	U
178	0203802A	Other Missile Product Improvement Programs	07	60,005	38,323		38,323	35,951		35,951	U
179	0203808A	TRACTOR CARD	07	18,768	22,691		22,691	34,686		34,686	U
180	0205402A	Integrated Base Defense - Operational System Dev	07		4,362		4,362	10,750		10,750	U
181	0205410A	Materials Handling Equipment	07		834		834	402		402	U
182	0205412A	Environmental Quality Technology - Operational System Dev	07		280		280				U
183	0205456A	Lower Tier Air and Missile Defense (AMD) System	07		78,720		78,720	64,159		64,159	U
184	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07		45,353		45,353	17,527		17,527	U
185	0208053A	Joint Tactical Ground System	07	14,504	10,209		10,209	20,515		20,515	U
187	0303028A	Security and Intelligence Activities	07	7,596	12,518		12,518	12,368		12,368	U
188	0303140A	Information Systems Security Program	07	9,040	14,167		14,167	31,154		31,154	U
189	0303141A	Global Combat Support System	07	39,834	4,525		4,525	12,274		12,274	U
190	0303142A	SATCOM Ground Environment (SPACE)	07	17,644	11,006		11,006	9,355		9,355	U
191	0303150A	WWMCCS/Global Command and Control System	07	13,852	2,150		2,150	7,053		7,053	U
193	0305179A	Integrated Broadcast Service (IBS)	07					750		750	U

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

Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	S e c
194	0305204A	Tactical Unmanned Aerial Vehicles	07	33,515	22,870		22,870	13,225		13,225	U
195	0305206A	Airborne Reconnaissance Systems	07					22,870		22,870	U
196	0305208A	Distributed Common Ground/Surface Systems	07	27,607	20,155		20,155	25,592		25,592	U
197	0305219A	MQ-1C Gray Eagle UAS	07	13,074	46,472		46,472				U
198	0305232A	RQ-11 UAV	07	5,984							U
199	0305233A	RQ-7 UAV	07	12,025	16,389		16,389	7,297		7,297	U
200	0307665A	Biometrics Enabled Intelligence	07	7,443	1,973		1,973				U
201	0310349A	Win-T Increment 2 - Initial Networking	07		3,247		3,247	3,800		3,800	U
202	0708045A	End Item Industrial Preparedness Activities	07	54,392	76,187		76,187	48,442		48,442	U
9999	9999999999	Classified Programs		4,717	4,802		4,802	4,536		4,536	U
		Operational Systems Development		1,025,393	1,177,894		1,177,894	1,129,297		1,129,297	
Total Research, Development, Test & Eval, Army				7,124,298	6,673,146	2,000	6,675,146	6,924,959	1,500	6,926,459	

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80	05	0604290A	Mid-tier Networking Vehicular Radio (MNVR).....	76
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82	05	0604328A	TRACTOR CAGE.....	99
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86	05	0604622A	Family of Heavy Tactical Vehicles.....	189
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92	05	0604741A	Air Defense Command, Control and Intelligence - Eng Dev.....	308
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94	05	0604746A	Automatic Test Equipment Development.....	353
95	05	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev.....	372
96	05	0604780A	Combined Arms Tactical Trainer (CATT) Core.....	394
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106	05	0604822A	General Fund Enterprise Business System (GFEBS).....	832
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Distributive Interactive Simulations (DIS) - Eng Dev	0604760A	95	05.....	372
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Family of Heavy Tactical Vehicles	0604622A	86	05.....	189
Firefinder	0604823A	107	05.....	844
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Mid-tier Networking Vehicular Radio (MNVR)	0604290A	80	05.....	76
National Capabilities Integration (MIP)	0605766A	125	05.....	1113
Night Vision Systems - Eng Dev	0604710A	89	05.....	221
Non-System Training Devices - Eng Dev	0604715A	91	05.....	286
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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604201A / <i>Aircraft Avionics</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	64.396	41.236	12.939	-	12.939	2.210	6.370	6.827	8.096	Continuing	Continuing
C97: <i>ACFT Avionics</i>	-	25.353	6.491	1.858	-	1.858	1.444	5.592	6.038	6.108	Continuing	Continuing
VU3: <i>Networking And Mission Planning</i>	-	39.043	34.745	11.081	-	11.081	0.766	0.778	0.789	1.988	Continuing	Continuing

Note

FY2014: -\$9,659K Below Threshold Reprogramming Actions

FY2015: +\$4,000K Multiple Congressional Marks. +\$20,000K Degraded Visual Environment UH-60L demonstration; -\$15,000K JTRS integration delays; -\$1,000K DGNS upgrade forward financing.

FY2016: +\$9,270K Aviation Logistics Enterprise-Platform; +\$1,811K Aircraft Notebook; -\$12K miscellaneous budget reduction.

A. Mission Description and Budget Item Justification

The FY 2016 budget request funds the development of Aircraft Avionics systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Program Element support research, development, and test efforts in the Engineering and Manufacturing Development phases of these systems.

The Airborne Maritime Fixed - Aviation (AMF-A) is the transformational system that provides Army Aviation interoperability capability for Future Force and Joint Force operations. The AMF-A integration effort provides for the non-recurring engineering required to integrate and qualify the AMF-A certified radios with Link 16 and/or other advanced networking waveforms into the AH-64E and Unmanned Aircraft Systems (UAS). Funding in FY 2016 continues integration activities to install and qualify AMF-A certified networking radios on the AH-64E and Shadow UAS platforms and also supports continued development of common radio control software and qualified airborne AMF-A antennas for use on multiple platforms. The Shadow UAS solution will be incorporated into the Shadow Communications Relay Payload mission equipment package.

The Doppler Global Positioning System Navigation System (DGNS) Upgrade program completes system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules map display. It also prepares Engineering Change Proposals (ECP) to the existing DGNS ASN-128D Line Replaceable Units (LRU) as a result of those trade studies. The effort also derives DGNS compliance matrices for current and planned Global Air Traffic Management capabilities for the upcoming decade. The DGNS upgrade continues with execution of Non-Recurring Engineering for Computer Display Unit and Signal Data Converter LRU ECP packages. The ASN-128D CDU Upgrade replaces the current CDU faceplate with a touch screen display, provides a moving navigation map capability and optimized pilot interface to augment existing Instrument Flight Rules capability and promote safer flight operations.

The Aviation Data Exploitation Capability (ADEC) is an Army aviation automated information system program providing specific capabilities needed at the aviation unit level to implement and support improvements within aviation operations, safety, and training to increase operational effectiveness and situational awareness at all

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				
<p>command echelons. ADEC provides a common and interoperable capability required to implement the DoD mandated Military Flight Operations Quality Assurance processes. ADEC will standardize flight scheduling/management, risk management, mission approval, and flight data analysis and visualization. ADEC provides interfaces to Centralized Aviation Flight Records System and Aviation Logistics Enterprise- Platform to reduce data entry and the information technology footprint while enabling disconnected and split based operations.</p> <p>The Aircraft Notebook (ACN) is an Army aviation automated information system program required to streamline the completion of aviation maintenance activities and the documentation required to maintain airworthiness for all Army aircraft. ACN implements The Army Maintenance Management System - Aviation digital logbook functionality and integrates with CAFRS and ALE-P to reduce manual entries and increase data accuracy. ACN reduces the information technology footprint within an aviation unit by integrating multiple software applications such as platform software applications, interactive electronic technical manuals, and condition based maintenance plus tools onto one hardware platform.</p> <p>The Degraded Visual Environment (DVE) is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrew's visibility due to atmospheric obscurants. DVE will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. DVE will consist of integrated rotorcraft pilotage augmentation systems, sensor(s), software, software related hardware, and pilot to system interfaces and cueing devices. DVE will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight.</p> <p>The Aviation Logistics Enterprise Platform (ALE-P) is the single logistics information system for all of Army aviation and serves as an extension to Global Combat Support System-Army (GCSS-Army). ALE-P replaces the Unit Level Logistics System-Aviation (Enhanced) and the Unmanned Aviation Systems-Initiative systems. ALE-P provides necessary interfaces to GCSS-Army and other enterprise systems at Logistics Support Activity, Aviation and Missile Command, and Program Executive Office Aviation. ALE-P interfaces with the ACN and ADEC at the unit level to maintain continuous airworthiness and aircraft historical records and provides the maintenance/readiness posture to the commander.</p>						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		76.547	37.246	1.870	-	1.870
Current President's Budget		64.396	41.236	12.939	-	12.939
Total Adjustments		-12.151	3.990	11.069	-	11.069
• Congressional General Reductions		-	-0.010			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	4.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-9.659	-			
• SBIR/STTR Transfer		-2.492	-			
• Adjustments to Budget Years		-	-	11.069	-	11.069

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) C97 / ACFT Avionics			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
C97: ACFT Avionics	-	25.353	6.491	1.858	-	1.858	1.444	5.592	6.038	6.108	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The FY 2016 budget request funds the development of Aircraft Avionics systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Project support research, development, and test efforts in the Engineering and Manufacturing Development phases of these systems.

The Airborne Maritime Fixed - Aviation (AMF-A) is the transformational system that provides Army Aviation interoperability capability for Future Force and Joint Force operations. The AMF-A integration effort provides for the non-recurring engineering required to integrate and qualify the AMF-A certified radios with Link 16 and/or other advanced networking waveforms into the AH-64E and Unmanned Aircraft Systems (UAS). Funding in FY 2016 continues integration activities to install and qualify AMF-A certified networking radios on the AH-64E and Shadow UAS platforms and also supports continued development of common radio control software and qualified airborne AMF-A antennas for use on multiple platforms. The Shadow UAS solution will be incorporated into the Shadow Communications Relay Payload mission equipment package.

The Doppler Global Positioning System Navigation System (DGNS) Upgrade program completes system engineering trade studies to reduce space, weight, and power with the introduction of new navigation support capabilities such as inertial sensor, MIL-STD-1553 interface card, and Instrument Flight Rules map display. It also prepares Engineering Change Proposals (ECP) to the existing DGNS ASN-128D Line Replaceable Units (LRU) as a result of those trade studies. The effort also derives DGNS compliance matrices for current and planned Global Air Traffic Management (GATM) capabilities for the upcoming decade. The DGNS upgrade continues with execution of Non-Recurring Engineering for Computer Display Unit (CDU) and Signal Data Converter (SDC) LRU ECP packages. The ASN-128D CDU Upgrade replaces the current CDU faceplate with a touch screen display, provides a moving navigation map capability and optimized pilot interface to augment existing Instrument Flight Rules (IFR) capability and promote safer flight operations.

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

	FY 2014	FY 2015	FY 2016
Title: Airborne Maritime Fixed (AMF-A) integration and qualification for Apache AH-64E and UAS platforms.	5.804	3.113	1.858
Description: The AMF-A integration effort provides for the non-recurring engineering required to integrate and qualify the AMF-A compliant radios and/or other advanced networking waveforms into the AH-64E and UAS platforms for both production cut-in and retrofit activities.			
FY 2014 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics			Project (Number/Name) C97 / ACFT Avionics					
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016		
Initiated AMF-A integration activities on AH-64E for implementation of a networking radio with Soldier Radio Waveform and/ or other advanced networking waveform. Continued Link 16 integration and qualification activities for AH-64E. Continued development of AMF-A antennas and associated co-site analysis tasks. Completed AMF-A Radio Control Software Development. Completed AMF-A integration onto the Shadow platform. FY 2015 Plans: Continue integration activities to install and qualify AMF-A Link 16 and certified networking radios on the AH-64E. Continue development of qualified airborne AMF-A antennas for use on multiple platforms. FY 2016 Plans: Continue development of AMF-A antennae and associated Co-Site Analysis tasks.											
Title: Doppler Global Positioning System Navigation System (DGNS) Upgrade Description: The DGNS Upgrade effort provides for the non-recurring engineering required to develop and qualify new navigation capabilities that meets emerging GATM navigation requirements and promotes safer flight operations. The DGNS Upgrade consists of engineering changes to the CDU and SDC avionics components of the DGNS. The CDU Upgrade replaces the current CDU faceplate with a touch screen display, provides a moving navigation map capability and optimized pilot interface to augment existing IFR capability and promote safer flight operations. The SDC Upgrade replaces the current GPS receiver to support Wide Area Augmentation System and GPS precision approach as well as implementing emerging GATM Area Navigation requirements. FY 2014 Accomplishments: Initiated CDU Upgrade non-recurring engineering effort with hardware and software development from requirements definition through Critical Design Review. FY 2015 Plans: Continue CDU Upgrade non-recurring engineering effort with software implementation, hardware fabrication, DGNS system integration, and full airworthiness component level qualification testing.							19.549	3.378	-		
Accomplishments/Planned Programs Subtotals							25.353	6.491	1.858		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• COMMS, NAV Surveillance: COMMS, NAV Surveillance	74.613	115.795	82.904	-	82.904	100.638	110.123	107.821	98.238	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) C97 / ACFT Avionics			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• GATM Rotary Wing: GATM Rotary Wing	38.310	41.821	33.890	-	33.890	56.500	61.166	60.528	60.865	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
This project is comprised of multiple systems supporting aircraft avionics. While the detailed acquisition strategy varies from program to program, the general strategy is for each individual program to complete the development and testing efforts in coordination with the aircraft platforms on integration issues, use the various contracts of the aircraft platforms original equipment manufacturers on integration efforts, and utilize the Aviation & Missile Research, Development, and Engineering Center for software development. This requires the use of various contract methods and types to accomplish the aircraft avionics development efforts. All required acquisition program documentation is prepared.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) C97 / ACFT Avionics					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Services (AMF-A)	Reqn	PM AME : Redstone Arsenal, AL	0.600	0.622	Nov 2013	0.654	Oct 2014	0.676	Nov 2015	-		0.676	Continuing	Continuing	Continuing
Subtotal			0.600	0.622		0.654		0.676		-		0.676	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AMF-A Common Radio Control Software Development	Various	AMRDEC Software Engineering Directorate : Redstone Arsenal, AL	5.398	2.867	Mar 2014	-		-		-		-	-	8.265	8.265
AMF-A Antenna Development and Co-Site Analysis	C/CPFF	AMRDEC, Prototype Integration Facility : Redstone Arsenal, AL	3.658	0.426	Mar 2014	0.500	Mar 2015	1.182	Mar 2016	-		1.182	Continuing	Continuing	Continuing
AMF-A Shadow Communication Relay Package	C/FFP	AMS : Huntsville, AL	3.356	1.889	Aug 2014	-		-		-		-	-	5.245	9.958
DGNS Upgrade	C/CPFF	BAE Systems : Wayne, NJ	11.091	19.549	Jul 2014	3.378	Mar 2015	-		-		-	-	34.018	-
AMF-A Link-16 and Networking Waveform Integration and Qualification onto AH-64E	SS/CPFF	Boeing : Mesa, AZ	29.989	-		1.959	Mar 2015	-		-		-	-	31.948	-
Subtotal			53.492	24.731		5.837		1.182		-		1.182	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			54.092	25.353		6.491		1.858		-		1.858	-	-	-
Remarks															

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604201A / <i>Aircraft Avionics</i>	Project (Number/Name) C97 / <i>ACFT Avionics</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AMF-A AH-64E Link 16 and Networking Waveform Integration and Qualification AH-64	1	2015	1	2016
DGNS AN/ASN-128D Upgrade	4	2014	2	2016
AMF-A Antenna Development and Co-Site Analysis	2	2011	2	2022
AMF-A Common Radio Control Software Development and Qualification	1	2011	2	2015
AMF-A Shadow Communications Relay Package	1	2012	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
VU3: Networking And Mission Planning	-	39.043	34.745	11.081	-	11.081	0.766	0.778	0.789	1.988	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The FY 2016 budget request funds the development of Networking and Mission Planning systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Project support research, development, and test efforts in the Engineering and Manufacturing Development (EMD) phases of these systems.

The Aviation Data Exploitation Capability (ADEC) is an Army aviation automated information system program providing specific capabilities needed at the aviation unit level to implement and support improvements within aviation operations, safety, and training to increase operational effectiveness and situational awareness at all command echelons. ADEC provides a common and interoperable capability required to implement the DoD mandated Military Flight Operations Quality Assurance processes. ADEC will standardize flight scheduling/management, risk management, mission approval, and flight data analysis and visualization. ADEC provides interfaces to Centralized Aviation Flight Records System (CAFRS) and Aviation Logistic Enterprise- Platform (ALE-P) to reduce data entry and the information technology footprint while enabling disconnected and split based operations.

The Aircraft Notebook (ACN) is an Army aviation automated information system program required to streamline the completion of aviation maintenance activities and the documentation required to maintain airworthiness for all Army aircraft. ACN implements The Army Maintenance Management System - Aviation (TAMMS-A) digital logbook functionality and integrates with CAFRS and ALE-P to reduce manual entries and increase data accuracy. ACN reduces the information technology footprint within an aviation unit by integrating multiple software applications such as platform software applications, interactive electronic technical manuals, and condition based maintenance plus tools onto one hardware platform.

The Degraded Visual Environment (DVE) is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrew's visibility due to atmospheric obscurants. DVE will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. DVE will consist of integrated rotorcraft pilotage augmentation systems, sensor(s), software, software related hardware, and pilot to system interfaces and cueing devices. DVE will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight.

The ALE-P is the single logistics information system for all of Army aviation and serves as an extension to Global Combat Support System-Army (GCSS-Army). ALE-P replaces the Unit Level Logistics System-Aviation (Enhanced) (ULLS-A[E]) and the Unmanned Aviation Systems-Initiative (UAS-I) systems. ALE-P provides necessary interfaces to GCSS-Army and other enterprise systems at Logistics Support Activity (LOGSA), Aviation and Missile Command (AMCOM), and Program Executive Office (PEO) Aviation. ALE-P interfaces with the ACN and ADEC at the unit level to maintain continuous airworthiness and aircraft historical records and provides the maintenance/readiness posture to the commander.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics		Project (Number/Name) VU3 / Networking And Mission Planning	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: Aviation Data Exploitation Capability (ADEC) Description: The ADEC is an Army aviation automated information system program providing specific capabilities needed at the aviation unit level to implement and support improvements within aviation operations, safety, and training to increase operational effectiveness and situational awareness at all command echelons. ADEC provides a common and interoperable capability required to implement the DoD mandated Military Flight Operations Quality Assurance processes. ADEC will standardize flight scheduling/management, risk management, mission approval, and flight data analysis and visualization. ADEC provides interfaces to CAFRS and ALE-P to reduce data entry and information technology footprint while enabling disconnected and split based operations. FY 2014 Accomplishments: Continued design, development, integration, and testing of the hardware and software needed to realize the ADEC system. Continued the advanced component development of Phase I applications. FY 2015 Plans: Complete ADEC design, development, integration, and developmental testing of the hardware and software.			9.534	8.950	-
Title: Degraded Visual Environment Description: The DVE is required to reduce personnel and rotorcraft losses while conducting both tactical and training missions in environments that restrict or severely reduce the aircrew's visibility due to atmospheric obscurants. DVE will improve safety, reduce risk and add flexibility to aviation units by enhancing situational awareness through real-time detection and warning of terrain, obstacles and hazards. DVE will consist of integrated rotorcraft pilotage augmentation systems, sensor(s), software, software related hardware, and pilot to system interfaces and cueing devices. DVE will fuse a synthetic vision avionics backbone with aircraft state data and obscurant penetrating sensor(s) to provide a single rotorcraft capability for ground taxi, hover, takeoff and landing modes of flight. FY 2014 Accomplishments: Conducted technical design and development of DVE. FY 2015 Plans: Conduct technical design and development of DVE.			14.000	20.000	-
Title: Aviation Logistics Enterprise-Platform (ALE-P) Description: The ALE-P is the single logistics information system for all of Army aviation and serves as an extension to GCSS-Army. ALE-P replaces the ULLS-A[E] and the UAS-I systems. ALE-P provides necessary interfaces to GCSS-Army and other enterprise systems at LOGSA, AMCOM, and Program Executive Office (PEO) Aviation. ALE-P interfaces with the ACN and ADEC			6.933	3.815	9.270

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
<p>at the unit level to maintain continuous airworthiness and aircraft historical records and provides the maintenance/readiness posture to the commander.</p> <p>FY 2014 Accomplishments: Continued development, test, and integration of ALE-P hardware and software and conducted OT&E activities.</p> <p>FY 2015 Plans: Continue development, test, and integration of ALE-P hardware and software and conduct OT&E activities.</p> <p>FY 2016 Plans: Complete development, test, and integration of ALE-P hardware and software and OT&E activities.</p>												
<p>Title: Aircraft Notebook (ACN)</p> <p>Description: The ACN is an Army aviation automated information system program required to streamline the completion of aviation maintenance activities and the documentation required to maintain airworthiness for all Army aircraft. ACN implements TAMMS-A digital logbook functionality and integrates with CAFRS and ALE-P to reduce manual entries and increase data accuracy. ACN reduces the information technology footprint within an aviation unit by integrating multiple software applications such as platform software applications, interactive electronic technical manuals, and condition based maintenance plus tools onto one hardware platform.</p> <p>FY 2014 Accomplishments: Continued ACN design, development, integration, and testing of the software required to achieve materiel release.</p> <p>FY 2015 Plans: Continue development and integration of ACN hardware and software and Operational Test and Evaluation activities.</p> <p>FY 2016 Plans: Complete development and integration of ACN hardware and software and Operational Test and Evaluation activities.</p>										8.576	1.980	1.811
Accomplishments/Planned Programs Subtotals										39.043	34.745	11.081
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• Network and Mission Plan: Network and Mission Plan	59.326	105.380	112.807	-	112.807	102.378	137.596	143.529	146.959	Continuing	Continuing	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics	Project (Number/Name) VU3 / Networking And Mission Planning
D. Acquisition Strategy This project is comprised of multiple systems supporting aircraft avionics. While the detailed acquisition strategy varies from program to program, the general strategy is for each individual program to complete the development and testing efforts in coordination with the aircraft platforms on integration issues, use the various contracts of the aircraft platforms original equipment manufacturers on integration efforts, and utilize the Aviation & Missile Research, Development, and Engineering Center for software development. This requires the use of various contract methods and types to accomplish the aircraft avionics development efforts. All required acquisition program documentation is prepared.		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (ADEC)	Various	AMCOM : Redstone Arsenal, AL	0.062	2.272	Oct 2013	1.712	Jan 2015	-		-		-	-	4.046	-
PM Support (ACN)	Various	AMCOM : Redstone Arsenal, AL	1.799	1.223	Oct 2013	0.380	Feb 2015	0.439	Oct 2015	-		0.439	-	3.841	-
PM Support (ALE-P)	Various	AMCOM : Redstone Arsenal, AL	0.000	0.705	May 2015	0.991	Sep 2015	1.548	May 2016	-		1.548	-	3.244	-
PM Support (DVE)	Various	AMCOM : Redstone Arsenal, AL	1.396	0.800	May 2015	0.800	Sep 2015	-		-		-	-	2.996	-
Subtotal			3.257	5.000		3.883		1.987		-		1.987	-	14.127	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Qualify ADEC software and hardware	Various	Various : Various	1.546	5.200	Apr 2014	4.603	Apr 2015	-		-		-	-	11.349	-
Qualify ACN software and hardware	TBD	Various : Various	1.078	5.857	Jul 2014	0.360	Mar 2015	1.006	Mar 2016	-		1.006	-	8.301	-
Develop and qualify the software and hardware for ALE-P.	Various	Various : Various	3.272	4.647	May 2015	2.785	Sep 2015	5.101	Feb 2016	-		5.101	-	15.805	-
Develop and qualify the software and hardware for DVE	TBD	Various : Various	0.000	6.720	Jun 2015	9.600	Sep 2015	-		-		-	Continuing	Continuing	Continuing
Subtotal			5.896	22.424		17.348		6.107		-		6.107	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering, Logistics, and Technical Support (ADEC)	Various	Various : Various	0.144	0.491	Feb 2014	0.558	Feb 2015	-		-		-	-	1.193	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering, Logistics, and Technical Support (ACN)	Various	Various : Various	0.206	0.129	Feb 2014	0.285	Mar 2015	0.151	Mar 2016	-		0.151	-	0.771	-
System Engineering, Logistics, and Technical Support (ALE-P)	Various	Various : Various	0.000	1.387	May 2015	0.039	Sep 2015	0.836	Feb 2016	-		0.836	-	2.262	-
System Engineering, Logistics, and Technical Support (DVE)	Various	Various : Various	0.000	2.000	May 2014	2.857	Sep 2015	-		-		-	-	4.857	-
Subtotal			0.350	4.007		3.739		0.987		-		0.987	-	9.083	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ADEC	Various	AMCOM : Redstone Arsenal, AL	0.309	1.571	Feb 2014	2.077	Feb 2015	-		-		-	-	3.957	-
ACN	TBD	AMCOM : Redstone Arsenal, AL	2.056	1.367	Apr 2014	0.955	Mar 2015	0.215	Mar 2016	-		0.215	-	4.593	-
ALE-P	TBD	AMCOM : Redstone Arsenal, AL	0.000	0.194	May 2015	-		1.785	Feb 2016	-		1.785	-	1.979	-
DVE	TBD	TBD : TBD	0.000	4.480	May 2015	6.743	Sep 2015	-		-		-	-	11.223	-
Subtotal			2.365	7.612		9.775		2.000		-		2.000	-	21.752	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			11.868	39.043		34.745		11.081		-		11.081	-	-	-
Remarks															

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Army

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604201A / <i>Aircraft Avionics</i>	Project (Number/Name) VU3 / <i>Networking And Mission Planning</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Degraded Visual Environment (DVE)	4	2011	4	2020
Develop hardware and software (ADEC)	2	2011	4	2015
Milestone B/C (ADEC)	4	2015	4	2015
Develop hardware and software (ALE-P)	2	2013	4	2016
Milestone B (ALE-P)	4	2014	1	2017
Develop hardware and software (ACN)	1	2012	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604220A I Armed, Deployable Helos							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	26.000	-	-	-	-	-	-	-	-	-	26.000
538: Kiowa Warrior	-	26.000	-	-	-	-	-	-	-	-	-	26.000
53Z: Armed Scout Helicopter	-	-	-	-	-	-	-	-	-	-	-	-

Note

Change Summary Explanation:
No FY2015 or beyond funds requested.

A. Mission Description and Budget Item Justification

The Army and OSD have coordinated a funding position removing RDTE funding from the Kiowa Warrior (538) in FY15 and beyond. ASH PM planned FY14 requirements for Kiowa Warrior (538) within the RDTE funds received of \$25.999M. The FY14 funding incorporates required design improvements to the Single Channel FADEC Upgrade Electronic Control Unit (SCFU ECU) to improve safety and reliability of the OH-58D engine fuel control. The funding also provides for the support of termination efforts of the OH-58F Kiowa Warrior Cockpit and Sensor Upgrade Program (CASUP).

No funding was received in FY14 for Armed Scout Helicopter Program (53Z).

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	69.807	-	-	-	-
Current President's Budget	26.000	-	-	-	-
Total Adjustments	-43.807	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 3	-43.807	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604220A / Armed, Deployable Helos				Project (Number/Name) 538 / Kiowa Warrior			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
538: Kiowa Warrior	-	26.000	-	-	-	-	-	-	-	-	-	26.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The OH-58D Kiowa Warrior (KW) is a two-seat, single-engine, observation, scout/attack helicopter with four main rotor blades. It utilizes a thermal-imaging system and a laser rangefinder/designator in a Mast Mounted Sight (MMS) situated above the main rotor system. The aircraft is equipped with a variety of weapon systems including: HELLFIRE, 2.75-inch rockets, and a .50-caliber machine gun. The aircraft operates autonomously at standoff ranges providing armed reconnaissance, command and control, and target acquisition/designation for Apache helicopters and other airborne weapons platforms in day, night, and adverse-weather conditions. Sensor imagery from compatible Unmanned Aerial Systems (UAS) and manned aircraft can be received and relayed to other aircraft or ground stations. The Active Army and the National Guard fly Kiowa Warriors.

The Army and OSD have coordinated a funding position removing RDTE funding from the Kiowa Warrior (538) in FY15 and beyond. ASH PM planned FY14 requirements within the RDTE funds received of \$25.999M. The FY14 funding incorporates required design improvements to the Single Channel FADEC Upgrade Electronic Control Unit (SCFU ECU) and related products to improve safety and reliability of the OH-58D engine fuel control and component qualification of the Dual Channel FADEC. The funding also provides for the support of termination efforts of the OH-58F Kiowa Warrior Cockpit and Sensor Upgrade Program (CASUP).

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

	FY 2014	FY 2015	FY 2016
Title: Development and Integration Description: Development and Integration Efforts FY 2014 Accomplishments: Development and Integration Efforts	1.500	-	-
Title: Engineering Support Activities Description: Engineering Support Activities FY 2014 Accomplishments: Engineering Support Activities	0.300	-	-
Title: Test and Evaluation Description: Test and Evaluation FY 2014 Accomplishments:	1.049	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604220A / <i>Armed, Deployable Helos</i>			Project (Number/Name) 538 / <i>Kiowa Warrior</i>				
B. Accomplishments/Planned Programs (\$ in Millions)											
							FY 2014	FY 2015	FY 2016		
Test and Evaluation Efforts to qualify components of the Dual Channel FADEC.											
Title: Program Management							23.151	-	-		
Description: Program Management											
FY 2014 Accomplishments: Program Management for termination of CASUP											
Accomplishments/Planned Programs Subtotals							26.000	-	-		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• (AZ2200): <i>Kiowa Warrior (AZ2200)</i>	108.282	-	-	-	-	-	-	-	-	-	108.282
Remarks											
The Army and OSD have coordinated a funding position removing APA funding from the Kiowa Warrior (AZ2200) in FY15 and beyond.											
Received \$25.0M of APA funding in FY14 AZ2200.											
No APA/OCO funds were received in FY14 for A02345.											
D. Acquisition Strategy N/A											
E. Performance Metrics N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604220A / <i>Armed, Deployable Helos</i>	Project (Number/Name) 538 / <i>Kiowa Warrior</i>
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Various Activities : Various Activities	28.430	23.151	Jan 2014	-		-		-		-	-	51.581	-
Subtotal			28.430	23.151		-		-		-		-	-	51.581	-

Remarks

Funding will provide Armed Scout Helicopter (ASH) Government and contractor Program Management, Engineering, and Logistical support. Funding provides for Program Management activities associated with terminating program. All other KW CASUP program activities were terminated through guidance issued by the Acquisition Decision Memorandum (ADM) in March 2014.

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development and Integration	Various	Various Activities : Honeywell Inc. /Rolls Royce/Triumph	266.033	1.500	Mar 2015	-		-		-		-	-	267.533	-
Subtotal			266.033	1.500		-		-		-		-	-	267.533	-

Remarks

Funding will provide both contractor and in-house development and integration efforts. Development and Integration activities will be performed by Honeywell Inc, Rolls Royce, and Triumph. KW CASUP program activities were terminated through guidance issued by the Acquisition Decision Memorandum (ADM) in March 2014.

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support Activities	Various	Various Activities : AMRDEC, AED & SED	52.345	0.300	Mar 2014	-		-		-		-	-	52.645	-
Subtotal			52.345	0.300		-		-		-		-	-	52.645	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604220A / <i>Armed, Deployable Helos</i>	Project (Number/Name) 538 / <i>Kiowa Warrior</i>
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Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost		Cost To Complete	Total Cost	Target Value of Contract

Remarks
Funding will provide engineering support activities performed by Aviation and Missile Research and Development Center (AMRDEC), Aviation Engineering Directorate (AED) and Software Engineering Directorate (SED). KW CASUP program activities were terminated through guidance issued by the Acquisition Decision Memorandum (ADM) in March 2014.

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost		Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various Activities : RTC, AATD, DTC, OTC	14.384	1.049	Feb 2015	-		-		-		-		-	15.433	-
Subtotal			14.384	1.049		-		-		-		-		-	15.433	-

Remarks
Funding will provide test and evaluation activities conducted by Redstone Test Center (RTC), Aviation Applied Technology Directorate (AATD), Developmental Test Command (DTC), and Operational Test Command (OTC). KW CASUP program activities were terminated through guidance issued by the Acquisition Decision Memorandum (ADM) in March 2014.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	361.192	26.000	-	-	-	-	-	387.192	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604220A / Armed, Deployable Helos								Project (Number/Name) 538 / Kiowa Warrior										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contract in Termination					N/A																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604220A / Armed, Deployable Helos	Project (Number/Name) 538 / Kiowa Warrior

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contract in Termination	3	2014	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604220A / Armed, Deployable Helos				Project (Number/Name) 53Z / Armed Scout Helicopter			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
53Z: Armed Scout Helicopter	-	-	-	-	-	-	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the Kiowa Warrior replacement aircraft is to provide a robust reconnaissance and security capability for the Joint Combined arms air-ground maneuver team. It will be a direct replacement for the aging OH-58D/F Kiowa Warrior fleet.

The aircraft will provide a highly deployable, reconnaissance and security capability that will employ immediately upon arrival into theater. The platform will address the capability gaps of interoperability, survivability, versatility, agility, lethality, and sustainability to ensure interoperability over extended ranges. The platform enhances mission effectiveness throughout the operational environment, and focuses on system survivability against threats operating in the contemporary operational environment, while reducing the logistical burden on the tactical unit. The fundamental purpose is to perform reconnaissance and to provide security in combat operations. In doing so, it improves the commander's ability to maneuver and concentrate superior combat power against the enemy at the decisive time and place.

No funding was appropriated in the FY14 budget for Armed Scout Helicopter (53Z).

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

N/A

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

N/A

Remarks

D. Acquisition Strategy

Not applicable for this item.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604220A / Armed, Deployable Helos				Project (Number/Name) 53Z / Armed Scout Helicopter					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Voluntary Flight Demonstration	Various	Various : Various	7.940	-		-		-		-		-	-	7.940	-
Subtotal			7.940	-		-		-		-		-	-	7.940	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AAS AoA and Milestone Support/Risk Reduction	Various	Various : Various	13.892	-		-		-		-		-	-	13.892	-
Subtotal			13.892	-		-		-		-		-	-	13.892	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			21.832	-		-		-		-		-	-	21.832	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																	Date: February 2015																				
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604220A / Armed, Deployable Helos								Project (Number/Name) 53Z / Armed Scout Helicopter																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
REQUIREMENT DEVELOPMENT										Requirement Development																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604220A / Armed, Deployable Helos	Project (Number/Name) 53Z / Armed Scout Helicopter

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
REQUIREMENT DEVELOPMENT	1	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604270A / Electronic Warfare Development								
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
Total Program Element	-	134.260	5.999	18.843	-	18.843	16.413	31.087	32.862	33.191	Continuing	Continuing	
665: A/C Surv Equip Dev	-	11.874	-	-	-	-	-	-	-	-	Continuing	Continuing	
DX5: Electronic Warfare And Management Tool	-	0.013	1.966	8.641	-	8.641	6.064	20.623	20.840	21.046	Continuing	Continuing	
VS6: Integrated Electronic Warfare Systems	-	19.636	4.033	10.202	-	10.202	10.349	10.464	12.022	12.145	Continuing	Continuing	
VU7: Common Missile Warning System	-	2.811	-	-	-	-	-	-	-	-	-	2.811	
VU8: Common Infrared Counter Measure	-	99.926	-	-	-	-	-	-	-	-	-	99.926	

Note

Projects 665, VU7, and VU8 were realigned to PE 0605035A Aircraft Survivability Development in FY15 and beyond for more efficient, effective program management.

A. Mission Description and Budget Item Justification

FY 2016 budget request funds Electronic Warfare Development. This program element (PE) encompasses engineering and manufacturing development for tactical electronic warfare (EW). The Integrated Electronic Warfare System (IEWS) is a system of systems capability set that integrates electronic attack, protect and support functions to dramatically improve the ability to seize, retain, and exploit an advantage within the electromagnetic spectrum (EMS). It is based on a modular, scalable and open architecture to allow Army Brigade Combat Team (BCT) and Joint Force Commander's to tailor capability responses against a variety of EW threats/scenarios.

The IEWS capability set is structured along three program lines of effort: 1) Project VS6 IEWS is also known as Defensive Electronic Attack (DEA), 2) Project DX5 is Electronic Warfare Planning and Management Tools (EWPMT), and 3) in a future year Project DX6 will be Multi-Function EW (MFEW). Project VS6 - DEA will provide force protection to vehicles, dismounted troops and fixed site locations against radio controlled improvised explosive device (RCIED) and electronic support measures for situational awareness. Project DX5 - EWPMT will provide the Electronic Warfare Officer (EWO) planning capabilities to coordinate, manage, and deconflict the use of the Electromagnetic Spectrum and synchronize spectrum operations within the Cyber Electromagnetic Activities (CEMA) cell. EWPMT will integrate data elements from Mission Command, Intelligence, and Fires to achieve a Common Operating Picture (COP) of the Electromagnetic Operational Environment. In a future year, Project DX6 - MFEW will provide offensive and defensive electronic attack and electronic support capabilities in a system of systems construct to include ground and airborne variants organic to the Brigade Combat Team (BCT). The MFEW Air variant is the highest priority, followed by ground, dismounted and fixed site variants.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604270A / Electronic Warfare Development			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	144.543	6.002	9.442	-	9.442
Current President's Budget	134.260	5.999	18.843	-	18.843
Total Adjustments	-10.283	-0.003	9.401	-	9.401
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-10.283	-0.003	9.401	-	9.401

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) 665 / <i>A/C Surv Equip Dev</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
665: <i>A/C Surv Equip Dev</i>	-	11.874	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Transitioned to Project EE3, PE 605035A Aircraft Survivability Development in FY 2015.

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 Radio Frequency (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) Radar Warning Receiver (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 near-spherical 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, including integrated suite control functionality, threat correlation and off-boarding capability, and 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: There is no Fiscal Year (FY) 2016 Base RDT&E dollar funding requirement for Project 665, PE 654270A. FY16 justification is reported under Project ER7, PE 655051.

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

	FY 2014	FY 2015	FY 2016
Title: Phase 2 Radio Frequency Countermeasures	11.874	-	-
Description: Phase 2 Product Development (Digital RWR)			
FY 2014 Accomplishments: Funded platform integration and lab updates.			
Accomplishments/Planned Programs Subtotals	11.874	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) 665 / <i>A/C Surv Equip Dev</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• AZ3511: APA AZ3511	-	33.554	144.051	-	144.051	147.039	23.752	41.498	146.010	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
<p>Army Radio Frequency (RF) Aircraft Survivability Equipment (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.</p> <p>Phase 1, approved by the Milestone Decision Authority (MDA), addresses obsolescence/Diminishing Manufacturing Sources (DMS) issues associated with the currently fielded AN/APR-39A(V) Radar Warning Receiver (RWR) via sole source Engineering Change Proposal (ECP) awarded to the APR-39A manufacturer.</p> <p>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 Materiel Solution 3 years sooner to support the re-balance of the National Defense Strategy to the RF threat-heavy Asia-Pacific Region.</p> <p>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).</p>											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) 665 / <i>A/C Surv Equip Dev</i>					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Development	Various	Various : -	10.623	1.448		-		-		-		-	Continuing	Continuing	Continuing
Project Management	Various	Various : -	0.182	0.030		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			10.805	1.478		-		-		-		-	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Radar Warning Receiver (RWR)	Various	Lab Demo / Studies : Various-	19.025	3.561		-		-		-		-	Continuing	Continuing	Continuing
S/W Development	MIPR	ARAT : Aberdeen Proving Ground, MD	2.104	1.796		-		-		-		-	Continuing	Continuing	Continuing
Depot Standup	MIPR	Tobyhanna : Tobyhanna, PA	1.052	-		-		-		-		-	Continuing	Continuing	Continuing
Platform Integration	TBD	Multiple : -	0.000	2.667		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			22.181	8.024		-		-		-		-	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	Various	Various : -	3.304	0.415		-		-		-		-	Continuing	Continuing	Continuing
Matrix Support	Various	Various : -	7.823	0.197		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			11.127	0.612		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>					Project (Number/Name) 665 / <i>A/C Surv Equip Dev</i>				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-service DT/OT Testing	TBD	Various : -	5.284	1.760		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			5.284	1.760		-		-		-		-	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	49.397	11.874	-	-	-	-	-	-	-

Remarks

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

Date: February 2015

Appropriation/Budget Activity

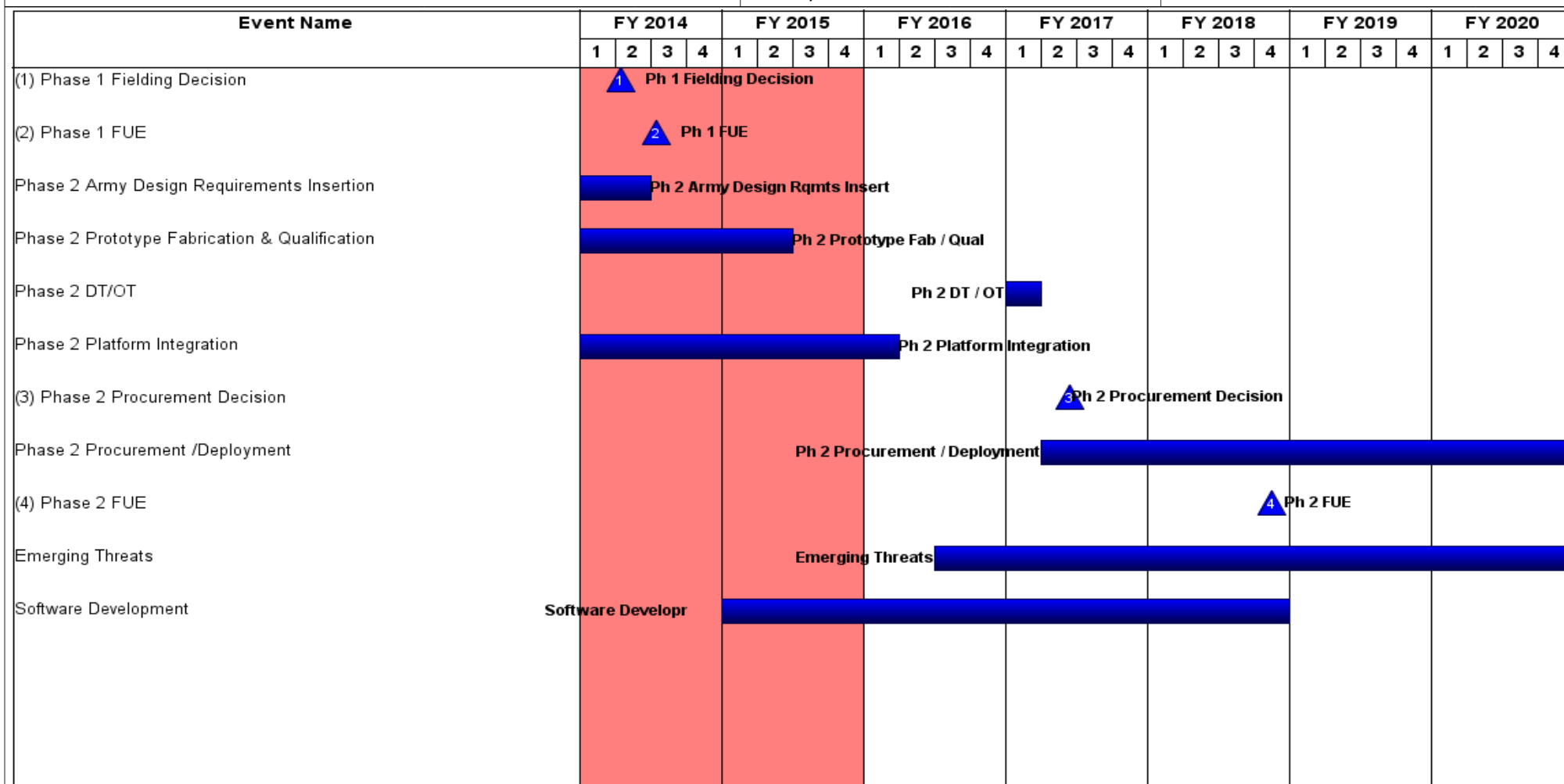
2040 / 5

R-1 Program Element (Number/Name)

PE 0604270A / *Electronic Warfare Development*

Project (Number/Name)

665 / *A/C Surv Equip Dev*



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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) 665 / <i>A/C Surv Equip Dev</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Phase 1 Fielding Decision	2	2014	2	2014
Phase 1 FUE	3	2014	3	2014
Phase 2 Army Design Requirements Insertion	3	2013	2	2014
Phase 2 Prototype Fabrication & Qualification	4	2013	2	2015
Phase 2 DT/OT	1	2017	1	2017
Phase 2 Platform Integration	1	2014	1	2016
Phase 2 Procurement Decision	2	2017	4	2020
Phase 2 Procurement /Deployment	2	2017	4	2020
Phase 2 FUE	4	2018	4	2018
Emerging Threats	3	2016	4	2020
Software Development	1	2015	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DX5: <i>Electronic Warfare And Management Tool</i>	-	0.013	1.966	8.641	-	8.641	6.064	20.623	20.840	21.046	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Integrated Electronic Warfare System (IEWS) is a system of systems capability set that integrates electronic attack, protect and support functions to dramatically improve the ability to seize, retain, and exploit an advantage within the electromagnetic spectrum (EMS). It is based on a modular, scalable and open architecture to allow Army BCT and Joint Force Commander's to tailor capability responses against a variety of EW threats/scenarios. The IEWS capability set is structured along three program lines of effort: 1) Multi-Function EW (MFEW), 2) Electronic Warfare Planning and Management Tools (EWPMT), and 3) Defensive Electronic Attack (DEA). EWPMT will provide the Electronic Warfare Officer (EWO) planning capabilities to coordinate, manage, and deconflict the use of the Electromagnetic Spectrum and synchronize spectrum operations within the Cyber Electromagnetic Activities (CEMA) cell. EWPMT will integrate data elements from Mission Command, Intelligence, and Fires to achieve a Common Operating Picture (COP) of the Electromagnetic Operational Environment.

FY2016 funds in the amount of \$8.641 million will provide for development, test and support activities for the EWPMT program.

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

	FY 2014	FY 2015	FY 2016
Title: EWPMT	0.013	1.966	8.641
Description: EWPMT is a suite of software tools and applications that will allow the Commander and staff a mission command capability to plan, coordinate, manage, and de-conflict unit EW activities.			
FY 2014 Accomplishments: Funds provide for Product Management office operations for the EWPMT program			
FY 2015 Plans: Funds provide for test support activities and Product Management office operations for the EWPMT program			
FY 2016 Plans: Funds provide for software Capability Drop (CD) development, test support activities and Product Management office operations for the EWPMT program.			
Accomplishments/Planned Programs Subtotals	0.013	1.966	8.641

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>			
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA: K00002 - <i>EW Planning & Management Tools (EWPMT)</i>	0.013	-	2.556	-	2.556	-	-	-	-	-	2.569
Remarks											
D. Acquisition Strategy											
EWPMT will follow an evolutionary acquisition strategy using an Information Technology (IT) acquisition process for rapid development and continuous product improvements. The overall strategy is to deploy annual software Capability Drops (CDs) to allow an incremental merger of the Electronic Warfare and Spectrum Management software tools that would not be possible following a traditional acquisition approach.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>						Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/Travel	Allot	PM EW : Aberdeen Proving Ground, MD	0.000	0.013	Jul 2014	0.300	Mar 2015	0.804	Oct 15	-		0.804	Continuing	Continuing	-
Subtotal			0.000	0.013		0.300		0.804		-		0.804	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EMD Contract - EWPMT	C/IDIQ	Raytheon : Fort Wayne, IN	0.000	-		-		6.000	Feb 2016	-		6.000	-	6.000	-
Subtotal			0.000	-		-		6.000		-		6.000	-	6.000	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EWPMT Test support	MIPR	Various : TBD	0.000	-		1.666	Mar 2015	1.837	Nov 2015	-		1.837	Continuing	Continuing	-
Subtotal			0.000	-		1.666		1.837		-		1.837	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.013		1.966		8.641		-		8.641	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																			
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>								Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>																			
Event Name								FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
								1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
EWPMT Contract																																			
Development and Test of CD 1																																			
(1) Test CD 1 (Government Confidence Demonstration)																																			
Development and Test of Additional CDs																																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EWPMT Contract	4	2014	4	2020
Development and Test of CD 1	4	2014	4	2015
Test CD 1 (Government Confidence Demonstration)	4	2015	4	2015
Development and Test of Additional CDs	4	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
VS6: <i>Integrated Electronic Warfare Systems</i>	-	19.636	4.033	10.202	-	10.202	10.349	10.464	12.022	12.145	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Integrated Electronic Warfare System (IEWS) is a system of systems capability set that integrates electronic attack, protect and support functions to dramatically improve the ability to seize, retain, and exploit an advantage within the electromagnetic spectrum (EMS). It is based on a modular, scalable and open architecture to allow Army Brigade Combat Team (BCT) and Joint Force Commander's to tailor capability responses against a variety of EW threats/scenarios. The IEWS capability set is structured along three program lines of effort: 1) Multi-Function EW (MFEW), 2) Electronic Warfare Planning and Management Tools (EWPMT), and 3) Defensive Electronic Attack (DEA). Defensive Electronic Attack (DEA) will provide force protection to vehicles, dismounted troops and fixed site locations against Radio Controlled Improvised Explosive Device (RCIED) and electronic support measures for situational awareness.

Project VS6 provides funding for defensive electronic attack, such as CREW-2 Duke Technology Insertions (DTI) to keep technology relevant against Global threats.

FY2016 Base dollars in the amount of \$10.202 million provides funding to support the development of CREW-2 Duke Technology Insertions (DTI), hardware/software, including incorporation of advanced techniques development against emerging and global threats, enhance networking capability, addresses military Positioning, Navigation and Timing (PNT) requirements, and resource program management office operations.

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

	FY 2014	FY 2015	FY 2016
Title: IEWS	19.636	4.033	10.202
Description: The IEW System (IEWS) Systems of Systems (SoS) will consist of Electronic Warfare Planning and Management Tool (EWPMT), Multi-Function EW (MFEW), and Defensive Electronic Attack (DEA).			
FY 2014 Accomplishments: EWPMT: Continue development of EWPMT software development and test. CREW-2 Duke Technical Insertion (DTI)/Duke Enhanced (DV4): Begin developing Hardware/Software solutions to address parts obsolescence and ensure systems remain relevant against Global Threats.			
FY 2015 Plans: Continue CREW-2 Duke Tech Insertions (DTI)/Duke Enhanced (DV4): Continue developing Hardware/Software solutions to ensure systems remain relevant against Global Threats.			
FY 2016 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>			Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>				

B. Accomplishments/Planned Programs (\$ in Millions)				FY 2014	FY 2015	FY 2016
Continue CREW-2 Duke Technology Insertions (DTI): Continue developing hardware/software solutions to remain relevant against Global Threats.						
Accomplishments/Planned Programs Subtotals				19.636	4.033	10.202

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• CREW: VA8000 CREW	-	-	2.960	-	2.960	-	-	-	-	-	2.960
Remarks											
<p>D. Acquisition Strategy</p> <p>CREW-2 Duke Technology Insertion (DTI) will provide for the continued growth and conduct of research, development and testing against emerging RCIED threats. Continuing research, development and testing will allow the technology to remain relevant and responsive to all approved user requirements.</p> <p>A competitive contract is planned for award 4QFY2015. A five year indefinite delivery indefinite quantity contract will be awarded on a competitive basis. This will enable maximum flexibility as the technology matures and as the threat changes.</p>											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>						Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/Travel for EWPMT	Allot	PM Electronic Warfare : Aberdeen Proving Ground, MD	4.035	0.921	Jan 2014	-		-		-		-	-	4.956	-
Program and Technical Assistance support	C/CPFF	TBD : Aberdeen Proving Ground, MD	3.111	0.678	Feb 2014	-		-		-		-	-	3.789	-
PMO Staff/Travel for CREW-2 Program Office	Allot	PM EW : Aberdeen Proving Ground, MD	0.000	0.498	Oct 2013	0.361	Oct 2014	0.822	Oct 2014	-		0.822	-	1.681	-
Subtotal			7.146	2.097		0.361		0.822		-		0.822	-	10.426	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EMD Contract - EWPMT	C/CPIF	SOTERA Defense Solutions Herndon, VA : RAYTHEON Fort Wayne, IN	23.713	14.605	Aug 2014	-		-		-		-	-	38.318	-
IEWS Engineering and Development	MIPR	I2WD : Aberdeen MD	5.557	-		-		-		-		-	-	5.557	-
Risk Reduction Studies for MFEW	MIPR	Various : Various	7.969	-		-		-		-		-	-	7.969	-
Develop CREW-2 Duke Technical Insertion (DTI) H/W and S/W solutions	C/CPFF	TBD : TBD	0.000	-		0.600	Aug 2015	6.710	Nov 2015	-		6.710	-	7.310	-
Subtotal			37.239	14.605		0.600		6.710		-		6.710	-	59.154	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>						Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MFEW Technical/ Engineering Support - Contractor	C/CPFF	GTRI : Atlanta, GA	2.046	-		-		-		-		-	-	2.046	-
Government Engineering Support	MIPR	CERDEC : Aberdeen Proving Ground, MD	3.082	0.232	Mar 2014	1.006	Dec 2014	-		-		-	-	4.320	-
EWPMT Architecture Study	MIPR	Various : Various	1.194	-		-		-		-		-	-	1.194	-
CREW-2 Engineering support	C/CPFF	Various : Various	0.000	0.125	Jan 2014	0.992	Dec 2014	0.822	Nov 2015	-		0.822	-	1.939	-
CREW-2 Government Engineering	MIPR	Various : Various	0.000	0.427	Oct 2013	0.559	Feb 2015	0.923	Nov 2015	-		0.923	-	1.909	-
Subtotal			6.322	0.784		2.557		1.745		-		1.745	-	11.408	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EWPMT Test support	MIPR	Various : TBD	0.896	0.200	Mar 2014	-		-		-		-	-	1.096	-
Operational Assessment (OA) of DV4 systems	MIPR	Yuma Proving Ground : Yuma, AZ	0.000	1.950	Feb 2014	-		-		-		-	-	1.950	-
Continous evaluation of CREW-2 technologies	MIPR	Yuma Proving Ground Yuma, AZ : YPG, AZ	0.000	-		0.515	Apr 2015	0.925	Nov 2015	-		0.925	-	1.440	-
Subtotal			0.896	2.150		0.515		0.925		-		0.925	-	4.486	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			51.603	19.636		4.033		10.202		-		10.202	-	85.474	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>										Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
EWPMT Contract																																					
MFEW Risk Reduction Studies																																					
Delivery of CREW-2 Duke (DV4) Systems for Development																																					
Operational Assessment and Engineering test of Duke (DV4) systems																																					
CREW-2 Duke Technology Insertion (DTI) Development Contract Award																																					
Develop H/W and S/W solutions for CREW-2 DukeTechnology Insertion																																					
Continuous evaluation of CREW-2 Duke Technology Insertion (DTI) sol																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EWPMT Contract	3	2013	3	2015
MFEW Risk Reduction Studies	3	2013	4	2014
Delivery of CREW-2 Duke (DV4) Systems for Development	1	2014	1	2014
Operational Assessment and Engineering test of Duke (DV4) systems	2	2014	4	2014
CREW-2 Duke Technology Insertion (DTI) Development Contract Award	4	2015	4	2015
Develop H/W and S/W solutions for CREW-2 DukeTechnology Insertion (DTI)	4	2015	4	2020
Continuous evaluation of CREW-2 Duke Technology Insertion (DTI) solutions	4	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VU7 / <i>Common Missile Warning System</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
VU7: <i>Common Missile Warning System</i>	-	2.811	-	-	-	-	-	-	-	-	-	2.811
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Transitioned to Project EE4, PE 605035A Aircraft Survivability Development in FY 2015.

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 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.

Justification: There is no Fiscal Year (FY) 2016 Base RDT&E dollar funding requirement for Project VU7, PE 654270A. FY16 justification is reported under Project ER8, PE 655051A

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

	FY 2014	FY 2015	FY 2016
Title: Development Effort	2.811	-	-
Description: -			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>			Project (Number/Name) VU7 / <i>Common Missile Warning System</i>				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016		
<i>FY 2014 Accomplishments:</i> RDT&E funding supports development engineering of the Threat Analysis Database (TAD), and salaries.											
Accomplishments/Planned Programs Subtotals							2.811	-	-		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APA Funding: APA, BA 4 AZ3517	103.021	107.364	78.953	-	78.953	42.371	38.678	33.654	19.280	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
<p>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 will be a 3 year firm fixed price contract to procure the remaining Generation 3 (Gen 3) Electronic Control Units (ECUs) and A-Kits and will be awarded in late FY2013 / early FY2014. 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 on 18 September 2013. All aircraft deployed in Theater 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.</p>											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VU7 / <i>Common Missile Warning System</i>					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS System Engineering Program Management	Various	PM ASE, HSV, AL : -	3.566	0.148		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			3.566	0.148		-		-		-		-	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Tier 2/3 Upgrades	Various	Various : -	2.815	-		-		-		-		-	Continuing	Continuing	Continuing
CMWS Threat Analysis Database Design	Various	Various : -	1.655	-		-		-		-		-	Continuing	Continuing	Continuing
Threat Analysis Database (TAD)	TBD	BAE : TBD	2.466	2.468	May 2014	-		-		-		-	Continuing	Continuing	Continuing
CMWS Enhanced Sensor Study & Evaluation	Various	TBD : -	14.929	0.095		-		-		-		-	Continuing	Continuing	Continuing
CMWS Gen 3 Providence Additional Phases	Various	TBD : -	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			21.865	2.563		-		-		-		-	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Contractor Support	SS/FP	Various : -	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
CMWS Matrix Support	Various	Various : -	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VU7 / <i>Common Missile Warning System</i>				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Test and Evaluation	C/CPFF	AMCOM RTC : Redstone	0.000	0.100		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	0.100		-		-		-		-	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.431	2.811	-	-	-	-	-	-	-

Remarks

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)	Program Element Description	Program Element Type	Program Element Status	Program Element Location	Program Element Contact	Program Element Date	Program Element Other

PE 0604270A / *Electronic Warfare*

Development

Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-31	Completed	J. Doe	150,000	148,500	100	Low	Exceeded budget by 1.5%
102/Beta	2023-02-01	2023-04-30	In Progress	A. Smith	200,000	180,000	90	Medium	Minor delays in procurement
103/Gamma	2023-03-10	2023-06-30	On Hold	M. Chen	300,000	0	0	High	Waiting for client approval
104/Delta	2023-04-01	2023-07-31	Planned	S. Kim	180,000	0	0	Medium	Initial planning phase
105/Epsilon	2023-05-15	2023-08-31	Not Started	L. Garcia	220,000	0	0	Low	Resource allocation pending

VU7 / Common Missile Warning System

[illegible]

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VU7 / <i>Common Missile Warning System</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CMWS System Dev/Tier 2 and 3 Upgrades (TAD Updates)	2	2011	4	2019
CMWS Enhanced Sensor Study & Evaluation	3	2012	1	2014
CMWS Gen 3 Production	3	2012	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VU8 / <i>Common Infrared Counter Measure</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
VU8: <i>Common Infrared Counter Measure</i>	-	99.926	-	-	-	-	-	-	-	-	-	99.926
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Transitioned to Project EB4, PE 605035A Aircraft Survivability Development in FY 2015.

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 US Army's concept of CIRCM is part of the Suite of Integrated Infrared Countermeasures (SIIRCM). The core components of the SIIRCM concept are: a Missile Warning System (MWS), IR expendables countermeasures (flares) and a laser-based 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 the Navy's future missile warning system. CIRCM was approved to be funded to the Director, Cost Assessment and Program Evaluation Independent Cost Estimate (CAPE ICE) through Milestone B (MS B) per Defense Acquisition Executive Acquisition Decision Memorandum (DAE) (ADM), December 28, 2011.

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.

Justification:

There are no Fiscal Year (FY) 2016 Base RDT&E dollar funding requirements for VU8. FY16 justification is reported under EB4 PE 655035A.

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

	FY 2014	FY 2015	FY 2016
Title: Development Efforts	99.926	-	-
Description: RDT&E dollars begin the design and development of the CIRCM system.			
FY 2014 Accomplishments: RDT&E dollars supported completion of the TD phase and bridge activity, initiation of the EMD phase, prototype manufacturing for seven prototypes, development testing, and platform integration in FY 2015.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VU8 / <i>Common Infrared Counter Measure</i>				
B. Accomplishments/Planned Programs (\$ in Millions) FY14 funding completed investment in I2WD Phase I SCEPTRE Lab. SCEPTRE reduces program schedule risk and out year test support costs by providing a systems engineering tool and a Modeling and Simulation (M&S) environment to analyze system performance prior to actual flight and missile testing. "Other Testing" included funds to acquire test threat assets.										FY 2014	FY 2015	FY 2016
Accomplishments/Planned Programs Subtotals										99.926	-	-
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• ∴ APA Funding: APA, BA 4, AZ3537 (CIRCM)	-	-	-	-	-	64.942	104.858	166.201	216.127	Continuing	Continuing	
Remarks None												
D. Acquisition Strategy The December 28, 2011 DAE ADM authorized entry into the Technology Development (TD) phase, designated the program a pre-Major Defense Acquisition Program (MDAP), and approved the updated exit criteria. CIRCM will continue pre-MS B activities until MS B approval. Contract award to a single vendor is anticipated in the third quarter of FY15. 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 fourth quarter of FY17, 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 third quarter of FY19, and a Full Rate Production Decision Review (FRPDR) planned for the third quarter of FY19.												
E. Performance Metrics N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VU8 / <i>Common Infrared Counter Measure</i>					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering Program Management (SEPM)	Various	PM ASE, HSV, AL : -	4.027	7.247		-		-		-		-	-	11.274	11.274
Subtotal			4.027	7.247		-		-		-		-	-	11.274	11.274
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Non-Recurring Engineering (NRE)	C/CPFF	Various : -	0.000	20.920	Sep 2014	-		-		-		-	-	20.920	20.920
Development Facilities	Various	Various : -	0.000	17.800		-		-		-		-	-	17.800	17.800
Other R&D	Various	Various : -	8.015	8.534		-		-		-		-	-	16.549	16.549
Reprogram to Other Programs	Various	Various : -	0.000	5.956		-		-		-		-	-	5.956	5.956
Subtotal			8.015	53.210		-		-		-		-	-	61.225	61.225
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government System Testing & Evaluation	Various	CECOM - I2WD APG MD : -	9.254	8.027		-		-		-		-	-	17.281	17.281
Other Testing	Various	CECOM - I2WD APG MD : -	18.423	31.442		-		-		-		-	-	49.865	49.865
Subtotal			27.677	39.469		-		-		-		-	-	67.146	67.146
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			39.719	99.926		-		-		-		-	-	139.645	139.645

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army							Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>			Project (Number/Name) VU8 / <i>Common Infrared Counter Measure</i>			
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015													
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>										Project (Number/Name) VU8 / <i>Common Infrared Counter Measure</i>									
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
TD PHASE																													
Laser Integration Test and Evaluation (LITE) Lab																													
Reliability Demonstration Test (TD)																													
Guided Weapons Evaluation Facility (GWEF) - TD Phase																													
Pallet Flight Test																													
Bridge Activity																													
(1) MS B																													
(2) EMD CONTRACT AWARD																													
EMD PHASE																													
Critical Design Review (CDR) Risk Reduction Test Activity																													
(3) CDR																													
Prototype Deliveries																													
Developmental Test Activity																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015													
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>										Project (Number/Name) VU8 / <i>Common Infrared Counter Measure</i>									
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Reliability Demonstration Test (EMD)																													
GWEF - EMD Phase																													
(1) MS C																													
LRIP																													
Initial Operational Test and Evaluation (IOT&E)																													
(2) FUE																													
(3) FRPDR																													

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VU8 / <i>Common Infrared Counter Measure</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TD PHASE	3	2012	4	2014
Laser Integration Test and Evaluation (LITE) Lab	1	2014	1	2014
Reliability Demonstration Test (TD)	1	2014	2	2014
Guided Weapons Evaluation Facility (GWEF) - TD Phase	2	2013	4	2014
Pallet Flight Test	2	2014	2	2014
Bridge Activity	4	2014	2	2015
MS B	3	2015	3	2015
EMD CONTRACT AWARD	3	2015	3	2015
EMD PHASE	3	2015	4	2017
Critical Design Review (CDR) Risk Reduction Test Activity	3	2015	3	2016
CDR	3	2016	3	2016
Prototype Deliveries	1	2016	1	2017
Developmental Test Activity	1	2016	3	2017
Reliability Demonstration Test (EMD)	4	2016	3	2017
GWEF - EMD Phase	2	2016	3	2017
MS C	4	2017	4	2017
LRIP	4	2017	4	2018
Initial Operational Test and Evaluation (IOT&E)	1	2019	1	2019
FUE	3	2019	3	2019
FRPDR	3	2019	3	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	30.752	9.827	9.861	-	9.861	6.154	5.757	10.291	9.866	-	82.508
162: Network Enterprise Domain (NED)	-	6.500	-	-	-	-	-	-	-	-	-	6.500
DZ5: Handheld, Manpack and Small Form Fit (JTRS HMS)	-	24.252	9.827	9.861	-	9.861	6.154	5.757	10.291	9.866	-	76.008

Note

FY2016 funding increase from Previous President's Budget to Current President's Budget (see Program Change Summary) funds the Rifleman Radio Operational Test for the full and open competition contract in support of Full Rate Production.

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 Factor (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 an April 2014 approved acquisition strategy to procure modified non-developmental items (NDI) through full and open competition open to all potential industry partners. Phase 1 is to procure an NDI AN/PRC-154A Rifleman Radio (RR) for use in a classified environment. The RR ports the Soldier Radio Waveform (SRW)-Army managed waveform. Phase 2 is procuring an NDI AN/PRC-155 Manpack (MP) for use in a classified environment. Waveforms to be ported to HMS MP 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.

The Army will award Multiple Firm Fixed-Price (FFP) IDIQ Contracts through a multiple step selection process:

- a. Award FFP Contracts and initial delivery orders to all qualified vendors based on technical acceptability and demonstrations (4QFY15 for RR and 1QFY16 for MP).
- b. Award second delivery orders based on qualification test results (2QFY16 for RR and 3QFY16 for MP)
- c. Award FRP delivery orders based on operational assessments and best value trade off construct (2QFY17 for RR and 4QFY17 for MP).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i>
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Following full and open competition, qualified NDI RR and MP Radios will require operationally-relevant testing to inform a Full Rate Production decision and to support fielding to Capability Set units.

The FY 2016 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 Operational Testing for the RR candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; and to obtain material release for FRP. The funding will also support safety, spectrum supportability, and other certifications necessary to prepare the products for fielding.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	31.809	9.832	4.546	-	4.546
Current President's Budget	30.752	9.827	9.861	-	9.861
Total Adjustments	-1.057	-0.005	5.315	-	5.315
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.057	-			
• Adjustments to Budget Years	-	-0.005	5.315	-	5.315

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio				Project (Number/Name) 162 / Network Enterprise Domain (NED)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
162: Network Enterprise Domain (NED)	-	6.500	-	-	-	-	-	-	-	-	-	6.500
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2014 HMS funding was split between projects DZ5 (Handheld, Manpack and Small Form Fit (JTRS HMS)) and 162 (Network Enterprise Domain (NED)) under PE 0604280A; In FY 2015 and out, HMS is funded in project DZ5 only.

A detailed description of mission and budget item justification, other program funding, and acquisition strategy for the rest of the HMS RDTE program funding is found under Project DZ5.

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 Factor (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.

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

	FY 2014	FY 2015	FY 2016
Title: JTRS Network Enterprise Domain	6.500	-	-
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 Factor (SFF) versions of HMS may be used for Unmanned Vehicles and other platform applications.			
FY 2014 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i>				Project (Number/Name) 162 / <i>Network Enterprise Domain (NED)</i>				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Complete Manpack Radio Government Developmental Test (GDT) and development efforts; Receive Information Assurance certification for Manpack Radios with Mobile User Objective System (MUOS) capability; Complete Rifleman Radio Operational Test; Complete Manpack Radio Follow-on Operational Test & Evaluation (FOT&E); and provide technical and engineering support for development efforts including preparing for Full Rate Production (FRP) for the Manpack and Rifleman Radio.												
Accomplishments/Planned Programs Subtotals										6.500	-	-
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• RDTE: 0604280A/DZ5: <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>	24.252	9.827	9.861	-	9.861	6.154	5.757	10.291	9.866	-	76.008	
• OPA: B90210: <i>JTRS Cluster 5 (Handheld)</i>	34.200	14.200	34.910	-	34.910	45.268	51.646	52.469	59.932	-	292.625	
• OPA: B90215: <i>JTRS (Manpack)</i>	212.800	26.511	29.730	-	29.730	245.626	417.617	417.895	420.289	-	1,770.468	
Remarks												
HMS RDTE funding for FY 2013 and prior can be found under Program Element (PE) 0604280N, Budget Submission BA5 aligned under the Navy Joint Tactical Radio System (JTRS) Programs. HMS procurement funding can be found under Standard Study Number (SSN) B90210 JTRS Cluster 5 (Handheld) and SSN B90215 JTRS (Manpack).												
President's Budget (PB) FY 2013 included the following programs' funding in Budget Item 162: Network Enterprise Domain (NED), Handheld Manpack Small Form Fit (HMS), Airborne Maritime Fixed (AMF), and Multifunctional Information Distribution System (MIDS). All programs associated with this line with the exception of JTRS HMS have been moved to their own PE lines. JTRS HMS is currently funded in PE 0604280A.												
D. Acquisition Strategy												
HMS is currently executing an April 2014 approved acquisition strategy to procure modified non-developmental items (NDI) through full and open competition open to all potential industry partners. The first phase is to procure an NDI AN/PRC-154A Rifleman Radio for use in a classified environment. The Rifleman Radio ports the Soldier Radio Waveform (SRW)-Army managed waveform. The second phase is procuring an NDI AN/PRC-155 Manpack 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												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio				Project (Number/Name) 162 / Network Enterprise Domain (NED)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Office Support	Various	PEO C3T & CECOM: : APG, MD	0.000	0.638		-		-		-		-	-	0.638	0.638
Subtotal			0.000	0.638		-		-		-		-	-	0.638	0.638
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMS JTRS System, Design & Development	C/CPAF	General Dynamics C4 Systems: : Scottsdale, AZ	0.000	0.845		-		-		-		-	-	0.845	0.845
Subtotal			0.000	0.845		-		-		-		-	-	0.845	0.845
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMS JTRS Engineering/ Technical Support	Various	PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC, Various: : APG, MD; Various	0.000	1.408		-		-		-		-	-	1.408	1.408
Subtotal			0.000	1.408		-		-		-		-	-	1.408	1.408
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Follow On Delta Development & Testing	Various	EPG, AEC, MBL, ARLSLAD, CERDEC, OTC, JITC: : Ft. Benning,	0.000	3.609		-		-		-		-	-	3.609	3.609

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio				Project (Number/Name) 162 / Network Enterprise Domain (NED)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		GA; APG, MD; Various													
Subtotal			0.000	3.609		-		-		-		-	-	3.609	3.609
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	6.500		-		-		-		-	-	6.500	6.500
Remarks															

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PE 0604280A: *Joint Tactical Radio*
Army

R-1 Line #79

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i>	Project (Number/Name) 162 / <i>Network Enterprise Domain (NED)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Manpack Government Developmental Test 4 (POR LRIP)	2	2014	2	2014
Manpack Operational Test (POR LRIP)	2	2014	3	2014
Rifleman Radio Operational Test (POR LRIP)	4	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio				Project (Number/Name) DZ5 / Handheld, Manpack and Small Form Fit (JTRS HMS)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DZ5: Handheld, Manpack and Small Form Fit (JTRS HMS)	-	24.252	9.827	9.861	-	9.861	6.154	5.757	10.291	9.866	-	76.008
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2014 HMS funding was split between projects DZ5 (Handheld, Manpack and Small Form Fit (JTRS HMS)) and 162 (Network Enterprise Domain (NED)) under PE 0604280A; In FY 2015 and out, HMS is funded in project DZ5 only.

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 Factor (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 an April 2014 approved acquisition strategy to procure modified non-developmental items (NDI) through full and open competition open to all potential industry partners. Phase 1 is to procure an NDI AN/PRC-154A Rifleman Radio (RR) for use in a classified environment. The RR ports the Soldier Radio Waveform (SRW)-Army managed waveform. Phase 2 is procuring an NDI AN/PRC-155 Manpack (MP) for use in a classified environment. Waveforms to be ported to HMS MP 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.

The Army will award Multiple Firm Fixed-Price (FFP) IDIQ Contracts through a multiple step selection process:

- Award FFP Contracts and initial delivery orders to all qualified vendors based on technical acceptability and demonstrations (4QFY15 for RR and 1QFY16 for MP).
- Award second delivery orders based on qualification test results (2QFY16 for RR and 3QFY16 for MP)
- Award FRP delivery orders based on operational assessments and best value trade off construct (2QFY17 for RR and 4QFY17 for MP).

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio	Project (Number/Name) DZ5 / Handheld, Manpack and Small Form Fit (JTRS HMS)		
Following full and open competition, qualified NDI RR and MP Radios will require operationally-relevant testing to inform a Full Rate Production decision and to support fielding to Capability Set units.				
The FY 2016 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 Operational Testing for the RR candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; and to obtain material release for FRP. The funding will also support safety, spectrum supportability, and other certifications necessary to prepare the products for fielding.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Title: HMS JTRS		24.252	9.827	9.861
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 Factor (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 an April 2014 approved acquisition strategy to procure modified non-developmental items (NDI) through full and open competition open to all potential industry partners. Phase 1 is to procure an NDI AN/PRC-154A Rifleman Radio (RR) for use in a classified environment. The RR ports the Soldier Radio Waveform (SRW)-Army managed waveform. Phase 2 is procuring an NDI AN/PRC-155 Manpack (MP) for use in a classified environment. Waveforms to be ported to HMS MP 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.				
The Army will award Multiple Firm Fixed-Price (FFP) IDIQ Contracts through a multiple step selection process: a. Award FFP Contracts and initial delivery orders to all qualified vendors based on technical acceptability and demonstrations (4QFY15 for RR and 1QFY16 for MP). b. Award second delivery orders based on qualification test results (2QFY16 for RR and 3QFY16 for MP)				

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i>	Project (Number/Name) DZ5 / <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>c. Award FRP delivery orders based on operational assessments and best value trade off construct (2QFY17 for RR and 4QFY17 for MP).</p> <p>Following full and open competition, qualified NDI RR and MP Radios will require operationally-relevant testing to inform a Full Rate Production decision and to support fielding to Capability Set units.</p> <p><i>FY 2014 Accomplishments:</i> Complete Manpack Radio Government Developmental Test (GDT) and development efforts; Receive Information Assurance certification for Manpack Radios with Mobile User Objective System (MUOS) capability; Complete Rifleman Radio Operational Test; Complete Manpack Radio Follow-on Operational Test & Evaluation (FOT&E); and provide technical and engineering support for development efforts including preparing for Full Rate Production (FRP) for the Manpack and Rifleman Radio.</p> <p><i>FY 2015 Plans:</i> The FY 2015 budget will provide funding that is necessary to execute the required full and open competition contract strategy for the Rifleman and Manpack products. Specifically, the funding is needed to conduct Qualification Tests for both radios. Additionally, the funding will be utilized to complete the MUOS development effort.</p> <p><i>FY 2016 Plans:</i> The FY 2016 budget will provide funding that is necessary to execute the required full and open competition contract strategy for the Rifleman and Manpack products. Specifically, the funding is needed to conduct Operational Testing for the Rifleman Radio candidate products to demonstrate compliance with program requirements; assess effectiveness, suitability, and survivability; and to obtain material release for FRP. The funding will also support safety, spectrum supportability, and other certifications necessary to prepare the products for fielding.</p>			
Accomplishments/Planned Programs Subtotals	24.252	9.827	9.861

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0604280A/162: <i>Network Enterprise Domain (NED)</i>	24.252	-	-	-	-	-	-	-	-	-	24.252
• OPA: B90210: <i>JTRS Cluster 5 (Handheld)</i>	34.200	14.200	34.910	-	34.910	45.268	51.646	52.469	59.932	-	292.625
• OPA: B90215: <i>JTRS (Manpack)</i>	212.800	26.511	29.730	-	29.730	245.626	417.617	417.895	420.289	-	1,770.468

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i>	Project (Number/Name) DZ5 / <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>	

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

HMS procurement funding can be found under Standard Study Number (SSN) B90210 JTRS Cluster 5 (Handheld) and SSN B90215 JTRS (Manpack).

D. Acquisition Strategy

HMS is currently executing an April 2014 approved acquisition strategy to procure modified non-developmental items (NDI) through full and open competition open to all potential industry partners. The first phase is to procure an NDI AN/PRC-154A Rifleman Radio for use in a classified environment. The Rifleman Radio ports the Soldier Radio Waveform (SRW)-Army managed waveform. The second phase is procuring an NDI AN/PRC-155 Manpack 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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio				Project (Number/Name) DZ5 / Handheld, Manpack and Small Form Fit (JTRS HMS)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Office Support	Various	PEO C3T & CECOM: : APG, MD	0.000	0.280		0.270		0.270		-		0.270	-	0.820	0.820
Subtotal			0.000	0.280		0.270		0.270		-		0.270	-	0.820	0.820
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMS JTRS System, Design & Development	C/CPAF	General Dynamics D4 Systems: : Scottsdale, AZ	0.000	21.720		-		-		-		-	-	21.720	21.720
Subtotal			0.000	21.720		-		-		-		-	-	21.720	21.720
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HMS JTRS Engineering/ Technical Support	Various	PEO C3T, ARL, ESP, CECOM, CERDEC, LCMC, Various: : APG, MD; Various	0.000	0.300		0.650		0.655		-		0.655	-	1.605	1.605
Subtotal			0.000	0.300		0.650		0.655		-		0.655	-	1.605	1.605
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Follow on Delta Development & Testing	Various	EPG, AEC, MBL, ARLSLAD, CERDEC, OTC, JITC, Various: : Ft	0.000	1.952		8.907		8.936		-		8.936	-	19.795	19.795

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i>				Project (Number/Name) DZ5 / <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>					

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost		Cost To Complete	Total Cost	Target Value of Contract
		Huachuca, AZ; Ft Benning, GA; APG, MD; Various														
Subtotal			0.000	1.952		8.907		8.936		-		8.936	-	19.795	19.795	

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	24.252		9.827		9.861		-		9.861	-	43.940	43.940

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604280A / Joint Tactical Radio	Project (Number/Name) DZ5 / Handheld, Manpack and Small Form Fit (JTRS HMS)
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Manpack Government Developmental Test 4 (POR LRIP) MP C																												
Manpack Operational Test (POR LRIP)																												
Rifleman Radio Qualification Test (FOC)																												
MUOS MOTE																												
Manpack Qualification Test (FOC)																												
Rifleman Radio Operational Test (FRP)																												
Manpack Operational Test (FRP)																												
RR Performance Verification Test-2018																												
MP Performance Verification Test-2018																												
RR Performance Verification Test-2019																												
MP Performance Verification Test-2019																												
RR Performance Verification Test-2020																												
MP Performance Verification Test-2020																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604280A / <i>Joint Tactical Radio</i>	Project (Number/Name) DZ5 / <i>Handheld, Manpack and Small Form Fit (JTRS HMS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Manpack Government Developmental Test 4 (POR LRIP)	2	2014	2	2014
Manpack Operational Test (POR LRIP)	2	2014	3	2014
Rifleman Radio Qualification Test (FOC)	4	2015	1	2016
MUOS MOTE	1	2016	1	2016
Manpack Qualification Test (FOC)	2	2016	3	2016
Rifleman Radio Operational Test (FRP)	3	2016	3	2016
Manpack Operational Test (FRP)	1	2017	1	2017
RR Performance Verification Test-2018	1	2018	2	2018
MP Performance Verification Test-2018	4	2018	4	2018
RR Performance Verification Test-2019	1	2019	2	2019
MP Performance Verification Test-2019	4	2019	4	2019
RR Performance Verification Test-2020	1	2020	2	2020
MP Performance Verification Test-2020	4	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604290A I Mid-tier Networking Vehicular Radio (MNVR)							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	22.553	9.725	8.763	-	8.763	7.432	2.255	0.518	0.517	Continuing	Continuing
DW1: Mid-Tier Wideband Networking Vehicular Radio Mnv	-	22.553	9.725	8.763	-	8.763	7.432	2.255	0.518	0.517	Continuing	Continuing

Note

FY 2016 supports program management efforts needed to execute the modified NDI strategy for a mid-tier networking vehicular capability; focus is on continued test and system certification efforts for the 118(V)1 (MNVR). Planned activities, in accordance with the MNVR acquisition plan include conduct of IOT&E at NIE 16.2, from which an Operational Test Agency Milestone Assessment Report (OMAR) will be developed to inform a Full-Rate Production decision in 4QFY16.

A. Mission Description and Budget Item Justification

The MNVR enables the extension of data services within the tactical network through seamless integration of the upper and lower tiers; providing software-defined, multi-channel networking radios for a wide variety of Army tactical vehicles to meet the Army's requirement for MWN capability.

The MNVR, a modified Non-Developmental (NDI), supports Army Mission Command operational requirements with a multi-channel, Type 1 (supporting multiple independent levels of security), vehicular mounted radio hosting networking waveforms, the Wideband Networking Waveform (WNW) and the Soldier Radio Waveform (SRW). The MNVR narrows the data capability gap at the Brigade Combat Team (BCT) company level. It provides the capability to build a data extension to the lowest echelons and enables the extension of services from the Forward Operating Base (FOB) to the platform. MNVR provides a dynamic, scalable, On-the-Move (OTM) network architecture, connecting the Soldier to the Mission Command (MC) Network, and enhances capability to exchange voice and data simultaneously and faster than current systems. The advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain. The system operates Internet Protocol (IP) based networking waveforms offering increased data throughput through self-forming, self-healing, managed communication networks from the brigade to the platoon level. It's route and retransmit functionality links waveforms in different frequency bands, within the 2 Megahertz (MHz) to 2 Gigahertz (GHz) range, to form one coherent network. MNVR has been nomenclatured as AN/PRC 118(V)1.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604290A / Mid-tier Networking Vehicular Radio (MNVR)			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	23.328	9.730	-	-	-
Current President's Budget	22.553	9.725	8.763	-	8.763
Total Adjustments	-0.775	-0.005	8.763	-	8.763
• Congressional General Reductions	-	-0.005			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.775	-			
• Adjustments to Budget Years	-	-	8.763	-	8.763

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604290A / Mid-tier Networking Vehicular Radio (MNVR)				Project (Number/Name) DW1 / Mid-Tier Wideband Networking Vehicular Radio Mnvr			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DW1: Mid-Tier Wideband Networking Vehicular Radio Mnvr	-	22.553	9.725	8.763	-	8.763	7.432	2.255	0.518	0.517	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Mid-tier Networking Vehicular Radios (MNVR) enables the extension of data services within the tactical network through seamless integration of the upper and lower tiers; providing software-defined, multi-channel networking radios for a wide variety of Army tactical vehicles to meet the Army's requirement for the Mid-tier Wideband Networking (MWN) capability. A contract was awarded on 24 September 2013 as a single award, Indefinite Delivery Indefinite Quantity (IDIQ), firm fixed price, over a 3-year ordering period. Production of 232 radios for Test & Evaluation and certification purposes was completed in 3QFY 2014. After a Milestone C (MS C) decision is made in 4QFY 2015, PdM MNVR will support Initial Operational Test and Evaluation (IOT&E) in order to complete all testing and certifications, and support platform integration, meeting the lead time required for production of platform integration assets. Subsequent procurements will be full and open competition, single award, IDIQ, firm fixed price, 5-year ordering period.

A. Mission Description and Budget Item Justification

MNVR enables the extension of data services within the tactical network through seamless integration of the upper and lower tiers; providing software-defined, multi-channel networking radios for a wide variety of Army tactical vehicles to meet the Army's requirement for the MWN capability. The MNVR provides self-forming and self-healing communication networks from the brigade to the platoon level throughout the full range of military operations.

MNVR, a modified Non-Developmental Item (NDI), supports Army Mission Command operational requirements with a multi-channel, Type 1 (supporting multiple independent levels of security), vehicular mounted radio hosting networking waveforms, Wideband Networking Waveform (WNW) and Soldier Radio Waveform (SRW). The MNVR narrows the data capability gap at the Brigade Combat Team (BCT) company level and provides the capability to build a data extension to the lowest echelons, and then enables the extension of services from the Forward Operating Base (FOB) to the platform. MNVR provides a dynamic, scalable, On-the-Move (OTM) network architecture, connecting the Soldier to the Mission Command (MC) Network and enhances capability to exchange voice and data simultaneously and faster than current systems. The advanced network waveforms provide rapid distribution of data and imagery with increased information assurance protection and automatic routing across complex terrain. The system operates Internet Protocol (IP) based networking waveforms offering increased data throughput through self-forming, self-healing, managed communication networks. It's route and retransmit functionality links waveforms in different frequency bands, within the 2 Megahertz (MHz) to 2 Gigahertz (GHz) range, to form one coherent network. MNVR has been nomenclatured as AN/PRC 118(V)1.

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

	FY 2014	FY 2015	FY 2016
Title: Mid-tier Networking Vehicular Radio (MNVR)	22.553	9.725	8.763

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604290A / Mid-tier Networking Vehicular Radio (MNVR)				Project (Number/Name) DW1 / Mid-Tier Wideband Networking Vehicular Radio Mnv			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
<p>Description: RDTE funding supports program management efforts in support of the industry solution for a modified Non-Developmental Item (NDI) radio; contract management, and test & certification efforts through Initial Operational Test & Evaluation (IOT&E).</p> <p>FY 2014 Accomplishments: FY 2014 funding supported program management, test and evaluation and system security certification activities to execute the modified Non-Developmental Item (NDI) strategy for a mid-tier networking vehicular capability. Activities included a Demonstration at Network Integration Event (NIE) 14.2, and Government Integration Testing (GIT); both were risk reduction activities in support of Limited User Test (LUT) in 3QFY 2015. FY 2014 funding also supported management of first delivery order production for test & certification, and initial platform integration efforts.</p> <p>FY 2015 Plans: FY 2015 supports program management efforts needed to execute the modified NDI strategy for a mid-tier networking vehicular capability; focus is on test, system certification and initial sustainment planning for the 118(V)1 (MNVR). Planned activities, in accordance with the MNVR acquisition plan include: Counter-RCIED Electronic Warfare (CREW) testing; conduct of LUT at NIE 15.2, from which an Operational Test Agency Milestone Assessment Report (OMAR) will be developed to inform a Milestone C (MS C) decision in 4QFY 2015; Government Regression Testing (GRT); Logistics Demonstration (Log Demo); and Tropical Testing.</p> <p>FY 2016 Plans: FY 2016 supports program management efforts needed to execute the modified NDI strategy for a mid-tier networking vehicular capability; focus is on continued test and system certification efforts for the 118(V)1 (MNVR). Planned activities, in accordance with the MNVR acquisition plan include conduct of IOT&E at NIE 16.2, from which an OMAR will be developed to inform a Full-Rate Production decision in 4QFY16.</p>											
Accomplishments/Planned Programs Subtotals								22.553	9.725	8.763	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPA Funding - B51001: Mid-tier Networking Vehicular Radio (MNVR)	19.200	4.692	27.762	-	27.762	27.726	48.393	49.040	59.118	Continuing	Continuing
Remarks											

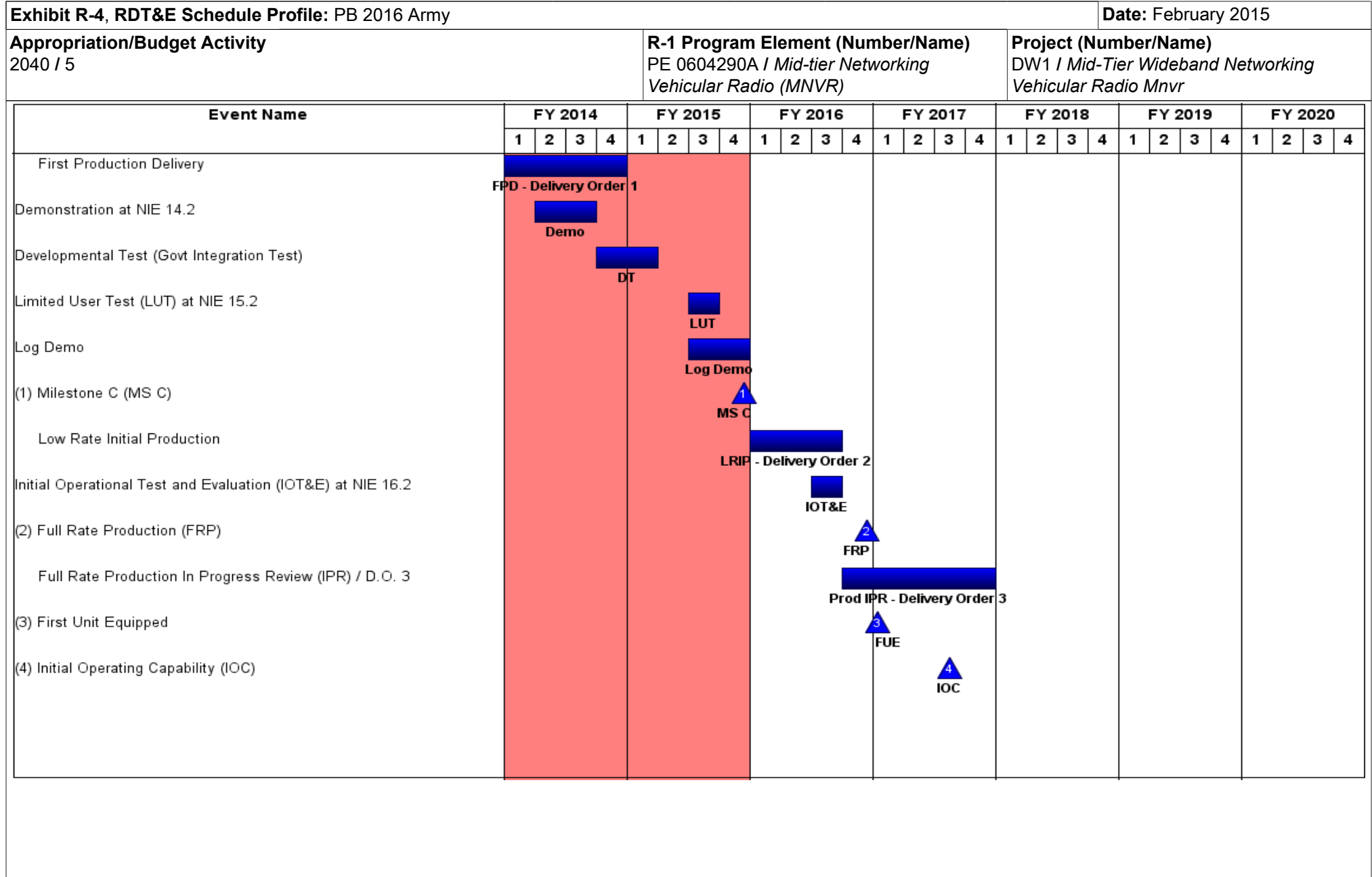
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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604290A / <i>Mid-tier Networking Vehicular Radio (MNVR)</i>	Project (Number/Name) DW1 / <i>Mid-Tier Wideband Networking Vehicular Radio Mnv</i>
<p><u>D. Acquisition Strategy</u></p> <p>The Mid-tier Networking Vehicular Radio (MNVR) is a modified Non-Developmental Item (NDI) industry solution for a multi-channel vehicular radio hosting networking waveforms, addressing the Army's requirement for Mid-tier Wideband Networking (MWN) capabilities to support the Warfighter by providing an extension of data services from the upper tactical network at brigade and battalion to the lower tactical network at company and platoon echelon platforms. This approach takes advantage of competitively priced, mature and producible technology that meets technical specifications.</p> <p>An ADM was signed on 20 September 2013 by the Defense Acquisition Executive (DAE), approving a Materiel Development Decision (MDD). The ADM designated MNVR as an ACAT 1D Special Interest Program under the continued oversight of the DAE. The ADM also approved the award of an Industry contract, and authorized the purchase of up to 232 modified NDI radios for Test & Evaluation, Platform Integration and Certification purposes in order to inform a MS C decision.</p> <p>In 4QFY 2015, the MNVR program will provide all regulatory and statutory documentation in preparation for the Milestone C (MS C) decision, which will allow the program to move forward into Low Rate Initial Production (LRIP). PdM MNVR will support IOT&E in order to complete all testing and certifications, and support platform integration, meeting the lead time required for production of platform integration assets.</p> <p>In 4QFY 2016, after Initial Operational Test & Evaluation (IOT&E) is successfully completed, the program will move forward to the Full Rate Production decision to garner approval to field. Delivery Order 3 will then procure radio systems in support of fielding to CS 17-18.</p> <p><u>E. Performance Metrics</u></p> <p>N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604290A / Mid-tier Networking Vehicular Radio (MNVR)					Project (Number/Name) DW1 / Mid-Tier Wideband Networking Vehicular Radio Mnvr						
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services - PMO	Various	Aberdeen Proving Ground : Maryland	26.676	9.259		3.816		7.113		-		7.113	Continuing	Continuing	-
Subtotal			26.676	9.259		3.816		7.113		-		7.113	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Development Analysis and Product Source Selection	C/FFP	Aberdeen Proving Ground : Maryland	12.411	1.890		-		-		-		-	Continuing	Continuing	-
Subtotal			12.411	1.890		-		-		-		-	-	-	-
Remarks Initial Operational Test & Evaluation (IOT&E) has been shifted to 3QFY16. IOT&E assets will be procured with OPA funds, post MS C, now scheduled for 4QFY15.															
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Test and Evaluation	RO	White Sands Missile Range : New Mexico	10.469	11.404		5.909		1.650		-		1.650	Continuing	Continuing	-
Subtotal			10.469	11.404		5.909		1.650		-		1.650	-	-	-
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			49.556	22.553		9.725		8.763		-		8.763	-	-	-
Remarks															

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604290A / <i>Mid-tier Networking Vehicular Radio (MNVR)</i>	Project (Number/Name) DW1 / <i>Mid-Tier Wideband Networking Vehicular Radio Mnvr</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
First Production Delivery	4	2013	4	2014
Demonstration at NIE 14.2	2	2014	3	2014
Developmental Test (Govt Integration Test)	4	2014	1	2015
Limited User Test (LUT) at NIE 15.2	3	2015	3	2015
Log Demo	3	2015	4	2015
Milestone C (MS C)	4	2015	4	2015
Low Rate Initial Production	1	2016	3	2016
Initial Operational Test and Evaluation (IOT&E) at NIE 16.2	3	2016	3	2016
Full Rate Production (FRP)	4	2016	4	2016
Full Rate Production In Progress Review (IPR) / D.O. 3	4	2016	4	2017
First Unit Equipped	1	2017	1	2017
Initial Operating Capability (IOC)	3	2017	3	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604321A / <i>All Source Analysis System</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	4.837	5.532	4.309	-	4.309	3.804	3.306	1.405	1.429	Continuing	Continuing
B41: <i>CI/HUMINT Software Products (MIP)</i>	-	2.164	1.139	3.242	-	3.242	3.804	3.306	1.405	1.429	Continuing	Continuing
B51: <i>Machine - Foreign Language Translation System</i>	-	2.673	4.393	1.067	-	1.067	-	-	-	-	-	8.133

Note

FY2016 Base adjustments amount of \$1.935 million will fund the development of a single CI/HUMINT software baseline with the Distributed Common Ground Systems-Army (DCGS-A), enabling interoperability with DCGS-A architecture, interface with Defense Intelligence Agency (DIA) databases, development of web capability, role-based access and advanced usability features.

A. Mission Description and Budget Item Justification

The All Source Analysis System (ASAS) provided US Army commanders at all echelons from battalion to Army Service Component Command (ASCC) with automated support to the management and planning, processing and analysis, and dissemination of intelligence, counterintelligence, and electronic warfare. ASAS provided the means to enhance the commander's timely and comprehensive understanding of enemy deployments, capabilities, and potential courses of action. The system used standard joint and Army protocols and message formats to interface with selected National, joint, theater, and tactical intelligence, surveillance, and reconnaissance systems and preprocessors and Army, joint, and coalition battle command systems. The ASAS Family of Systems migrated into the Distributed Common Ground System-Army (DCGS-A) program and the Army is using it as the initial platform to provide accelerated DCGS-A capabilities to the force.

The Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) is the Army's CI and HUMINT tactical collection and reporting system. CHARCS provides automation support for information collection, reporting, investigations, source & interrogation operations and document exploitation. The CHARCS automation architecture extends from the individual HUMINT team soldier or CI agent to the Corps Analysis and Control Element (ACE). CHARCS reports digital data such as maps, overlays, images, video, biometrics, scanned documents and audio files. These media are transmitted through secure networks and interfaces with the DCGS-A for detailed analysis and creation of finished intelligence products. Collection and reporting teams at Military Intelligence (MI) battalions and their operational managers are equipped with one of two CHARCS systems. The first is the AN/PYQ-8 Individual Tactical Reporting Tool (ITRT) which provides collection and processing devices for individual HUMINT team member or CI agents. The second is the AN/PYQ-3 CI/HUMINT Automated Tool Set (CHATS) which provides the team leader tools to process and manage team-collected information and a robust set of devices such as printers, scanners, cameras and audio recorders to assist the collection mission. Each CHATS has an associated Mission Support Peripheral Sets and Kits (MS-PSK) or Collection Peripheral Sets and Kits (C-PSK).

The Machine Foreign Language Translation System (MFLTS), formerly Sequoyah, develops, fields, and sustains a basic automated foreign speech and text translation capability for Army tactical systems to augment and compliment limited human linguistic resources. These integrated automated translation capabilities will be applicable across three different system configurations; a hand-held/wearable portable device, a laptop/mobile device, and in a networked/web-enabled system. The

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604321A / <i>All Source Analysis System</i>
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software modules will translate English from a prioritized list of languages in a prioritized collection of domains (e.g. medical, intelligence, base security). MFLTS will be interoperable with Commercial Off-The-Shelf (COTS) or Government Off-The-Shelf (GOTS) automation equipment to include the DCGS-A, Nett Warrior (NW), and CHARCS.

B. Program Change Summary (\$ in Millions)	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	4.837	5.532	2.374	-	2.374
Current President's Budget	4.837	5.532	4.309	-	4.309
Total Adjustments	-	-	1.935	-	1.935
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	1.935	-	1.935

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System				Project (Number/Name) B41 / CI/HUMINT Software Products (MIP)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
B41: CI/HUMINT Software Products (MIP)	-	2.164	1.139	3.242	-	3.242	3.804	3.306	1.405	1.429	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Counterintelligence (CI) and Human Intelligence (HUMINT) Automated Reporting and Collection System (CHARCS) is the Army's CI and HUMINT tactical collection and reporting system. CHARCS provides automation support for information collection, reporting, investigations, source & interrogation operations and document exploitation. The CHARCS automation architecture extends from the individual HUMINT team soldier or CI agent to the Corps. CHARCS reports digital data such as maps, overlays, images, video, biometrics, scanned documents and audio files. These media are transmitted through secure networks and interfaces with the Distributed Common Ground System-Army (DCGS-A) for detailed analysis and creation of finished intelligence products. Collection and reporting teams at Military Intelligence (MI) battalions and their operational managers are equipped with one of two CHARCS systems. The first is the AN/PYQ-8 Individual Tactical Reporting Tool (ITRT) which provides collection and processing devices for individual HUMINT team member or CI agents. The second is the AN/PYQ-3 CI/HUMINT Automated Tool Set (CHATS) which provides the team leader and Operational Management Team (OMT) tools to process and manage team-collected information and a robust set of devices such as printers, scanners, and cameras to assist the collection mission. Each CHATS has an associated Mission Support Peripheral Sets and Kits (MS-PSK) or Collection Peripheral Sets and Kits (C-PSK).												
The C-PSK provides specialized collection component capabilities to support CI/HUMINT collection missions. C-PSK capabilities are commercial-off-the-shelf (COTS) technologies and include video and camera equipment, global positioning system (GPS), voice recording device and infrared strobe lights. The MS-PSK provides specialized collection component capabilities to support CI/HUMINT collection missions at the OMT. MS-PSK capabilities are COTS technologies and include night vision photography & video, captured materiel tracking, Credibility Assessment Capability, Digital Media Forensics software, and Document Exploitation software.												
FY2016 Base amount of \$3.242 million will fund efforts for the development of the single CI/HUMINT software baseline in coordination with DCGS-A and system engineering management support.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Development and Integration toward a single CI/HUMINT Software baseline; software testing; increased software performance capability; security accreditation; and HW integration of SW.								2.164	1.139	3.242	-	3.242
Description: Development and Integration toward a single CI/HUMINT Software baseline; software testing of v1.0.0.2 SP4, v1.0.4; increased SW performance capability; HW integration testing of CHARCS SW.												
FY 2014 Accomplishments:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System			Project (Number/Name) B41 / CI/HUMINT Software Products (MIP)					
B. Accomplishments/Planned Programs (\$ in Millions)						FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Initiated efforts to improve interoperability with ATHENA functionalities, ATEC testing of CHARCS v1.0.0.2 SP4 software, AIC and COE testing.											
FY 2015 Plans: Initiating efforts for CHARCS software increased performance capability, ease of use, incremental capability improvement, DIA policy updates, and interoperability updates. Continuing efforts for testing related to AIC, COE compliance, RAM, and quality assurance, and preplanned product improvement of collection, force protection, and mission support capabilities.											
FY 2016 Base Plans: Continuing efforts for the development of the single CI/HUMINT software baseline in coordination with DCGS-A and system engineering management support.											
Accomplishments/Planned Programs Subtotals						2.164	1.139	3.242	-	3.242	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• CI HUMINT AUTO REPRTING AND COLL (C: BK5275	12.149	14.302	7.542	3.860	11.402	7.715	7.845	8.087	8.251	Continuing	Continuing
Remarks FY16 OCO funding in the amount of \$3.860 million is separately for DOD Biometrics to execute.											
D. Acquisition Strategy Program capability documentation was updated to include Capabilities Development Document (CDD) Increment 2 requirements in CHARCS Capabilities Production Document (CPD) Increment 1, Revision 1, which was signed 6 September 2012. CHARCS is a post-Milestone C program. CHARCS is leveraging Communications Electronic Command Software Engineering Center (CECOM SEC) to increase current capabilities and provide an increased performance capability version of the CHARCS software. CHARCS will leverage new contract in coordination with DCGS-A Increment 2 to develop a single CI/HUMINT software baseline that meets an integrated connected and disconnected CI/HUMINT requirements, which would save sustainment costs of maintaining multiple baselines. CHARCS will utilize competitively-awarded Task and Delivery Orders on Indefinite Deliverable, Indefinite Quantity contract vehicles to provide services. CHARCS software requires development to keep pace with incremental technology improvements, Defense Intelligence Agency compliance, and to meet AROC approved requirements documented in the CHARCS CPD Increment 1, Revision 1. PD is continuously evaluating and assessing existing Commercial-off-the-shelf (COTS) and Government-off-the-shelf (GOTS) that support CHARCS CPD Increment 1, Revision 1.											
E. Performance Metrics N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System				Project (Number/Name) B41 / CI/HUMINT Software Products (MIP)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PD CHARCS PMO Government Engineering Direct Support	Allot	PD CHARCS : Ft Belvoir, VA	3.790	-		-		0.182		-		0.182	Continuing	Continuing	Continuing
Subtotal			3.790	-		-		0.182		-		0.182	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Single CI&HUMINT SW Baseline	MIPR	DCGS-A : APG, MD	0.000	-		0.644	Jan 2015	2.300	Jan 2016	-		2.300	Continuing	Continuing	Continuing
CHARCS Software Development	MIPR	CECOM Software Engineering Center : Various Locations	16.119	-		-		-		-		-	Continuing	Continuing	Continuing
CHARCS Software Management/Development	MIPR	DCGS-A : APG, MD	0.000	1.044	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing
CHARC Software Development	MIPR	DCGS-A : APG, MD	0.000	0.520	May 2014	-		-		-		-	Continuing	Continuing	Continuing
DOMEX Tools	MIPR	National Ground Intelligence Center : Charlottesville, VA	8.100	-		-		-		-		-	-	8.100	-
Subtotal			24.219	1.564		0.644		2.300		-		2.300	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering & Testing Services - PD CHARCS PMO	MIPR	CACI, Inc. : Arlington, VA	0.857	-		-		0.570	Mar 2016	-		0.570	Continuing	Continuing	Continuing
Subtotal			0.857	-		-		0.570		-		0.570	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System				Project (Number/Name) B41 / CI/HUMINT Software Products (MIP)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTSF: Army Interoperability Certification (AIC), Common Operating environment (COE) compliance	MIPR	CECOM SEC : Ft Huachuca, AZ	0.000	-		0.295	Jan 2015	0.190	Jan 2016	-		0.190	Continuing	Continuing	Continuing
Reliability, Availability, Maintainability (RAM)	MIPR	EPG : Ft Huachuca, AZ	0.000	-		0.100	Jan 2015	-		-		-	Continuing	Continuing	Continuing
Quality Assurance	MIPR	CECOM SEC : Ft Huachuca, AZ	0.000	-		0.100	Jan 2015	-		-		-	Continuing	Continuing	Continuing
Test Support and Interoperability	MIPR	CTSF, : Ft. Hood, TX	0.612	-		-		-		-		-	Continuing	Continuing	-
Test Support and Interoperability	MIPR	US Army EPG : Ft Huachuca, AZ	0.000	0.600	Feb 2014	-		-		-		-	Continuing	Continuing	Continuing
Operational Test / Security Accreditation Testing / HW Integration Testing	MIPR	ATEC : Multiple	0.436	-		-		-		-		-	Continuing	Continuing	Continuing
Security Accreditation Collateral	MIPR	CECOM : Ft. Monmouth, NJ	0.381	-		-		-		-		-	Continuing	Continuing	-
Safety release	MIPR	CECOM : Ft. Monmouth, NJ	0.035	-		-		-		-		-	Continuing	Continuing	-
Subtotal			1.464	0.600		0.495		0.190		-		0.190	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			30.330	2.164		1.139		3.242		-		3.242	-	-	-
Remarks															

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

Date: February 2015

Appropriation/Budget Activity

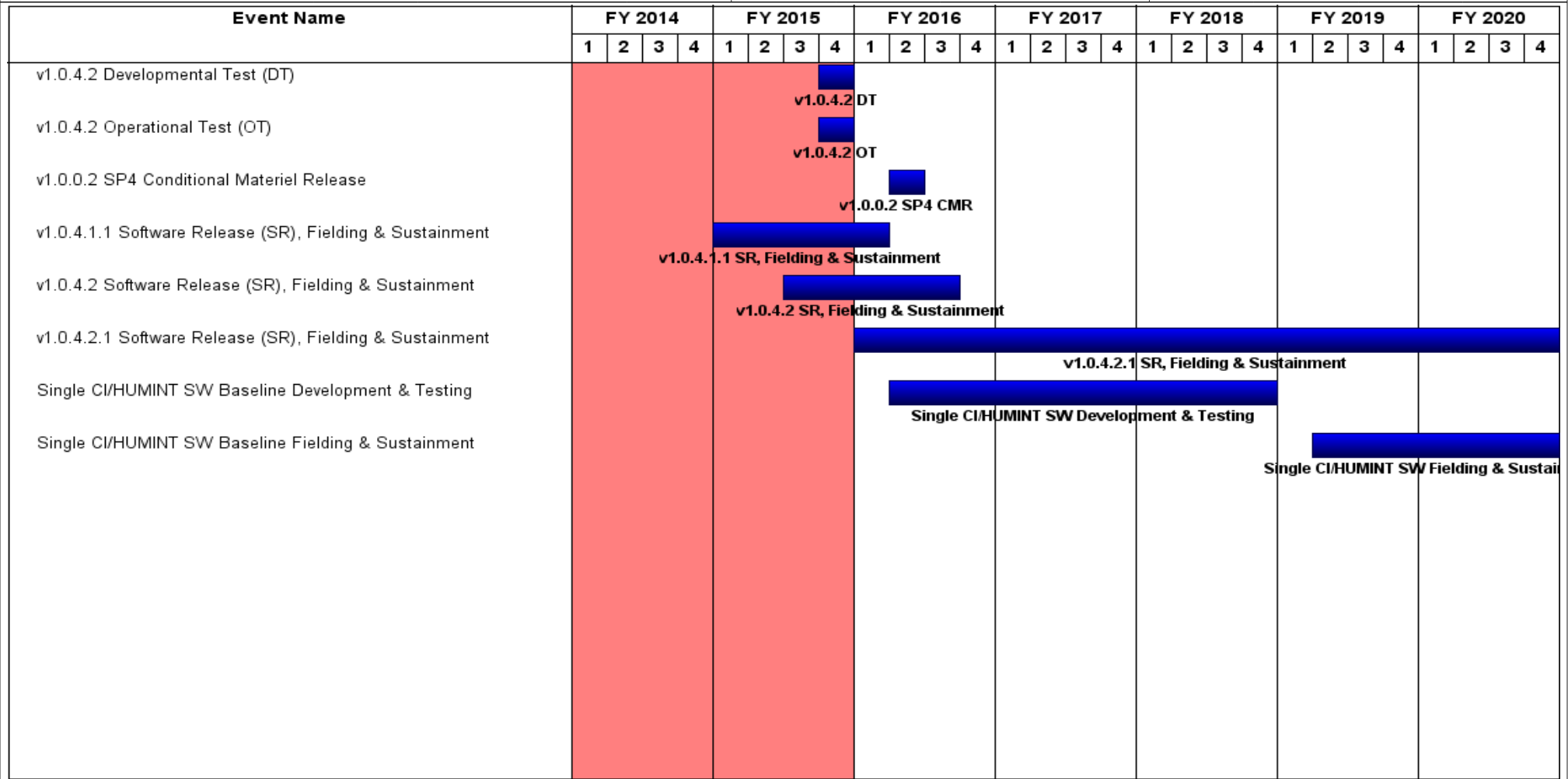
2040 / 5

R-1 Program Element (Number/Name)

PE 0604321A / All Source Analysis System

Project (Number/Name)

B41 / CI/HUMINT Software Products (MIP)



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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604321A / <i>All Source Analysis System</i>	Project (Number/Name) B41 / <i>CI/HUMINT Software Products (MIP)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
v1.0.4.2 Developmental Test (DT)	4	2015	4	2015
v1.0.4.2 Operational Test (OT)	4	2015	4	2015
v1.0.0.2 SP4 Conditional Materiel Release	2	2016	2	2016
v1.0.4.1.1 Software Release (SR), Fielding & Sustainment	1	2015	1	2016
v1.0.4.2 Software Release (SR), Fielding & Sustainment	3	2015	3	2016
v1.0.4.2.1 Software Release (SR), Fielding & Sustainment	1	2016	2	2021
Single CI/HUMINT SW Baseline Development & Testing	2	2016	4	2018
Single CI/HUMINT SW Baseline Fielding & Sustainment	2	2019	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System				Project (Number/Name) B51 / Machine - Foreign Language Translation System			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
B51: Machine - Foreign Language Translation System	-	2.673	4.393	1.067	-	1.067	-	-	-	-	-	8.133
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Machine Foreign Language Translation System (MFLTS), formerly named Sequoyah, develops, fields, and sustains a basic automated foreign speech and text translation capability for Army tactical systems to augment and compliment limited human linguistic resources. These integrated automated translation capabilities will be applicable across three different system configurations; a hand-held/wearable portable device, a laptop/mobile device, and in a networked/web-enabled system. The software modules will translate English from a prioritized list of languages in a prioritized collection of domains (e.g. medical, intelligence, base security). MFLTS will be interoperable with Commercial Off-The-Shelf (COTS) or Government Off-The-Shelf (GOTS) automation equipment to include the Distributed Common Ground System-Army (DCGS-A), Nett Warrior (NW), and Counterintelligence Human Intelligence Automated Reporting and Collection System (CHARCS).

FY16 Base RDTE dollars in the amount of \$1.067 million provides engineering support for the continued development of Speech to Speech (S2S) languages in Iraqi Arabic and Pashto and Text to Text (T2T) language in Modern Standard Arabic (MSA).

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development and Engineering	2.233	3.269	0.614	-	0.614
Description: Development and integration of Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software for the following languages: Pashto, Iraqi Arabic, and Modern Standard Arabic.					
FY 2014 Accomplishments: Initiated efforts to develop and integrate Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software					
FY 2015 Plans: Complete development and integration of Critical Technology Elements (CTE) of Automated Speech Recognition (ASR), Optical Character Recognition (OCR), and Machine Language Translation Translation Engine (MLT TE) software					
FY 2016 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army				Date: February 2015							
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System		Project (Number/Name) B51 / Machine - Foreign Language Translation System							
B. Accomplishments/Planned Programs (\$ in Millions)											
	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total						
Will support the continued development of Speech to Speech (S2S) languages in Iraqi Arabic and Pashto and Text to Text (T2T) language in Modern Standard Arabic (MSA).											
Title: Test and Evaluation of MFLTS Capabilities Description: Testing of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process FY 2015 Plans: Will continue testing of the automated language translation capabilities using established metrics, collected standard data sets, and standardized objective validation process	-	0.684	-	-	-						
Title: PD Support and Management Services Description: Program Office Support FY 2014 Accomplishments: Provided program support and matrixed services at other Government activities FY 2015 Plans: Continuing program support and matrixed services at other Government activities FY 2016 Base Plans: Will continue to provide program management office support	0.440	0.440	0.453	-	0.453						
Accomplishments/Planned Programs Subtotals	2.673	4.393	1.067	-	1.067						
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• MFLTS: B88605 - Machine Foreign Language Translation System (MFLTS)	-	-	8.125	-	8.125	-	-	-	-	-	8.125
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604321A / <i>All Source Analysis System</i>	Project (Number/Name) B51 / <i>Machine - Foreign Language Translation System</i>
<p><u>D. Acquisition Strategy</u></p> <p>The MFLTS Technology Development (TD) Phase developed an open software architecture prototype using full and open competition that allowed the addition, upgrade and replacement of translation system components for integration into existing Programs. During the Engineering and Manufacturing Development (EMD) Phase, the program integrated technology demonstrated during the TD Phase to meet Key Performance Parameters (KPPs). This included the requirement to meet an Interagency Language Roundtable (ILR) level of 1 for two speech translation modules and an ILR level of 1+ for one text translation module in hand-held/wearable portable, laptop/mobile, and networked/web-enabled system configurations. Milestone B was achieved 22 Jul 13 and an option year contract for the EMD phase was awarded 22 Jul 13. Following a Limited Deployment Decision (LDD), a full and open competition production contract will be issued to integrate and field the latest MFLTS capabilities.</p> <p><u>E. Performance Metrics</u></p> <p>N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System				Project (Number/Name) B51 / Machine - Foreign Language Translation System					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	MIPR	Various : Ft. Belvoir, VA	3.536	0.440	Jan 2014	0.440		0.453	Nov 2014	-		0.453	Continuing	Continuing	-
Subtotal			3.536	0.440		0.440		0.453		-		0.453	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development Contract	MIPR	Raytheon BBN : Cambridge, MA	12.000	-		0.553		-		-		-	-	12.553	-
Engineering Development	MIPR	Various : Various	1.713	0.876	Jun 2014	1.284		-		-		-	Continuing	Continuing	-
Subtotal			13.713	0.876		1.837		-		-		-	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Various : Various	3.225	1.357	Oct 2013	1.432		0.614	Nov 2014	-		0.614	Continuing	Continuing	-
Subtotal			3.225	1.357		1.432		0.614		-		0.614	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Activities	MIPR	USA Test and Eval Command : Alexandria, VA	0.981	-		0.419		-		-		-	Continuing	Continuing	-
Data Collection	MIPR	Army Research Laboratory : Adelphi, MD	0.308	-		-		-		-		-	-	0.308	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System				Project (Number/Name) B51 / Machine - Foreign Language Translation System					

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Readiness Assessment	MIPR	Army Research Laboratory : Adelphi, MD	0.000	-		0.047		-		-		-	-	0.047	-
Forensic Analysis	MIPR	Pro Services : Trenton, NJ	0.000	-		0.032		-		-		-	-	0.032	-
PM and Host Platform Test and Evaluation Activities	MIPR	Various : Various	0.000	-		0.186		-		-		-	-	0.186	-
Subtotal			1.289	-		0.684		-		-		-	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.763	2.673		4.393		1.067		-		1.067	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604321A / All Source Analysis System								Project (Number/Name) B51 / Machine - Foreign Language Translation System														
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) Contractor Test	CT ▲1																															
(2) Development Test	DT ▲2																															
(3) Initial Operational Test & Evaluation					IOT&E ▲3																											
(4) Initial Capability - Limited Deployment Decision					LDD ▲4																											
Continued engineering support for development and integration																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604321A / <i>All Source Analysis System</i>	Project (Number/Name) B51 / <i>Machine - Foreign Language Translation System</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contractor Test	2	2014	2	2014
Development Test	4	2014	4	2014
Initial Operational Test & Evaluation	3	2015	4	2015
Initial Capability - Limited Deployment Decision	4	2015	4	2015
Continued engineering support for development and integration	1	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604328A / <i>TRACTOR CAGE</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	28.229	19.929	15.138	-	15.138	16.512	16.091	16.309	17.375	Continuing	Continuing
C71: <i>Tractor Cage</i>	-	28.229	19.929	15.138	-	15.138	16.512	16.091	16.309	17.375	Continuing	Continuing

Note

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

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).

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	23.829	19.929	24.619	-	24.619
Current President's Budget	28.229	19.929	15.138	-	15.138
Total Adjustments	4.400	-	-9.481	-	-9.481
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	4.400	-	-9.481	-	-9.481

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	82.332	34.575	74.128	-	74.128	72.273	63.999	60.957	48.183	Continuing	Continuing
S58: Soldier Enhancement Program	-	3.812	3.529	5.554	-	5.554	8.705	7.475	5.099	3.101	Continuing	Continuing
S60: Clothing & Equipment	-	5.266	2.518	4.180	-	4.180	7.154	10.897	10.765	6.651	Continuing	Continuing
S61: Acis Engineering Development	-	13.716	1.742	3.463	-	3.463	3.893	3.880	3.812	1.861	Continuing	Continuing
S62: Counter-Defilade Target Engagement - SDD	-	12.545	7.861	21.077	-	21.077	10.109	6.105	0.987	-	Continuing	Continuing
S63: Small Arms Improvement	-	17.387	11.095	20.303	-	20.303	22.665	19.926	19.542	19.732	Continuing	Continuing
S64: Common Remotely Operated Wpn Sys (CROWS)	-	9.145	2.457	3.124	-	3.124	4.582	3.546	9.142	10.523	-	42.519
S70: Personnel Recovery Support System (PRSS)	-	1.094	0.543	1.252	-	1.252	1.328	1.328	1.328	1.346	Continuing	Continuing
VS5: Soldier Protective Equipment	-	19.367	4.830	15.175	-	15.175	13.837	10.842	10.282	4.969	Continuing	Continuing

A. Mission Description and Budget Item Justification

FY 2016 budget request funds Infantry Support Weapons. This program element (PE) Engineering and Manufacturing Development (EMD) manages the Soldier as a system, with the goal of increasing Soldiers' combat effectiveness, increasing survivability, and improving the Soldiers' quality of life. It develops and tests prototypes of weapons, clothing, equipment, and other items useful to support the Soldier.

Project S58 (Soldier Enhancement Program) supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids.

Project S59 (Soldier Support Equipment) supports system development and prototyping of critical Soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness.

Project S60 (Clothing and Equipment) supports pre-production development of state-of-the-art individual clothing and equipment to improve the survivability, mobility and sustainment affecting the quality of life of the individual Soldier.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				
Project S61 (Aircrew Integrated Systems) provides System Development programs with improved aviator safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Armed Reconnaissance Helicopter.						
Project S62 (Counter-Defilade Target Engagement) the XM25, Individual Airburst Weapon System (IAWS) delivers a 25mm programmable high explosive airburst (HEAB) round to defeat defilade and point areas targets out to approximately 600 meters. Accurate and lethal engagement of defilade targets at the squad level is the number one capability gap identified by the United States Army Infantry Center (USAIC).						
Project S63 (Small Arms Improvements) demonstrates engineering development models or integrated commercial items designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and ammunition. FY2011 new programs include Improved Weapons Coatings, Personal Defense Weapon, 30 Round 5.56mm Magazine, Modular Handgun and Precision Sniper Rifle.						
Project S64 (CROWS) continue enhancing CROWS capability and reliability, and to increase its application across combat and tactical platforms. This capability will enhance the Soldier's survivability, lethality and situational awareness.						
Project S70 (Personnel Recovery Support System) provides system research, development and testing of the Personal Recovery Support System/Personnel Recovery Support Equipment supporting operations to report and locate isolated, missing, detained or captured Soldiers.						
Project VS5 (Soldier Protective Equipment) supports engineering and manufacturing development of Individual Soldier Ballistic Protection equipment. It will leverage advancements in technology to continue incremental improvements to body armor (to include improved outer tactical vests, plate carriers, and helmets) and other personal protective equipment.						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		85.054	27.884	62.605	-	62.605
Current President's Budget		82.332	34.575	74.128	-	74.128
Total Adjustments		-2.722	6.691	11.523	-	11.523
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-0.015			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-	-			
• Other Adjustments 1		-2.722	6.706	11.523	-	11.523

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>		R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2014	FY 2015
Project: S63: <i>Small Arms Improvement</i>			
Congressional Add: <i>New Weapons Congressional Add</i>		-	4.875
Congressional Add: <i>Small Arms Weapons Enhancements Congressional Add</i>		-	0.700
Congressional Add: <i>Combat Optics Congressional Add</i>		-	0.600
Congressional Add: <i>Fire Control Congressional Add</i>		-	0.527
Congressional Add Subtotals for Project: S63		-	6.702
Congressional Add Totals for all Projects		-	6.702

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S58 / Soldier Enhancement Program			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S58: Soldier Enhancement Program	-	3.812	3.529	5.554	-	5.554	8.705	7.475	5.099	3.101	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Soldier Enhancement Program (SEP) was established by the National Defense Authorization Acts for Fiscal Years 1990 and 1991. The purpose of the SEP is to evaluate Commercial Off the Shelf/Government Off the Shelf/Non-Developmental Items (COTS/GOTS/NDI) production that can increase combat effectiveness of the Soldier. The SEP uses a Buy, Try and Decide methodology to support accelerated evaluation, integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids. Proposals are submitted by Soldiers and others at any time and received twice a year by the SEP council. Proposal which are approved and validated become SEP Initiatives. SEP Initiatives are procured, evaluated by Soldiers, and report completed within a goal of a 12 month timeframe. This RDT&E funding is primarily used for soldier evaluation/preparation of evaluation reports. The associated Procurement lines are primarily used for procuring the COTS/GOTS/NDI hardware for evaluation.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Soldier Enhancement Program (SEP) Evaluations	3.324	3.032	5.048	-	5.048
Description: Procured and evaluated COTS/GOTS/NDI items that has the potential to enhance Soldier combat effectiveness.					
FY 2014 Accomplishments: FY2014 funding supports product evaluation of Lightweight Carbon Fiber Wrapped Rifle Barrels; Precision Guided Firearm – AR; Biodegradable CLP; Binocular Link for Smart Phones (BLINKS); MK 19 Fire Control System; Bolt Carrier Cleaning Tool; Grip Rail Interface Protection System (GRIPS); GRIPS Sleeve; 40x46mm HEDP-IM ERLV; 40mm High Velocity Airburst Munition; White Phosphor I2 Monocular; Binocular Night Vision Device (BNVD), PHASE II; Binocular Bridge; Universal Thermal Clip-on (UTC); HelStar F2 Strobe Light System; Tactical Welding Jacket; Power Plus Mouth Guards; Rolatube Expeditionary Systems; Pocket Digital Data Link (DDL) Remote Terminal (RT); BTC-70911X Flex Charger; TSE-RF-SAT-MP-A12, Manpack Antenna; Variable Combat Optic Gunsight (VCOG); Modular Protection Attachment System (MPAS); Battery Harvester.					
FY 2015 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S58 / Soldier Enhancement Program			
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY2015 funding will support evaluation as new initiatives approved by SEP Council of Colonels (COCs). Product evaluations will include safety testing and confirmation (as needed), collection, and analysis of user feedback/ results. Anticipate approving and evaluating approximately 18 initiatives.						
FY 2016 Base Plans: FY2016 funding will support evaluation as new initiatives approved by SEP Council of Colonels (COCs). Product evaluations will include safety testing and confirmation (as needed), collection, and analysis of user feedback/results and documentation of results. Anticipate approving and evaluating approximately 20 initiatives.						
Title: Systems Engineering and Program Management.		0.488	0.497	0.506	-	0.506
Description: Systems Engineering and Program Management.						
FY 2014 Accomplishments: FY2014 supported website development and development of Soldier outreach materials to better accommodate the number, quality and timeliness of SEP proposals. In addition, continued evaluation of incoming proposals submitted via the SEP web application (http://peosoldier.army.mil/SEP), . Additionally, coordination was performed with industry and US Army TRADOC proponents to ensure proposals satisfied user needs and the materiel alternatives were COTS/GOTS/NDI solutions that can be readily purchased. Initiatives that completed evaluations received recommendations as to whether the capability should transition to become an eventual fielded capability or the effort should be terminated IAW AR 71-9.						
FY 2015 Plans: Continue coordinated with industry and US Army TRADOC Proponents to ensure that proposals submitted satisfied user needs, materiel alternatives are COTS/GOTS/NDI solutions that can be readily purchased and evaluated, perform analysis of incoming proposals in preparation for the FY2015 SEP Council meetings that determines which proposals would be evaluated as SEP initiatives. Initiatives completing evaluations receive recommendations to either transition the capability to the field or terminate the effort IAW AR 71-9. Coordination with US ARMY TRADOC Proponents continues as screening process as well as to help ensure that SEP initiative evaluations inform the requirements process.						
FY 2016 Base Plans: Continue coordinated with industry and US Army TRADOC Proponents to ensure that proposals submitted satisfied user needs, materiel alternatives are COTS/GOTS/NDI solutions that can be readily purchased and evaluated, perform analysis of incoming proposals in preparation for the FY2016 SEP Council meetings that determines which proposals would be evaluated as SEP initiatives. Initiatives completing evaluations receive recommendations to either transition the capability to the field or terminate the effort IAW AR 71-9. Coordination						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S58 / <i>Soldier Enhancement Program</i>				
B. Accomplishments/Planned Programs (\$ in Millions)												
								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
with US ARMY TRADOC Proponents continues as screening process as well as to help ensure that SEP initiative evaluations inform the requirements process.												
Accomplishments/Planned Programs Subtotals								3.812	3.529	5.554	-	5.554
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• OPA3 MA6800: <i>Soldier Enhancement - Other Support Equipment - MA6800</i>	-	1.677	2.287	-	2.287	2.291	2.461	2.463	2.523	Continuing	Continuing	
• OPA2 BA5300: <i>Soldier Enhancement - Comms & Electronics Equipment - BA5300</i>	-	0.294	0.349	-	0.349	0.382	0.485	0.489	0.507	Continuing	Continuing	
• WTCV GC0076: <i>Soldier Enhancement - Smalls Arms Weapons - GC0076</i>	1.267	1.682	2.392	-	2.392	2.591	2.793	2.759	2.828	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
SEP candidates are reviewed and approved semi-annually and procured Other Procurement Army (OPA) and Weapons and Tracked Combat Vehicles (WTCV).												
E. Performance Metrics												
N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S58 / Soldier Enhancement Program					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier : Ft. Belvoir, VA	11.765	0.488	Mar 2014	0.497	Mar 2015	0.506	Mar 2016	-		0.506	Continuing	Continuing	Continuing
Subtotal			11.765	0.488		0.497		0.506		-		0.506	-	-	-
Remarks Systems Engineering and Program Management includes in-house engineering support and integration services, conducting technical evaluations, market research and program reviews.															
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier : Ft. Belvoir, VA	39.573	-		-		-		-		-	-	39.573	Continuing
Subtotal			39.573	-		-		-		-		-	-	39.573	-
Remarks Candidates for the Soldier Enhancement Program are received, reviewed, and approved semi-annually. Contractual efforts are focused on procuring prototypes for testing.															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier : Ft. Belvoir, VA	6.424	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			6.424	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO Soldier : Ft. Belvoir, VA	13.486	3.324	Aug 2014	3.032	Aug 2015	5.048	Aug 2016	-		5.048	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S58 / <i>Soldier Enhancement Program</i>
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Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			13.486	3.324		3.032		5.048		-		5.048	-	-	-

Remarks

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

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	71.248	3.812		3.529		5.554		-		5.554	-	-	-

Remarks

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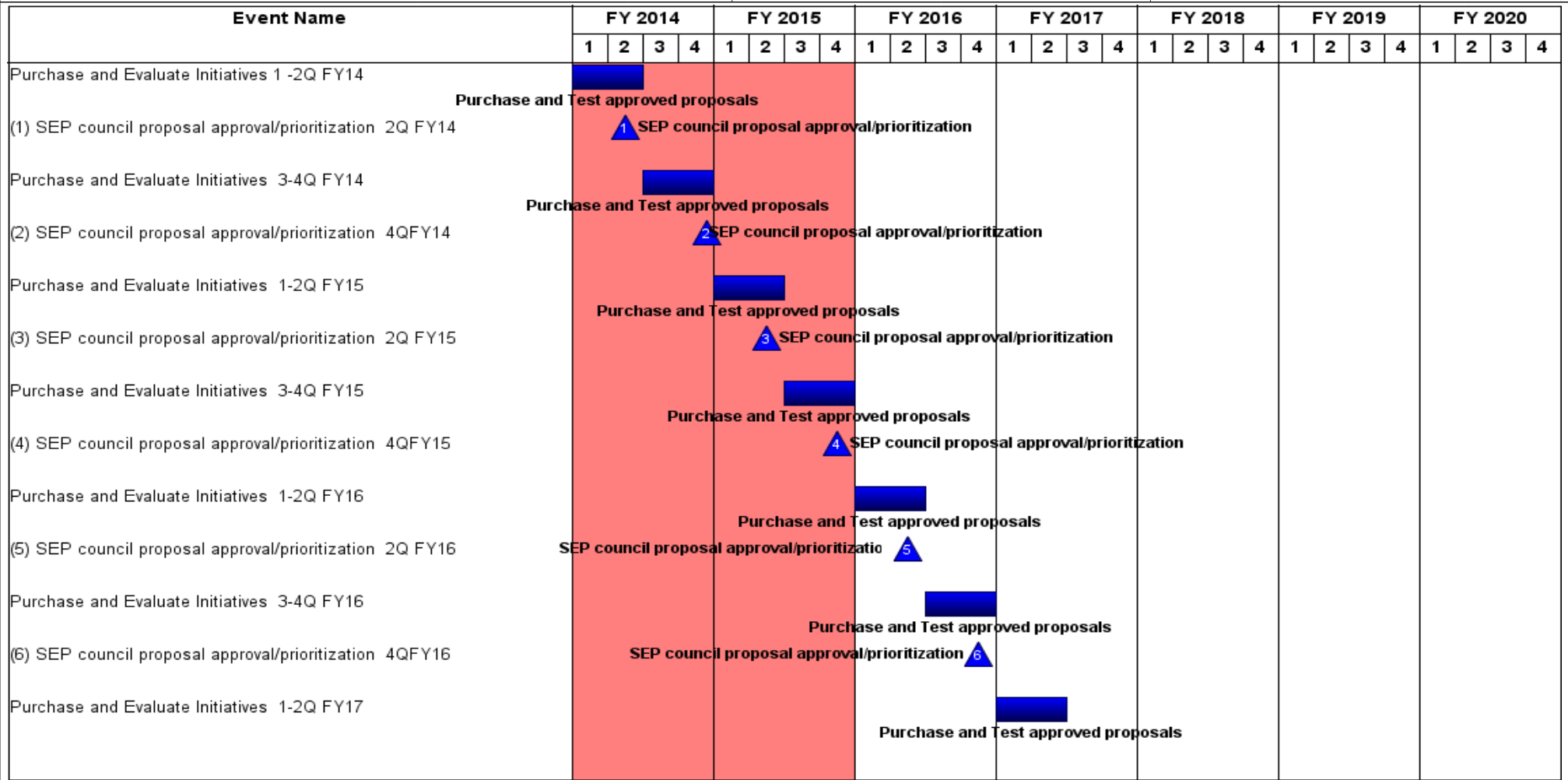
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604601A / *Infantry Support Weapons*

Project (Number/Name)
S58 / *Soldier Enhancement Program*



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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army												Date: February 2015																
Appropriation/Budget Activity 2040 / 5												R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) S58 / Soldier Enhancement Program								
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) SEP council proposal approval/prioritization 2Q FY17													SEP council proposal approval/prioritization 1															
Purchase and Evaluate Initiatives 3-4Q FY17													Purchase and Test approved proposals															
(2) SEP council proposal approval/prioritization 4QFY17													SEP council proposal approval/prioritization 2															
Purchase and Evaluate Initiatives 1-2Q FY18													Purchase and Test approved proposals															
(3) SEP council proposal approval/prioritization 2Q FY18													SEP council proposal approval/prioritization 3															
Purchase and Evaluate Initiatives 3-4Q FY18													Purchase and Test approved proposals															
(4) SEP council proposal approval/prioritization 4QFY18													SEP council proposal approval/prioritization 4															
Purchase and Evaluate Initiatives 1-2Q FY19													Purchase and Test approved proposals															
(5) SEP council proposal approval/prioritization 2Q FY19													SEP council proposal approval/prioritization 5															
Purchase and Evaluate Initiatives 3-4Q FY19													Purchase and Test approved proposals															
(6) SEP council proposal approval/prioritization 4QFY19													SEP council proposal approval/prioritization 6															
Purchase and Evaluate Initiatives 1-2Q FY20													Purchase and Test approved prop															

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604601A / Infantry Support Weapons

Project (Number/Name)

S58 / Soldier Enhancement Program

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Purchase and Evaluate Initiatives 1 -2Q FY14	1	2014	2	2014
SEP council proposal approval/prioritization 2Q FY14	2	2014	2	2014
Purchase and Evaluate Initiatives 3-4Q FY14	3	2014	4	2014
SEP council proposal approval/prioritization 4QFY14	4	2014	4	2014
Purchase and Evaluate Initiatives 1-2Q FY15	1	2015	2	2015
SEP council proposal approval/prioritization 2Q FY15	2	2015	2	2015
Purchase and Evaluate Initiatives 3-4Q FY15	3	2015	4	2015
SEP council proposal approval/prioritization 4QFY15	4	2015	4	2015
Purchase and Evaluate Initiatives 1-2Q FY16	1	2016	2	2016
SEP council proposal approval/prioritization 2Q FY16	2	2016	2	2016
Purchase and Evaluate Initiatives 3-4Q FY16	3	2016	4	2016
SEP council proposal approval/prioritization 4QFY16	4	2016	4	2016
Purchase and Evaluate Initiatives 1-2Q FY17	1	2017	2	2017
SEP council proposal approval/prioritization 2Q FY17	2	2017	2	2017
Purchase and Evaluate Initiatives 3-4Q FY17	3	2017	4	2017
SEP council proposal approval/prioritization 4QFY17	4	2017	4	2017
Purchase and Evaluate Initiatives 1-2Q FY18	1	2018	2	2018
SEP council proposal approval/prioritization 2Q FY18	2	2018	2	2018
Purchase and Evaluate Initiatives 3-4Q FY18	3	2018	4	2018
SEP council proposal approval/prioritization 4QFY18	4	2018	4	2018
Purchase and Evaluate Initiatives 1-2Q FY19	1	2019	2	2019
SEP council proposal approval/prioritization 2Q FY19	2	2019	2	2019
Purchase and Evaluate Initiatives 3-4Q FY19	3	2019	4	2019

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S58 / Soldier Enhancement Program
		Start		End
Events		Quarter	Year	Quarter Year
SEP council proposal approval/prioritization 4QFY19		4	2019	4 2019
Purchase and Evaluate Initiatives 1-2Q FY20		1	2020	2 2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S60 / <i>Clothing & Equipment</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S60: <i>Clothing & Equipment</i>	-	5.266	2.518	4.180	-	4.180	7.154	10.897	10.765	6.651	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding supports engineering and manufacturing development tasks related to individual clothing, equipment and personnel parachutes with the goal of enhancing the survivability, mobility and quality of life of the individual Soldier. It funds system integration and formal Developmental Testing/Operational Testing of preproduction and production representative systems leveraging advancements in materials, fabrication techniques, moisture management, flame resistance, antimicrobial treatments, insect protection, extreme environmental protection and chemical/biological protection and camouflage, to include evaluation, test, and conduct of Soldier evaluations of Organizational Clothing and Individual Equipment appropriate for use in jungle/tropical and Arctic environments. Goal is to increase the capabilities and durability of tactical and non-tactical clothing and individual equipment. It also funds improvements and testing/evaluation of personnel parachute systems.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Soldier Uniforms and Clothing	3.479	0.518	3.180	-	3.180
Description: Develop and provide superior and sustainable integrated clothing for the Soldier in a rapidly changing global environment.					
FY 2014 Accomplishments: Environmental Clothing and Equipment. Obtained a Milestone (MS) C and Full Rate Production (FRP) Decision to transition the Rapid Fielding Initiative Army Combat Glove (ACG) to Program of Record in 1QFY14. Obtained MS C and Full Rate Production Decision in 1QFY14 for the Army Combat Shirt (ACS). Conducted photo simulation evaluations of existing transitional camouflage patterns in 2QFY14, followed by both photo simulation and field evaluations of existing Services' woodland, transitional, and arid patterns in 4QFY14. Conducted evaluation of most effective colors to be used on combat boots, T-shirts and belts used with the combat uniform. Developed shade standards to be used in leather handwear. Finalized production specifications for temperate and hot weather variants of the Mountain Combat Boot (MCB) and obtained MDD and MS C in 4QFY14. Tactical/Personal Clothing. Conducted market survey, procured prototype, conducted technical testing to include Pyroman burn tests, user evaluations and developed patterns for the Army Aircrew Combat Uniform–Women's (A2CU-W). Optimized performance of the deployment of camouflage uniform pattern across the Near Infrared spectrum. Clothing Bag. Continued to refine designs and incorporate new materials and designs into clothing bag items. Finalized patterns, Technical Data Package, and Supply Request Package for the next generation Army Physical Fitness Uniform (APFU) providing improved fit, moisture wicking and antimicrobial capabilities and					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S60 / Clothing & Equipment		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
transitioned to Defense Logistics Agency- Troop Support for production. Developed patterns and conducted initial user evaluation on Army Service Uniform (ASU) to address women's concerns in fit and function of the ASU. FY 2015 Plans: Flame Resistant Clothing. Will obtain MDD and Milestone C Decision for the Army Combat Pant (ACP) in 2QFY15. Clothing Bag. Procure prototypes of Garrison Food Service Uniform (GFSU), and conduct follow-on user evaluation to test modified patterns to incorporate commercial standards for burn protection, stain release, and professional appearance into the GFSU. GFSU MDD and MS-C anticipated 4QFY15. Develop revised patterns and conduct follow-on user evaluation on Army Service Uniform (ASU) slacks to address women's concerns in fit and function of the ASU. Tactical/Personal Clothing. Conduct evaluation of combat uniform fabrics and footwear suitable for use in hot/ humid (jungle) environments. FY 2016 Base Plans: Uniform Clothing and Environmental Clothing System. Obtain Milestone B (MS B) for hot weather footwear 2QFY16. Conduct market survey, and initiate Developmental Testing (DT) on footwear. Evaluate, test, and conduct Soldier evaluations of Organizational Clothing and Individual Equipment appropriate for use in jungle/ tropical and arctic environments. Conduct DT of the Capacitive Army Combat Gloves to interface with touch screen user devices. Conduct operational tests (OT) of improved fabrics to reduce weight of Winter overwhites. Clothing Bag. Will continue to refine designs and incorporate alternate materials and designs in clothing bag items including the Women's Army Service Uniform (ASU) slacks, the Women's Maternity Utility Uniform, alternate fabrics for the Army Physical Fitness Uniform, and redesign and testing of the medium and lightweight drawers.						
Title: Individual Equipment Description: Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment. FY 2014 Accomplishments: Personnel Airdrop. Obtained Milestone C decision for RA-1 Military Free Fall Advanced Ram Air Parachute System (MFF ARAPS in 1QFY14). Obtained Pre-EMD Decision in 2QFY14 and Milestone B decision in 3QFY14 for the Parachute Navigation System (PARANAVSYS) program, with procurement of Developmental Testing (DT) 1 assets in 4QFY14. The PARANAVSYS will provide Global Positioning System (GPS) navigation		1.787	2.000	1.000	-	1.000

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S60 / Clothing & Equipment			
B. Accomplishments/Planned Programs (\$ in Millions)						FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
capability to Military Free Fall (MFF) parachutists. Conducted DT 1 testing on PARANAVSYS to include environmental and physical properties testing. FY 2015 Plans: Personnel Airdrop. Will procure Developmental Test 2 (DT2) assets and conduct DT testing on PARANAVSYS which provides GPS navigation capabilities to MFF parachutists. Procure samples and conduct Developmental Testing (D T) of Individual Water Treatment Device (IWTD) and achieve MS C in 1FY16. NBC /Load Carriage: Conduct Limited User Evaluation of the Airborne Rucksack in 3QFY15. FY 2016 Base Plans: Airdrop. Obtain Milestone B (MS B) for the Enhanced Electronic Automatic Activation Device (EEAAD) in 2QFY16. Conduct Developmental Testing of the EEAAD for Military Free Fall Parachutes. Obtain MS C 1QFY16 for the Parachute Navigation System (PARANAVSYS) which will result in a Global Positioning System (GPS) capability for MFF Parachutists. Conduct Follow-on Test and Evaluation to support Full Material Release of PARANAVSYS. Conduct Developmental and Operational Tests on the ripcord design of the T-11 Reserve (R) parachute to reduce potential of accidental activation.											
Accomplishments/Planned Programs Subtotals						5.266	2.518	4.180	-	4.180	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Clothing and Individual Eqp S53: RDTE, 0603827.S53, Clothing and Equipment	5.608	1.555	9.185	-	9.185	8.436	7.108	7.296	7.651	Continuing	Continuing
• Central Funding and Fielding: OMA, 121017, Central Funding and Fielding	88.771	127.085	126.907	-	126.907	134.879	134.876	133.442	150.872	Continuing	Continuing
• Advanced Tactical Parachute System: OPA, MA7801, Advanced Tactical Parachute System	35.177	25.996	26.303	-	26.303	26.108	40.854	43.546	12.235	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S60 / <i>Clothing & Equipment</i>
D. Acquisition Strategy Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S60 / Clothing & Equipment					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
In-House Support	Various	PM SPIE : Various	8.025	0.450		-		0.800		-		0.800	Continuing	Continuing	Continuing
Subtotal			8.025	0.450		-		0.800		-		0.800	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	NSRDEC : Natick, MA	13.989	0.900		0.408		0.498		-		0.498	Continuing	Continuing	Continuing
Development Contracts	Various	Various : Various	38.912	2.519		1.210		0.892		-		0.892	Continuing	Continuing	Continuing
Subtotal			52.901	3.419		1.618		1.390		-		1.390	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	Various	Various : Various	15.046	0.250		-		0.790		-		0.790	Continuing	Continuing	Continuing
Subtotal			15.046	0.250		-		0.790		-		0.790	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Various : Various	16.258	1.147		0.900		1.200		-		1.200	Continuing	Continuing	Continuing
Subtotal			16.258	1.147		0.900		1.200		-		1.200	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			92.230	5.266		2.518		4.180		-		4.180	-	-	-
Remarks															

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604601A / *Infantry Support Weapons*

Project (Number/Name)

S60 / *Clothing & Equipment*

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
UNIFORM CLOTHING																												
(1) Hot Weather Footwear MS B												1																
(2) Army Combat Glove MS C	2																											
(3) Army Combat Shirt MS C	3																											
(4) Mountain Combat Boot MS C				4																								
(5) Army Combat Pant MS C								5																				
Continue Fabric & FR Upgrades																												
Alternate Camo Pattern OT (Phase IV)																												
(6) Camo Decision				6																								
Clothing Bag Upgrades and Evaluations																												
APFU Product Improvement																												
A2CU Improvements and women's sizing																												
Garrison Food Service Uniform Improvements																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) S60 / Clothing & Equipment										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Garrison Food Service Uniform Milestone C								▲1																				
Transition A2CU improvements to DLA Troop Support																												
INDIVIDUAL EQUIPMENT																												
(2) EEAAD MDD and MS B												▲2																
EEAAD Operational Testing																												
(3) Enhanced EAAD MS C																▲3												
(4) ILCS MS B													▲4															
Integrated Load Carriage Equipment DT/OT																												
(5) Integrated Load Carriage Equipment MS C																												
(6) Environmental Protection Ensemble (EPE) MS B													▲6															
EPE DT/OT																												
(7) EPE MS C																												
PARANAVSYS DT/OT																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) S60 / Clothing & Equipment														
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) PARANAVSYS MS C									1																							
(2) ARAPS MS-C	2																															
(3) IWTD Milestone C					3																											

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604601A / Infantry Support Weapons

Project (Number/Name)

S60 / Clothing & Equipment

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
UNIFORM CLOTHING	1	2010	4	2015
Hot Weather Footwear MS B	2	2016	2	2016
Army Combat Glove MS C	1	2014	1	2014
Army Combat Shirt MS C	1	2014	1	2014
Mountain Combat Boot MS C	4	2014	4	2014
Army Combat Pant MS C	2	2015	2	2015
Continue Fabric & FR Upgrades	3	2009	4	2018
Alternate Camo Pattern OT (Phase IV)	1	2012	3	2014
Camo Decision	3	2014	3	2014
Clothing Bag Upgrades and Evaluations	1	2012	4	2018
APFU Product Improvement	1	2012	3	2015
A2CU Improvements and women's sizing	1	2012	4	2015
Garrison Food Service Uniform Improvements	1	2015	3	2015
Garrison Food Service Uniform Milestone C	4	2015	4	2015
Transition A2CU improvements to DLA Troop Support	3	2014	3	2014
INDIVIDUAL EQUIPMENT	2	2008	4	2015
EEAAD MDD and MS B	2	2016	2	2016
EEAAD Operational Testing	3	2016	1	2017
Enhanced EAAD MS C	2	2017	2	2017
ILCS MS B	4	2016	4	2016
Integrated Load Carriage Equipment DT/OT	2	2017	4	2017
Integrated Load Carriage Equipment MS C	4	2017	4	2017
Environmental Protection Ensemble (EPE) MS B	4	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S60 / Clothing & Equipment
		Start		End
Events	Quarter	Year	Quarter	Year
EPE DT/OT	2	2017	4	2017
EPE MS C	1	2018	1	2018
PARANAVSYS DT/OT	3	2014	4	2014
PARANAVSYS MS C	1	2016	1	2016
ARAPS MS-C	2	2014	2	2014
IWTD Milestone C	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S61 / <i>Acis Engineering Development</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S61: <i>Acis Engineering Development</i>	-	13.716	1.742	3.463	-	3.463	3.893	3.880	3.812	1.861	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project conducts Engineering and Manufacturing Development (EMD) for the Air Soldier System (Air SS). The Air SS is Army aircrew survival and mission equipment that improves safety, survivability, and human performance. The Air SS Capability Development Document addresses capability gaps identified during sustained combat operations in Iraq and Afghanistan including inadequate crew station compatibility caused by equipment bulk, aircraft mishaps as a result of limited Situational Awareness (SA), and lack of functionally integrated aircrew mission and survival equipment. Air SS delivers reduced bulk and weight of survival equipment; improved crew station compatibility; and improved pilot SA and safety. The Air SS provides enhanced terrain, threat, and obstacle avoidance information; improved heads-up display (HUD) technologies that increase the aviator's ability to safely land or takeoff in Degraded Visual Environments (DVE); and the capability to perform extended missions in extreme environmental and chemical/biological threat conditions. This project also funds the development and test of the Air SS pre-planned product improvement phase that includes the Electronic Flight Bag (EFB), a digital replacement for paper-based DoD Flight Information Publications for Army aircrews; improved laser eye protection; and tactile cueing that enhances aviator SA in a DVE. This program does not duplicate any aircraft platform program efforts.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Aircrew Integrated Systems (ACIS) Engineering Development	13.716	1.742	3.463	-	3.463
Description: Development, Integration, evaluation, testing, and qualification of Air Soldier System multi-phased capabilities as technologies mature.					
FY 2014 Accomplishments: Continued the integration, developmental test, and qualification of production-representative Air Soldier System hardware; including head tracking, Soldier and aircraft mounted flight displays, and protective clothing. Conducted a Customer (Operational) Test supporting a 4Q FY15 Milestone C/LRIP decision on mature Air Soldier System items.					
FY 2015 Plans: Complete Operational Test and Evaluation of Air Soldier System capabilities supporting a Full Rate Production Decision.					
FY 2016 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S61 / <i>Acis Engineering Development</i>				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Initial evaluation, modification, integration, and qualification of P3I candidate commercial products including an Electronic Flight Bag solution.												
Accomplishments/Planned Programs Subtotals								13.716	1.742	3.463	-	3.463
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• Aircrew Integrated Sys Adv Dev: <i>RDTE, A PE</i> <i>0603827A, PROJ S51 - Adv Dev</i>	0.159	0.161	0.152	-	0.152	0.157	0.153	0.198	0.198	Continuing	Continuing	
• Aircrew Integrated Systems: <i>Aircraft Procurement,</i> <i>Army SSN AZ3110 - ACIS</i>	45.841	48.081	44.085	-	44.085	48.441	47.380	47.374	50.136	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
Engineering and Manufacturing Development efforts for the Air Soldier System (Air SS) program include development, integration, test, and airworthiness qualification of aviator flight display symbology technologies that will increase crew member situational awareness in degraded visual environments (DVE), and aircrew protective and survival equipment that reduces bulk and weight and improves crew station compatibility and mission effectiveness. Air SS includes improvements to the current flight helmet; improvements to the survival gear carriage system; lightweight body armor; environmental protective clothing and personal survival equipment; and a day/night helmet-mounted flight symbology display with head tracking and 3D flight symbology for UH-60 and CH-47 aviators. The Air SS pre-planned product improvement (P3I) phase includes the development and qualification of the Electronic Flight Bag, a digital Army aviation replacement for paper-based DoD Flight Information Publications, and the continuing development of deferred capabilities as defined within the Capability Production Document (CDP). P3I capabilities also include tactile Situational Awareness enhancements and laser eye protection. Contracts with industry include both Cost and Firm Fixed Price using full and open competition, each evaluated and selected to appropriately share risk between industry and the government.												
E. Performance Metrics												
N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S61 / Acis Engineering Development					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Administration	Allot	Various Government : Huntsville, Alabama	2.140	0.699		0.102		0.273		-		0.273	Continuing	Continuing	Continuing
Subtotal			2.140	0.699		0.102		0.273		-		0.273	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Warrior and Air Soldier System Development	C/TBD	Various Government : Various Locations	46.714	9.639		0.158		2.705		-		2.705	Continuing	Continuing	Continuing
Subtotal			46.714	9.639		0.158		2.705		-		2.705	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	RO	Various Government : Various Locations	2.838	0.626		0.093		0.258		-		0.258	Continuing	Continuing	Continuing
Subtotal			2.838	0.626		0.093		0.258		-		0.258	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental and Operational Testing	RO	Various Activities : Various Locations	7.849	2.752		1.389		0.227		-		0.227	Continuing	Continuing	Continuing
Subtotal			7.849	2.752		1.389		0.227		-		0.227	-	-	-

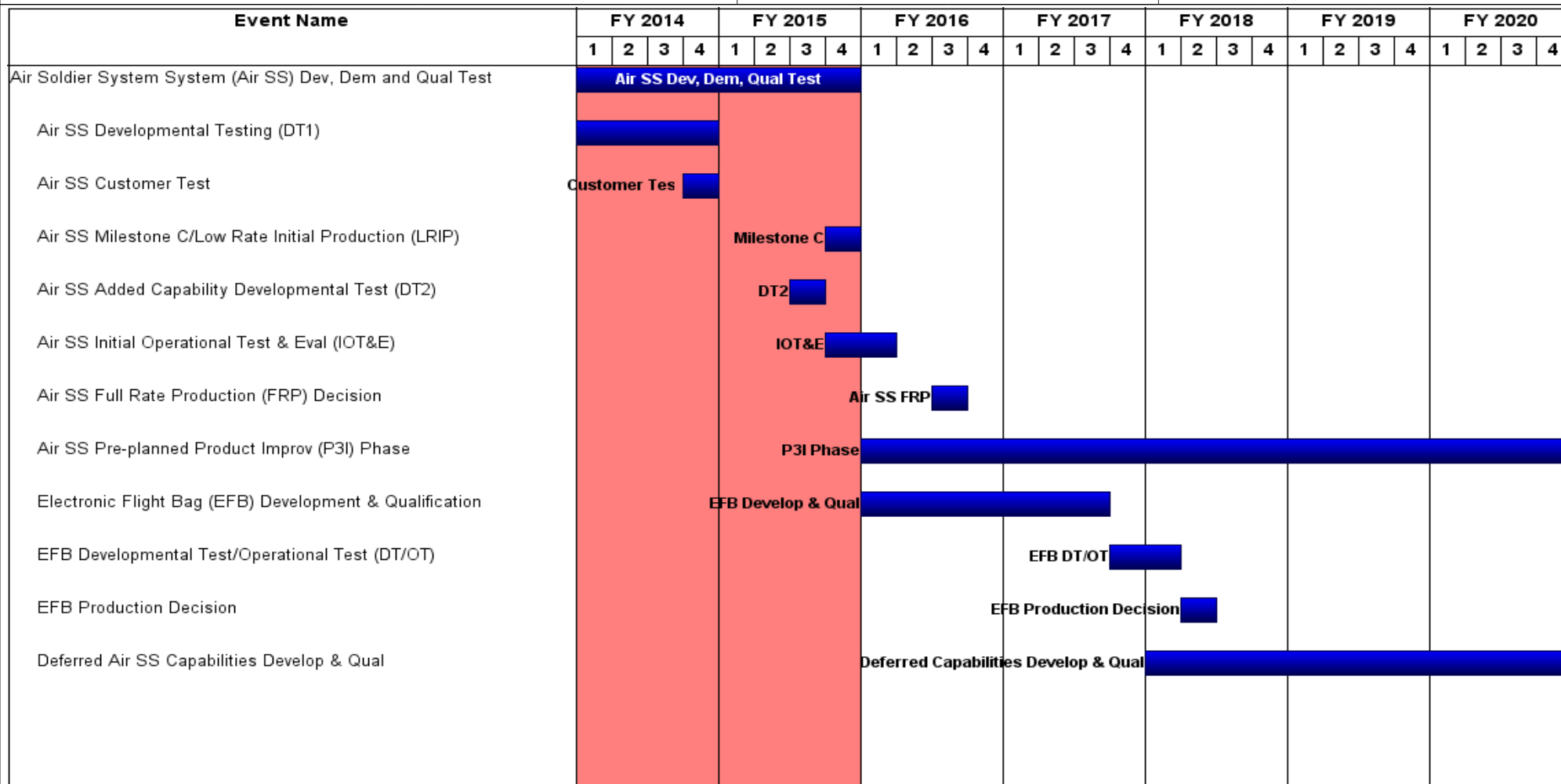
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S61 / <i>Acis Engineering Development</i>				
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	59.541	13.716		1.742		3.463		-		3.463	-	-	-
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S61 / <i>Acis Engineering Development</i>
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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S61 / <i>Acis Engineering Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air Soldier System System (Air SS) Dev, Dem and Qual Test	1	2012	4	2015
Air SS Developmental Testing (DT1)	1	2014	4	2014
Air SS Customer Test	4	2014	4	2014
Air SS Milestone C/Low Rate Initial Production (LRIP)	4	2015	4	2015
Air SS Added Capability Developmental Test (DT2)	3	2015	3	2015
Air SS Initial Operational Test & Eval (IOT&E)	4	2015	1	2016
Air SS Full Rate Production (FRP) Decision	3	2016	3	2016
Air SS Pre-planned Product Improv (P3I) Phase	1	2016	4	2020
Electronic Flight Bag (EFB) Development & Qualification	1	2016	3	2017
EFB Developmental Test/Operational Test (DT/OT)	4	2017	1	2018
EFB Production Decision	2	2018	2	2018
Deferred Air SS Capabilities Develop & Qual	1	2018	4	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S62 / Counter-Defilade Target Engagement - SDD			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S62: Counter-Defilade Target Engagement - SDD	-	12.545	7.861	21.077	-	21.077	10.109	6.105	0.987	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Maneuver Center of Excellence (MCoE), FT Benning, GA (User Community) identifies the Counter Defilade Target Engagement (CDTE) as a critical capability gap for our Soldiers in combat. The number one materiel solution to mitigate the critical capability gap (defeating defilade (hidden) targets from 35-500m) is the XM25. The XM25 provides the Infantry Soldier with a leap-ahead overmatch capability that dramatically increases lethality, range, and capability through the use of a family of programmable 25mm ammunition and allows the Soldier to engage defilade targets with a high degree of accuracy while posing minimal burden, in terms of weight and size. The XM25 fires 25mm munitions including high-explosive airburst (HEAB) and training rounds. The XM25 comes with a target acquisition/fire control subsystem that integrates thermal capability with direct-view optics, laser rangefinder, compass, fuze setter, ballistic computer, and internal display. The XM25 has a 500-meter point target range and a 700-meter area target range capable of defeating defilade targets.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Engineering and Manufacturing Development/Fabricate	9.460	5.000	13.990	-	13.990
Description: Description: Engineering Development and Fabrication					
FY 2014 Accomplishments: Fabricated and integrated design enhancements to the weapon system, subsystems, target acquisition/fire control (TA/FC) and ammunition identified through contractor and government subsystem testing and previously during the forward operational assessment safety confirmation.					
FY 2015 Plans: Establish an open system component design to incorporate technical and producible design improvements for critical electronics and optics and reduce integration complexity of components. Initiate build of hardware to support contractor and government testing. Conduct pre Milestone C system level trade studies to improve system effectiveness, as well as explore Engineering Change Proposals to potentially reduce weight, size, and power consumption.					
FY 2016 Base Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S62 / Counter-Defilade Target Engagement - SDD		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Will conduct pre Milestone C system level trade studies and test the results to improve system effectiveness. Will complete build of hardware to support government testing. Will continue to explore additional engineering changes to potentially reduce weight, size, and power consumption.						
Title: Engineering and Training Development Description: Description: Engineering and Training Development FY 2014 Accomplishments: Provided engineering support for weapon systems, subsystems, target acquisition/fire control (TA/FC), ammunition and software design enhancements required to perform technical design reviews and integration technical design efforts. Updated the acquisition program baseline. Developed new equipment training plan and training materials. FY 2015 Plans: Continue to provide engineering support for weapon systems, subsystems, target acquisition/fire control (TA/FC) and software design enhancements based on lessons learned from the Limited User Evaluations (LUE). Refine and update the training material based on lessons learned during the LUE soldier training. Provide continued engineering support for the development of the XM25 virtual training concept. FY 2016 Base Plans: Will continue to provide engineering support for weapons systems, subsystems, target acquisition/fire control (TA/FC), ammunition and software design modifications based on lessons learned from Pre-Production Qualification Testing (PPQT) #2 and Limited User Testing (LUT). Will refine and update training material based on lessons learned during user assessments, soldier training and pre log demo activities, as well as, PPQT#2 and LUT. Will provide continued engineering support for the development of the virtual training concept for the XM25.		0.530	0.625	0.860	-	0.860
Title: Development / Operational Test and Evaluation Activities Description: Description: Test and Evaluate FY 2014 Accomplishments: Conducted both government Pre-Production Qualification Testing (PPQT #1) and contractor test efforts of weapon system, target acquisition/fire control (TA/FC) and ammunition to address safety risks. Some of the PPQT activities completed were Airburst Accuracy, Dispersion, Fuze Arming, Part Interchangeability, Fuze Self Destruct, Thermal Shock, Long Term Storage, Electromagnetic Environmental Effects (E3), and Simulated		2.405	1.838	5.820	-	5.820

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons			Project (Number/Name) S62 / Counter-Defilade Target Engagement - SDD					
B. Accomplishments/Planned Programs (\$ in Millions)						FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Natural Environment Tests. Conducted contractor system level verification testing of design improvements for the weapon system and TA/FC. FY 2015 Plans: Continue to conduct government, contractor and user test activities to evaluate engineering changes to the weapons system. Government will also evaluate and test efforts related to pre-planned product improvements. Plan, coordinate, and resource PPQT#2, LUT and Pre Logistics Demonstrations. FY 2016 Base Plans: Will conduct PPQT#2 consisting of government test efforts to evaluate engineering changes, fixes and design modifications to address anomalies. Will conduct Limited User Testing (LUT) and Pre-Logistics Demonstrations. Will plan and coordinate Production Qualification Test (PQT), Live Fire Test and Evaluations (LFT&E) and Final Logistics Demonstrations.											
Title: Program Management Description: Description: Program Management FY 2014 Accomplishments: Provided program management oversight for all government and contractor engineering and test activities. Ensured compliance with contract requirements, including timely delivery of products, services and invoicing. FY 2015 Plans: Continue to provide Program Management oversight pre Milestone C required to test and evaluate engineering changes and pre-planned product improvements to the weapon system. FY 2016 Base Plans: Will provide program management, logistical and life cycle support, to organize, coordinate and control program activities leading up to Milestone C and transition to Low Rate Initial Production (LRIP).						0.150	0.398	0.407	-	0.407	
Accomplishments/Planned Programs Subtotals						12.545	7.861	21.077	-	21.077	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• G16101: (G16101) Integrated Air Burst Weapon System Family	-	-	-	-	-	9.843	14.966	25.126	32.416	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S62 / <i>Counter-Defilade Target Engagement - SDD</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• E92500: (E92500) CTG, 25MM, XM1083 High Explosive Air Burst (HEAB)	-	-	-	-	-	0.198	2.180	4.957	5.000	Continuing	Continuing
• E92510: (E92510) CTG, 25MM, XM1081 Target Practice (TP)	-	-	-	-	-	-	0.396	0.892	1.000	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The XM25 transitioned from the Technology and Development phase to Engineering and Manufacturing Development (EMD) phase by achieving Milestone B in December 2010. The EMD phase completes development of the XM25 and verifies training solutions for the Milestone C approval currently scheduled for 4QTR FY2016. The Research and Development acquisition strategy is to use sole source contracting with ATK (formerly known as Alliant Techsystems), Plymouth, MN. RDT&E initiatives will continue post Milestone C for engineering changes and pre-planned product improvements to include family of munitions and target acquisition/fire control development.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S62 / <i>Counter-Defilade Target Engagement - SDD</i>					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Performed by Government : Various Activities	2.593	0.150	Mar 2014	0.398	Jan 2015	0.407	Oct 2015	-		0.407	Continuing	Continuing	Continuing
Subtotal			2.593	0.150		0.398		0.407		-		0.407	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design, Develop and Fabricate	SS/CPFF	ATK : Plymouth, MN	95.935	9.460	Mar 2014	5.000	Mar 2015	10.240	Oct 2015	-		10.240	Continuing	Continuing	Continuing
Subtotal			95.935	9.460		5.000		10.240		-		10.240	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	Various : Multiple	7.326	0.500	Mar 2014	0.555	Mar 2015	0.637	Oct 2015	-		0.637	Continuing	Continuing	Continuing
Training Development Support	MIPR	PEO STRI : PEO STRI	0.730	0.030	Mar 2014	0.070	Feb 2014	0.223	Jan 2016	-		0.223	Continuing	Continuing	Continuing
Subtotal			8.056	0.530		0.625		0.860		-		0.860	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental/System Tests and Articles	SS/CPFF	Performed by Contractor : ATK, Plymouth, MN	14.854	1.000	Oct 2013	-		3.750	Oct 2015	-		3.750	-	19.604	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S62 / <i>Counter-Defilade Target Engagement - SDD</i>					

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental/Operational Tests	Various	Performed by Government : Various Activities	10.629	1.405	Mar 2014	1.838	Jan 2015	5.820	Oct 2015	-		5.820	Continuing	Continuing	Continuing
Subtotal			25.483	2.405		1.838		9.570		-		9.570	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	132.067	12.545	7.861	21.077	-	21.077	-	-	-

Remarks

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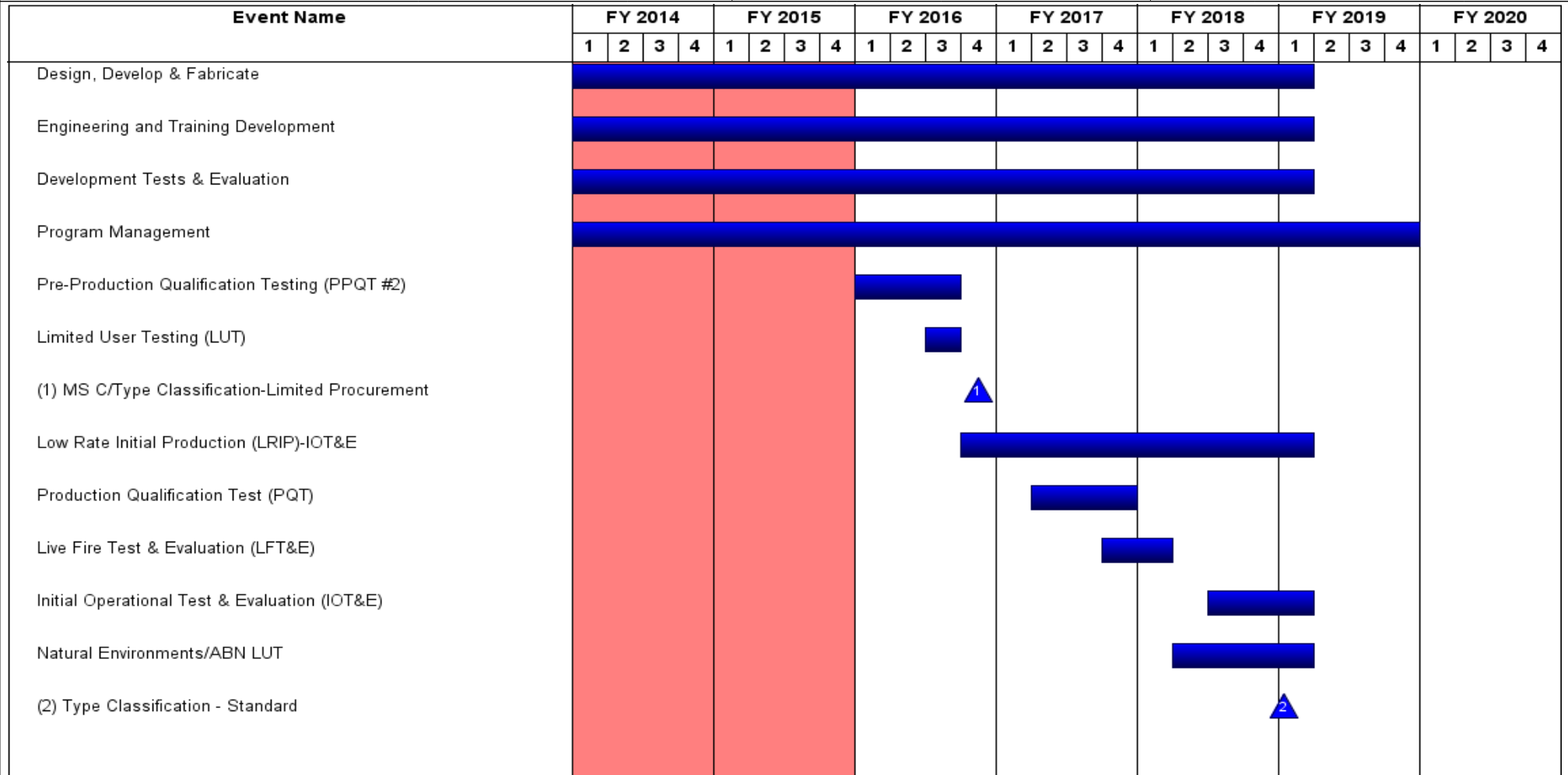
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604601A / *Infantry Support Weapons*

Project (Number/Name)
S62 / Counter-Defilade Target Engagement - SDD



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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) S62 / Counter-Defilade Target Engagement - SDD																
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Full Rate Production (FRP)																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) <i>S62 / Counter-Defilade Target Engagement - SDD</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design, Develop & Fabricate	1	2011	1	2019
Engineering and Training Development	1	2011	1	2019
Development Tests & Evaluation	1	2011	1	2019
Program Management	1	2011	4	2019
Pre-Production Qualification Testing (PPQT #2)	1	2016	3	2016
Limited User Testing (LUT)	3	2016	3	2016
MS C/Type Classification-Limited Procurement	4	2016	4	2016
Low Rate Initial Production (LRIP)-IOT&E	4	2016	1	2019
Production Qualification Test (PQT)	2	2017	4	2017
Live Fire Test & Evaluation (LFT&E)	4	2017	1	2018
Initial Operational Test & Evaluation (IOT&E)	3	2018	1	2019
Natural Environments/ABN LUT	2	2018	1	2019
Type Classification - Standard	1	2019	1	2019
Full Rate Production (FRP)	1	2019	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S63 / <i>Small Arms Improvement</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S63: <i>Small Arms Improvement</i>	-	17.387	11.095	20.303	-	20.303	22.665	19.926	19.542	19.732	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New starts in FY 2016 include the following programs transitioning from Program Element 0603827A Project S54: Advanced Laser Protection for Optics, Advanced Fire Control with Hyperspectral Target Acquisition, Advanced Fire Control with Precision Projectile/Dynamic Target Tracking, Increased Barrel Life/Replace Chrome, and Individual Non-Lethal System.

A. Mission Description and Budget Item Justification

The Small Arms Improvement Engineering and Manufacturing Development (EMD) program provides funds to transition components or prototypes from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and other domestic and foreign sources of small arms weapons to demonstrate, test and evaluate capability near or at planned operational requirements. Small arms systems include weapons ranging up to 40 millimeter in caliber. Current and future efforts focus on system improvements designed to enhance lethality, target acquisition, fire control, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include system development, integration, demonstration, test and evaluate components, prototypes and operational system prototypes of small arms weapons and/or enhancements. Benefits include continuous improvements to small arms weapons, fire control equipment, optics, gun barrels, ancillary equipment, training devices, component mounts, weapon mounts, and weapon/ammunition interface of current small arms fleet or new weapon systems.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: New Weapons	2.551	3.793	8.619	-	8.619
Description: Description: Development of new weapons					
FY 2014 Accomplishments: Modular Handgun System (MHS): Prepared documentation required for Milestone C decision (MS-C) including the Acquisition Strategy, 80% of the Test & Evaluation Master Plan (TEMP), and 50% of the Acquisition Plan. Planned, coordinated and resourced operational events, ie. the Early Warfighter Acceptance and the Joint Warfighter Concept of Operations (CONOPS) Evaluations. Conducted Industry Days 1, 2 & 3 to inform industry of the Army's handgun requirement and to determine the technical maturity, and manufacturing capabilities readily available to meet/exceed the Army's requirement. Funded the Integrated Product Team (IPT) and released a draft solicitation.					
M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Adopted the Special Operations Command (SOCOM) requirements document and prepared additional documentation for the Milestone					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S63 / Small Arms Improvement			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Decision Authority (MDA) to render an official program of record decision. Completed 65% of both the systems engineering plan (SEP), and the test and evaluation master plan (TEMP). Planned, coordinated and resourced other test and evaluation activities.						
Precision Sniper Rifle: Supported requirements document comment adjudication from 1-Star Joint Capabilities Integration and Development System (JCIDS) staffing as well as cost-benefit analysis and Courses of Action drills to support program decision making.						
Squad Designated Marksman Rifle (SDM): Supported the Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel, and Facilities (DOTMLPF) analysis for SDM and informing requirements. Conducted a recoil study comparing calibers effect on short range accuracy from different shooting positions. Orchestrated an SDM evaluation comparing three different SDM configurations in which a platoon sized element will operate through short Close Quarters Battle (CQB) scenarios as well as long range engagement.						
FY 2015 Plans: Modular Handgun System (MHS): Complete documentation required for MS-C decision and release final solicitation. Conduct bid sample testing, operational assessments and evaluations for the weapon systems and ammunition. Initiate source selection activities, obtain a safety release and conduct the Early Warfighter Acceptance and the Joint Warfighter CONOPS Evaluations. Plan, coordinate and resource Pre-Logistics Demonstration events.						
M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Obtain official program of record decision. Complete the System Engineering Plan (SEP), TEMP, performance specifications, supportability plans and other required acquisition documents. Conduct environmental and corrosion tests; perform health hazard, risk and safety assessments. Obtain weapon system safety release.						
FY 2016 Base Plans: Modular Handgun System (MHS): Will continue source selection activities to narrow the competitive range. Will award contracts for up to (3) Commercial Off The Shelf/Non Developmental Items weapon systems and ammunition. Will perform Pre-Logistics Demonstrations and begin the ammunition energetic materials qualification testing. Will conduct verification, validation and limited user test activities to facilitate down selecting to one (1) vendor. Will continue to fund the IPT and prepare Type Classification documentation.						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S63 / Small Arms Improvement		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS): Will conduct qualification, developmental and operational test and evaluation activities necessary to Type Classify the weapon system and ammunition. Will obtain Type Classification/Full Material Release.						
Precision Sniper Rifle: Will continue to perform production qualification and operational testing, finalize sustainment documentation, prepare environmental assessments, and prepare documentation for milestone reviews.						
Squad Designated Marksman Rifle (SDM): Will continue to inform requirements and the Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel, and Facilities (DOTMLPF) analysis. The winner of the Compact Semi-Automatic Sniper System (CSASS) competition will be utilized in a user jury to evaluate its feasibility in the SDM role. Will develop Acquisition Strategy and initiate execution.						
Mini-guns: Will continue to evaluate various externally powered weapons, including miniguns, for suitability and performance, and potential standardization on remote weapon stations.						
Title: Small Arms Weapons Enhancements		4.953	0.250	3.735	-	3.735
Description: Enhancements and developments of small arms weapons						
FY 2014 Accomplishments:						
Compact Semi-Automatic Sniper System (CSASS): Refined down-select and bid sample strategy and plan. Released Request for Proposal (RFP) 3QFY14 with extended response time (120 days) to submit 10 bid samples from each vendor.						
Powered Rail: Used test samples consisting of integrating Commercial Off-The-Shelf (COTS) components on powered rail platform in order to evaluate system level performance; system level integration efforts to further develop the components and ensure that the foundational architecture is sufficient for future applications; and optimizing power and data management to support integration of various data applications amongst peripherals.						
M4 Carbine Product Improvement Program (PIP): Completed comprehensive technical testing and limited user evaluation. The data was compiled and analyzed by the Source Selection Evaluation Board (SSEB). Technical evaluations were provided to ACC-NJ. Conducted new requirement analysis, technical evaluations, and cost benefit analysis to support a production decision.						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S63 / Small Arms Improvement			
B. Accomplishments/Planned Programs (\$ in Millions)						
		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Small Arms Signature Reduction (SASR) Suppressor Technology: Completed the human perception model with operational relevance for suppressor's flash and noise measurement with Marine Corps, John Hopkins University, Aberdeen Test Center and Armament Research, Development and Engineering Center's (ARDEC's) Acoustic Center of Excellence. Established Human Research and Engineering Directorate/Army Research Laboratory (HRED/ARL) Technology Program Agreement (TPA) for future suppressor detection/localization study to support small arm testing. Performed experiments on the test methodology for flash visualization with variations in background light levels and contrast conditions for flash detection model with HRED at Aberdeen Test Center. Participated in the North Atlantic Treaty Organization (NATO) Land Capability Group on Dismounted Soldier System (LCG DSS), Weapons & Sensors Working Group Team of Experts to develop a standardization test methodology for suppressor noise measurement. Supported the Maneuver Center of Excellence in development of draft Capability Development Document (CDD) for SASR.						
Gain Twist Rifling: Supported testing and data analysis of delivered prototype hardware.						
M4/M16 Baseline Reliability Study: Took receipt of 1,000 prototype magazines from Center Industries and began confirmatory test at AberdeenTest Center. Test and scoring conference completed in 3QFY14. The positive results informed an Engineering Change Proposal (ECP) to the technical data package. ECP was approved for current (open) production contracts.						
FY 2015 Plans: Compact Semi-Automatic Sniper System (CSASS): Down select CSASS competitors from competitive evaluation/testing phase to conduct system testing and user evaluation. Perform down selection of most qualified vendors and award a single competitive contract.						
FY 2016 Base Plans: Compact Semi-Automatic Sniper System (CSASS): Will conduct Production Qualification Test (PQT) and Limited User Test (LUT) on selected CSASS. Prepare for Milestone C and Type Classified Standard decisions.						
Powered Rail: Transitions from FY2015 Research and Analysis. Will continue further integration with weapon platform and soldier borne power and data management systems as well as integrating enablers to the weapon platform.						
Sniper Upgrades: Will perform feasibility, analysis of alternatives, and cost benefit analysis studies for various fire control and supporting precision enablers to include Shot Counter for Reliability and Maintainability (SCRAM), Extreme Accuracy Tasked Ordnance (EXACTO), and cross wind sensing technologies. Will develop						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S63 / Small Arms Improvement		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
requirements for Fire Control CDD - Precision Annex which includes Spotting Scope Optical Display (SSOD), Sniper Rifle Fire Control System (SRFCS), Eagle Eye (EE) and Barrel Studies.						
Small Business Innovation Research (SBIR) Enhancements: Will support Phase II Enhancement and/or initialization of Phase III SBIR activities.						
Protective Coatings: Will continue to develop manufacturing technology to support production of super-hydrophobic coatings in support of Fire Control Capability Development Document (CDD), Squad Annex. Will integrate samples produced in these activities into fire control systems and conduct limited user evaluation of optics with coating; focused on coating survivability during combat operations.						
FY2016 New Start Individual Non-Lethal System: Transition of technologies from Program Element 0603827A Project S54. Will complete review of requirements and start preparation of milestone documentation.						
FY2016 New Start Increased Barrel Life: Transition of technologies from Program Element 0603827A Project S54. Will perform barrel studies for alternate calibers (7.62mm, possibly 5.56mm) to improve/enhance barrel life. Utilize lesson-learned from initial prototype testing, further develop and acquire full length barrel liners for extended life testing and perform testing at Government facility.						
Weapon Upgrades and Accessories: Will continue to test, evaluate and analyze ongoing and new activities to enhance small arms weapons.						
Title: Ammunition		2.846	0.250	0.100	-	0.100
Description: Improvement of small arms ammunition						
FY 2014 Accomplishments:						
XM1112 Airburst Non-Lethal Munition (ANLM): Completed integration test, conducted Critical Design Review (CDR) and built Developmental Test (DT) Hardware.						
XM1116 12 Gauge Non-Lethal Extended Range: Prepared for the Type Classification package which is awaiting the approved Capability Production Document (CPD) in Joint Capabilities Integration and Development System (JCIDS) staffing. Evaluated the rounds performance with the M26 Modular Accessory Shotgun Systems (MASS).						
FY 2015 Plans:						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S63 / Small Arms Improvement		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
XM1112 Airburst Non-Lethal Munition (ANLM): Complete Type Classification Package.						
Evaluate effect of new ammunition on small arms weapons.						
FY 2016 Base Plans: Will continue to evaluate the effect of new ammunition on small arms weapons.						
Title: Combat Optics		0.753	-	1.800	-	1.800
Description: Improvement of combat optics						
FY 2014 Accomplishments: Mounted Machine Gun Optic (MMO): Evaluated current technology and Off the Shelf Items, resulting in determination that capabilities outlined in the proposed material solution are readily available. Coordinated initial draft of MMO Capability Production Document (CPD) requirements, began development of Acquisition Strategy, support CPD, and provide Analysis of Alternatives for stakeholders.						
Squad Common Optic (SCO): Transitioned from Program Element 0603827A Project 54. Renamed to Fire Control, Squad.						
FY 2016 Base Plans: Mounted Machine Gun Optic: Will finalize Machine Gun Optic Capability Production Document (CPD), including anticipated final JROC approval. Will conduct final pre-Milestone C activities in preparation for transition to Program of Record in FY2017; emphasis will be on development of Test & Evaluation Master Plan (TEMP) and Production Readiness Review (PRR).						
Fire Control, Squad: Will finalize Fire Control Capability Development Document (CDD), Squad Annex, including anticipated final Joint Requirements Oversight Council (JROC) approval. Will initiate contracting effort to support pre-Milestone B activities, including Acquisition Strategy and System Engineering Plan (SEP), in preparation for transition to Program of Record.						
FY2016 New Start Advanced Laser Protection for Optics: Will transition technologies from Program Element 0603827A Project S54. Manufacturability and fire control system integration will be assessed. Will conduct technical comparison to determine if the protection solution should be integrated within a primary day sight (as contemporary laser filters are fitted into the M22 and M24 binoculars), or if the protection solution is best utilized in a clip on mode (as contemporary laser filters are fitted to the M150 and sniper optics).						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S63 / Small Arms Improvement		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Optics Upgrades: Will continue engineering evaluations, verification and validation of weapon optics performance requirements.						
Title: Fire Control		6.284	-	5.949	-	5.949
Description: Description: Improvement of small arms fire control						
FY 2014 Accomplishments: Grenadier Sighting System (GSS): Revised GSS program documentation to reflect change in strategy from a Non Developmental Item (NDI) to Research and Development effort. Developed technical design and operational specifications suitable for industry competition. Began development of detailed acquisition program planning and coordination, including test and evaluation and logistics. Conducted Market Surveys to assess industry readiness and concerns. Released a draft Statement of Work and Purchase Description as part of Market Survey #4.						
Integrated Ballistic Reticle System (IBRS): Completed Phase II testing of submissions by three (3) vendors and performed down-selection activities; Awarded contract to one (1) vendor and tested the single sighting system provided to demonstrate system integration and component design.						
FY 2016 Base Plans: Grenadier Sighting System (GSS): Will award developmental contract for the GSS, test and evaluation efforts, and system engineering analysis and reviews. Following award of the developmental contract the government will conduct a user experiment, system requirements review, and preliminary design review. Further test plans will also be developed, and plans for fielding, new equipment training, and development of a deployment logistics package.						
FY2016 New Start Advanced Fire Control with Hyperspectral Target Acquisition: Will transition technologies from Program Element 0603827A Project S54. Manufacturability and fire control system integration will be assessed. Technical comparison will be conducted to determine if the protection solution should be integrated within a primary day sight (as contemporary laser filters are fitted into the M22 and M24 binoculars), or if the protection solution is best utilized in a clip on mode (as contemporary laser filters are fitted to the M150 and sniper optics).						
FY2016 New Start Advanced Fire Control with Precision Projectile/Dynamic Target Tracking: Will transition technologies from Program Element 0603827A Project S54. Will support integration of component advanced						

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S63 / Small Arms Improvement				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
tracking technologies. Efforts will include initial integration of technologies, including contracting, System Requirements Review, System Functional Review, and preparations for Preliminary Design Review (PDR).						
Fire Control Upgrades: Will continue to test evaluate and anlyze ongoing and new activities to enhance small arms weapons fire control.						
Title: Research and Analysis Description: Market Research and Cost Benefit Analysis FY 2015 Plans: Continue Market Research and Cost Benefit Analysis of new small arms weapon and/or enhancements for engineering and manufacturing development. FY 2016 Base Plans: Will continue Market Research and Cost Benefit Analysis of new small arms weapon and/or enhancements for engineering and manufacturing development.		-	0.100	0.100	-	0.100
Accomplishments/Planned Programs Subtotals		17.387	4.393	20.303	-	20.303
		FY 2014	FY 2015			
Congressional Add: New Weapons Congressional Add FY 2015 Plans: Squad Designated Marksman Rifle (SDM): Will inform requirements and the Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel, and Facilities (DOTMLPF) analysis. The winner of the Compact Semi-Automatic Sniper System (CSASS) competition will be utilized in a user jury to evaluate its feasibility in the SDM role. Will develop Acquisition Strategy and initiate execution. Mini-guns: Will evaluate various externally powered weapons, including miniguns, for suitability and performance, and potential standardization on remote weapon stations.		-	4.875			
Congressional Add: Small Arms Weapons Enhancements Congressional Add FY 2015 Plans: Small Business Innovation Research (SIBR) Enhancements: Support Phase II Enhancement efforts on Nano-structured Anti-reflective Coating and Down-Range Wind Sense SBIR's, including system level integration of the developed technologies, and limited user demonstration and evaluation of those technologies.		-	0.700			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S63 / <i>Small Arms Improvement</i>	

	FY 2014	FY 2015
Protective Coatings: Leverage related work conducted by Oak Ridge National Labs and discoveries from prior SBIR efforts to develop manufacturing technology to support production of super-hydrophobic coatings in support of Fire Control Capability Development Document (CDD), Squad Annex. Determine key performance tolerances of coatings to determine manufacturing requirements, and conduct limited run production of sample fire control system components.		
Weapon Upgrades and Accessories: Test, evaluate and analyze ongoing and new activities to enhance small arms weapons.		
Congressional Add: Combat Optics Congressional Add FY 2015 Plans: Mounted Machine Gun Optic (MMO): Support staffing of MMO Capability Production Document (CPD), including response to comments. Develop key documents in support of pre-Milestone C activities, with emphasis on Acquisition Strategy and draft System Engineering Plan.	-	0.600
Fire Control, Squad: Coordinate with MCoE to finalize draft of Fire Control Capability Development Document (CDD), and the associated Squad Annex, and ensure this draft enters world-wide staffing. Continue evaluation of commercially available fire control solutions to determine utility and leverage opportunities. Establish technical team to ensure that capability requirements are technically achievable, and identify appropriate technologies to meet gaps.		
Congressional Add: Fire Control Congressional Add FY 2015 Plans: Grenadier Sighting System (GSS): Create procurement package for Draft Request for Proposal (RFP) release. Conduct second GSS industry day to provide an opportunity to answer any industry questions. Release the RFP and initiate Source Selection evaluation.	-	0.527
Congressional Adds Subtotals	-	6.702

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• Small Arms Improvement: <i>RDTE S54, Program Element</i> <i>0603827A - Soldier Systems</i> <i>- Advanced Development</i>	4.117	1.579	7.449	-	7.449	9.089	6.152	7.557	7.643	Continuing	Continuing
• M4 Carbine MODS: <i>WTCV,</i> <i>GB3007, M4 Carbine MODS</i>	9.900	6.446	27.566	-	27.566	28.310	24.207	23.214	21.301	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S63 / Small Arms Improvement			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Sniper Rifle MODS: WTCV, GZ1500, Sniper Rifle MODS	7.017	4.079	2.431	-	2.431	9.979	9.186	8.862	5.947	Continuing	Continuing
• M249 SAW MODS: WTCV, GZ1290, M249 Squad Automatic Weapon (SAW) MODS	7.608	5.546	1.190	-	1.190	1.189	1.189	1.189	1.190	Continuing	Continuing
• M240 Medium Machine Gun MODS: WTCV, GZ1300, M240 Medium Machine Gun MODS	2.719	2.635	1.424	-	1.424	1.798	1.945	1.953	1.982	Continuing	Continuing
• M2 .50 CAL Heavy Machine Gun MODS: WTCV, GB4000, M2 .50 CAL Heavy Machine Gun MODS	28.242	25.296	44.004	-	44.004	57.915	51.133	28.697	22.797	Continuing	Continuing
• Modification Less Than \$5.0M: WTCV, GC0925, Modifications Less Than \$5.0M	1.569	2.089	3.737	-	3.737	3.182	3.489	3.495	3.517	Continuing	Continuing
• Handgun: WTCV, G15325, Handgun	0.300	3.957	5.417	-	5.417	14.629	15.391	15.437	16.354	Continuing	Continuing
Remarks											
In support of Small Arms Requirements, components or prototypes developed in Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) is transitioned to Small Arms Improvement, Project S63, Program Element 0604601A, (Budget Activity 5) to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon production or modification program.											
D. Acquisition Strategy											
Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E) hardware contracts, and test and evaluate systems that result in type classification and follow-on production contract awards.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S63 / Small Arms Improvement					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Weapons, : Picatinny Arsenal	7.517	0.500	Mar 2014	0.500	Mar 2015	0.908	Oct 2015	-		0.908	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Weapons, : Picatinny Arsenal	1.034	0.050	Mar 2014	0.103	Mar 2015	0.100	Oct 2015	-		0.100	Continuing	Continuing	Continuing
Subtotal			8.551	0.550		0.603		1.008		-		1.008	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fabrication	Various	Various : Multiple Contractors	0.250	1.200	Mar 2014	0.450	Mar 2015	1.000	Oct 2015	-		1.000	Continuing	Continuing	Continuing
Hardware Development	MIPR	Army Research Development Engineering Centers, : Multiple	7.204	0.750	Mar 2014	0.050	Mar 2015	-		-		-	Continuing	Continuing	Continuing
Subtotal			7.454	1.950		0.500		1.000		-		1.000	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	Army Research Development Engineering Centers, : Multiple	31.322	8.412	Mar 2014	6.820	Mar 2015	9.395	Oct 2015	-		9.395	Continuing	Continuing	Continuing
Logistics	MIPR	TACOM, : Warren	2.946	1.200	Mar 2014	0.200	Mar 2015	0.400	Oct 2015	-		0.400	Continuing	Continuing	Continuing
Human Research and Engineering	MIPR	Army Research Laboratory, : Aberdeen Proving Ground	2.422	0.499	Mar 2014	0.200	Mar 2015	0.500	Oct 2015	-		0.500	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons					Project (Number/Name) S63 / Small Arms Improvement					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			36.690	10.111		7.220		10.295		-		10.295	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Army Developmental Test Command, : Aberdeen Proving Ground	18.548	3.776	Mar 2014	1.020	Mar 2015	1.000	Oct 2015	-		1.000	Continuing	Continuing	Continuing
Operational Testing	MIPR	Army Test and Evaluation Command, : Aberdeen Proving Ground	8.446	0.800	Mar 2014	1.552	Mar 2015	3.000	Oct 2015	-		3.000	Continuing	Continuing	Continuing
Validation Testing	MIPR	Army Test and Evaluation Centers, : Multiple	4.812	0.200	Mar 2014	0.200	Mar 2015	4.000	Oct 2015	-		4.000	Continuing	Continuing	Continuing
Subtotal			31.806	4.776		2.772		8.000		-		8.000	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			84.501	17.387		11.095		20.303		-		20.303	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S63 / <i>Small Arms Improvement</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Modular Handgun																												
Precision Sniper Rifle																												
M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)																												
Squad Designated Marksman Rifle (SDM)																												
Miniguns																												
Next Generation Squad Weapon (NGSW)																												
Gain Twist Rifling																												
Small Arms Signature Reduction (SASR) Suppressor Technology																												
Compact Semi-Automatic Sniper System (CSASS)																												
Increase Barrel Life/Replace Chrome																												
Individual Non-Lethal System																												
Protective Weapons Coating																												
Powered Rail																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S63 / <i>Small Arms Improvement</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Sniper Weapon Upgrades and Accessories																												
XM1112 40MM Airburst Non-Lethal																												
XM1116 12 Gauge Non-Lethal Extended Range																												
Fire Control, Squad																												
Mounted Machine Gun Optic																												
Advanced Laser Protection for Optics																												
Optics Upgrades																												
Grenadier Sighting System for the M320 Grenade Launcher																												
Integrated Ballistic Reticle System (IBRS)																												
Advanced Fire Control with Precision Projectile/Dynamic Tracking																												
Advanced Fire Control with Hyperspectral Target Acquisition																												
Fire Control Upgrades																												
Research and Analysis of Small Arms																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S63 / <i>Small Arms Improvement</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Modular Handgun	1	2012	4	2016
Precision Sniper Rifle	1	2012	4	2016
M3 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)	1	2014	4	2016
Squad Designated Marksman Rifle (SDM)	1	2014	4	2017
Miniguns	1	2015	4	2017
Next Generation Squad Weapon (NGSW)	1	2017	4	2020
Gain Twist Rifling	1	2013	4	2014
Small Arms Signature Reduction (SASR) Suppressor Technology	1	2011	4	2014
Compact Semi-Automatic Sniper System (CSASS)	1	2014	4	2016
Increase Barrel Life/Replace Chrome	1	2016	4	2017
Individual Non-Lethal System	1	2016	4	2018
Protective Weapons Coating	1	2011	4	2018
Powered Rail	1	2013	4	2017
Sniper Weapon Upgrades and Accessories	1	2008	4	2020
XM1112 40MM Airburst Non-Lethal	1	2010	4	2015
XM1116 12 Gauge Non-Lethal Extended Range	1	2014	4	2015
Fire Control, Squad	1	2014	4	2016
Mounted Machine Gun Optic	1	2013	4	2016
Advanced Laser Protection for Optics	1	2016	4	2017
Optics Upgrades	1	2008	4	2020
Grenadier Sighting System for the M320 Grenade Launcher	1	2009	4	2016
Integrated Ballistic Reticle System (IBRS)	1	2014	4	2018
Advanced Fire Control with Precision Projectile/Dynamic Tracking	1	2016	4	2018

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S63 / Small Arms Improvement
		Start		End
Events		Quarter	Year	Quarter Year
Advanced Fire Control with Hyperspectral Target Acquisition		1	2016	4 2018
Fire Control Upgrades		1	2008	4 2020
Research and Analysis of Small Arms		1	2015	4 2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S64: Common Remotely Operated Wpn Sys (CROWS)	-	9.145	2.457	3.124	-	3.124	4.582	3.546	9.142	10.523	-	42.519
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Maneuver Support Center of Excellence (MSCoE) at FT Leonard Wood, MO (User community) has identified continued development of the Common Remotely Operated Weapon Station (CROWS) as a critical improvement for the Soldier in a combat environment. By addressing the capability gap of non-turreted, lightly armored vehicles where the gunner is exposed to enemy fire, the current CROWS system provides the ability to rapidly and accurately locate and engage the enemy while allowing platform gunners to remain under armor, thereby providing greater protection and increasing overall lethality.

While addressing obsolescence, additional modifications to address operational concerns were identified in the Operational Test Agency Milestone Assessment Report (OMAR). User community feedback in overseas contingency operations will be developed and integrated into the CROWS system. These modifications include: improved optics survivability; auto-zoom; improved auto-tracking; improved sensors for increased situational awareness; and improved rounds counter. In addition, development efforts will include system and component level reliability improvements that will extend system life and reduce overall CROWS logistics footprint.

Starting in FY2019, work will begin on CROWS Capability Development Document (CDD) Increment II requirements. CDD Increment 2 capability improvements will bolster overall situational awareness and precision targeting for the Warfighters by making the system capable of sharing targeting information from dismounted Soldiers, unmanned aerial vehicles, CROWS-equipped platforms and other battle space targeting nodes such as the Joint Effects Targeting System and Target Location Designation System. System development will improve upon current fielded systems by giving Army and Joint Services an adaptive system for a variety of legacy and future platforms, watercraft, and semi-autonomous and autonomous platforms. CDD Increment II will support a wide range of firepower, using current and future inventory of crew-served weapons, anti-armor and precision scalable lethal and non-lethal options, to include integration of Escalation of Force (EOF) capabilities.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Technology Refresh and Obsolescence	9.145	0.792	1.702	-	1.702
Description: Description: Technology Refresh and Obsolescence					
FY 2014 Accomplishments: As a prerequisite to developing improvements involving enhanced sensors, infrared sights, video capabilities and situational awareness, the contractor initiated design and fabrication of an improved fire control unit (FCU)					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
processor, to include ethernet channels in the system's slip ring, in order to facilitate the greater data through-put required. FY 2015 Plans: Contractor to complete design and fabrication of an improved fire control unit (FCU) processor, to include ethernet channels in the system's slip ring, in order to facilitate the greater data through-put required. FY 2016 Base Plans: Contractor will design and fabricate an improved Thermal Imaging Module (TIM) with a smaller pixel pitch and higher pixel density focal plane array, and enhanced video processing capability allowing the module to provide a wider field of view for increased situational awareness.						
Title: Engineering Support Description: Description: Government Engineering Support. FY 2015 Plans: Provide engineering support and oversight of design improvements and contractor performance; development of enhanced sensors, infrared sights, video capabilities and situational awareness. FY 2016 Base Plans: Will continue to provide engineering support and oversight of design improvements and contractor performance; development of enhanced sensors, infrared sights, video capabilities and situational awareness. Begin development of training and technical publications associated with the system improvements.		-	0.805	0.638	-	0.638
Title: Development Test and Evaluation Description: Description: Test and Evaluation FY 2015 Plans: Develop testing and evaluation criteria and documentation and conduct initial developmental testing and evaluation of improvements. FY 2016 Base Plans: Will continue initial developmental testing and evaluation of improvements and develop testing and evaluation criteria and documentation for the Thermal Imaging Module.		-	0.110	0.195	-	0.195
Title: Program Management		-	0.750	0.589	-	0.589

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>			Project (Number/Name) S64 / <i>Common Remotely Operated Wpn Sys (CROWS)</i>				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>Description: Description: Program Management.</p> <p>FY 2015 Plans: The program management office and the proponents in the User community at the Maneuver Support Center of Excellence provide oversight of product design and development, to include engineering support, contract actions and test activities throughout the fiscal year. Program management office facilitates test events at various government laboratories to test prototype units of the improved fire control unit processor and system slip ring, in order to quantify performance with the most current sensors and effectors, and manages the life cycle of the program to include future acquisition and sustainment plans.</p> <p>FY 2016 Base Plans: Will continue to provide oversight of product design and development, to include engineering support, contract actions and test activities throughout the fiscal year. Program management office will facilitate test events at various government laboratories to test prototype units of the improved fire control unit processor and system slip ring, in order to quantify performance with the most current sensors and effectors, and manages the life cycle of the program to include future acquisition and sustainment plans.</p>											
Accomplishments/Planned Programs Subtotals							9.145	2.457	3.124	-	3.124
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• CROWS (G04700, W&TCV): W&TCV, G04700, CROWS	47.012	13.409	8.367	19.000	27.367	8.368	8.360	8.312	-	-	112.828
Remarks											
D. Acquisition Strategy											
The Common Remotely Operated Weapon Station (CROWS) uses a single-step acquisition approach in its strategy. The CROWS achieved Type Classification Standard in 3QFY11, Full Materiel Release in 3QFY12 and Full Rate Production in 4QFY12, in accordance with the Capability Production Document (CPD) Increment One (1), as clarified in June 2009.											
The program objective is to continue developing, improving and fielding the CROWS on Up-Armored High Mobility Multipurpose Wheeled Vehicles (UA-HMMWV), M1A2 Abrams Main Battle Tank and other combat vehicles to the Army Acquisition Objective (AAO) in accordance with the Basis of Issue Plan (BOIP). The program will also											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S64 / <i>Common Remotely Operated Wpn Sys (CROWS)</i>
support new and emerging urgent requirements like the integration of the Mine Resistant Ambush Protected (MRAP) family of vehicles, ground combat systems, Joint Lightweight Tactical Vehicles (JLTV) and fixed site mounting systems.		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM Soldier Weapons : Picatinny Arsenal, NJ	0.053	-		0.750	Mar 2015	0.589	Oct 2015	-		0.589	Continuing	Continuing	-
Subtotal			0.053	-		0.750		0.589		-		0.589	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Refresh and Obsolescence	SS/FFP	Kongsberg Protech Systems USA : Johnstown, PA	0.000	9.145	Aug 2014	0.792	Mar 2015	1.702	Mar 2016	-		1.702	Continuing	Continuing	-
Subtotal			0.000	9.145		0.792		1.702		-		1.702	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	ARDEC : Picatinny Arsenal, NJ	0.103	-		0.805	Mar 2015	0.638	Oct 2015	-		0.638	Continuing	Continuing	-
Subtotal			0.103	-		0.805		0.638		-		0.638	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Planning and Execution	Various	Various : Multiple	0.017	-		0.110	Mar 2015	0.195	Oct 2015	-		0.195	Continuing	Continuing	-
Subtotal			0.017	-		0.110		0.195		-		0.195	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army											Date: February 2015				
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)						
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.173	9.145		2.457		3.124		-		3.124	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) S64 / Common Remotely Operated Wpn Sys (CROWS)										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Contractor Design and Fabrication																												
Engineering Support (Government)																												
Development Test & Evaluation																												
Program Management																												
Increment 2 Product Improvement																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S64 / <i>Common Remotely Operated Wpn Sys (CROWS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contractor Design and Fabrication	4	2014	2	2018
Engineering Support (Government)	3	2015	4	2020
Development Test & Evaluation	3	2015	4	2020
Program Management	3	2015	4	2020
Increment 2 Product Improvement	2	2019	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S70: Personnel Recovery Support System (PRSS)	-	1.094	0.543	1.252	-	1.252	1.328	1.328	1.328	1.346	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Not applicable for this item.												
A. Mission Description and Budget Item Justification This project provides the continued maturation of PRSS products that enable operations to report and locate isolated, missing, detained or captured Soldiers. The PRSS program consists of the enhancement of existing products to ensure continued successful interoperability within the relevant theater of operations and the Continental United States (CONUS), and the demonstration of a production representative encrypted Personnel Recovery Device (PRD) that operates over a secure architecture.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Development of Personnel Recovery Support System (PRSS)								1.094	0.543	1.252	-	1.252
Description: Integration, evaluation, testing, and qualification of PRSS products to ensure continued successful interoperability within the relevant theater of operation, and development of a PRD that operates over a secure architecture.												
FY 2014 Accomplishments: Continued PRSS 1b system level test and evaluation, and begin integration of receivers onto the communications infrastructure of mission partners at various locations.												
FY 2015 Plans: Complete integration and test of receivers onto the communications infrastructure.												
FY 2016 Base Plans: Conduct evaluation and test of PRD production representative articles in support of competitive production contract downselect.												
Accomplishments/Planned Programs Subtotals								1.094	0.543	1.252	-	1.252

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• Personnel Recovery Support Sys OPA: Other Procurement, Army, G01101-Personnel Recovery Support System (PRSS)	14.195	10.728	7.797	-	7.797	15.747	13.752	6.674	7.592	Continuing	Continuing	
• Aircrew Integrated Systems APA: Aircraft Procurement, Army AZ3110-ACIS includes funding of Personnel Recovery Support Equipment aircraft mods	45.841	-	-	-	-	-	-	-	-	-	45.841	
Remarks												
Aircraft Procurement, Army SSN of AZ3110 - ACIS primarily includes the funding of traditional Aircrew Integrated Systems efforts including Air Warrior and Air Soldier System requirements; as well as support Personnel Recovery Support System (PRSS) platform interoperability production program through FY2014.												
D. Acquisition Strategy												
Execute PRSS program development effort for performance optimization through contracts with industry and Military Interdepartmental Purchase Requests to other Governmental agencies. Perform continuing development and test of new waveforms on an annual basis to mitigate potential security compromises to the PRSS system.												
E. Performance Metrics												
N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Adminstration	Allot	Various Government : Huntsville, Alabama	0.717	0.050		0.052		0.105		-		0.105	Continuing	Continuing	Continuing
Subtotal			0.717	0.050		0.052		0.105		-		0.105	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Personnel Recovery Support System Development Systems Engineering	MIPR	Various Organizations : Various Locations	6.607	0.272		0.120		0.318		-		0.318	Continuing	Continuing	Continuing
Subtotal			6.607	0.272		0.120		0.318		-		0.318	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various Organizations : Various Locations	1.263	0.337		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			1.263	0.337		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing / Operational Testing	MIPR	Various Organizations : Various Locations	0.951	0.435		0.371		0.829		-		0.829	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S70 / <i>Personnel Recovery Support System (PRSS)</i>				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.951	0.435		0.371		0.829		-		0.829	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.538	1.094	0.543	1.252	-	1.252	-	-	-

Remarks

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)	Program Element Description	Program Element Type	Program Element Status	Program Element Location	Program Element Contact	Program Element Date	Program Element Notes

PE 0604601A / Infantry Support Weapons

Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-31	Completed	J. Doe	120,000	118,500	100	Low	Exceeded budget by 1.25%
102/Beta	2023-02-01	2023-05-15	In Progress	A. Smith	250,000	180,000	72	Medium	Minor delays in procurement
103/Gamma	2023-03-10	2023-06-30	On Hold	M. Chen	80,000	0	0	High	Waiting for client approval
104/Delta	2023-04-01	2023-07-31	Planned	S. Kim	150,000	0	0	Medium	Initial planning phase
105/Epsilon	2023-05-01	2023-08-31	Not Started	L. Garcia	90,000	0	0	Low	Resource allocation pending
106/Zeta	2023-06-01	2023-09-30	Not Started	K. Lee	110,000	0	0	Medium	Scope definition in progress
107/Eta	2023-07-01	2023-10-31	Not Started	H. Patel	130,000	0	0	Low	Vendor selection underway
108/Theta	2023-08-01	2023-11-30	Not Started	B. Wong	160,000	0	0	Medium	Feasibility study ongoing
109/Iota	2023-09-01	2023-12-31	Not Started	F. Adams	140,000	0	0	Low	Initial requirements gathering
110/Kappa	2023-10-01	2024-01-31	Not Started	C. Brown	170,000	0	0	Medium	Market research completed

S70 / Personnel Recovery Support System (PRSS)

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Personnel Recovery Support System (PRSS) Development Oversight	PRSS Oversight																															
PRSS Development and Test	PRSS Development and Test																															
PRSS Prototype Hardware Build and Integration	PRSS Proto HW Bld & Integ																															
PRSS Operational Test													OT																			
PRSS Upgrades & Adaptations to New Platforms					PRSS Upgrades & Adaptations																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S70 / <i>Personnel Recovery Support System (PRSS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Personnel Recovery Support System (PRSS) Development Oversight	1	2010	4	2020
PRSS Development and Test	1	2010	4	2020
PRSS Prototype Hardware Build and Integration	3	2010	1	2016
PRSS Operational Test	1	2017	1	2017
PRSS Upgrades & Adaptations to New Platforms	1	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) VS5 / Soldier Protective Equipment			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
VS5: Soldier Protective Equipment	-	19.367	4.830	15.175	-	15.175	13.837	10.842	10.282	4.969	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This funding supports the Engineering and Manufacturing Development (EMD) tasks related to Individual Soldier Ballistic Protection. It funds system integration and formal Developmental Testing/Operational Testing (DT/OT) of production representative systems leveraging advancements in technology to continue incremental improvements (sizing, functionality, heat management and reduction of weight/bulk) of body armor, and the transition of new technologies into production as they mature. It funds efforts to assess head protection component technologies to mitigate the effects of ballistic/blast and non-ballistic impact (crash) threats. It also funds effort to increase eyewear ballistic/blast protection, and transition products to production.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Soldier Protective Equipment								19.367	4.830	15.175	-	15.175
Description: Funding line established in FY12. Effort was previously executed in Program Element 0604601 S60. Effort is to increase the Warfighter lethality and mobility, by optimizing Soldier protection while effectively managing all life cycle aspect of Personal Protective Equipment (PPE).												
FY 2014 Accomplishments: Completed characterization testing and initiated Soldier Human Factors Evaluations (HFE) of Authorized Protective Eyewear List (APEL) requalification candidates in 2QFY14. Completed APEL and Qualified Products list (QPL) requalification program (including Universal Prescription Lens Carrier) in 4QFY14. Initiated and completed Developmental Test 1 (DT 1) of Soldier Protection System (SPS) Transition Combat Eyewear Protection (TCEP) HFE testing of Phase I prototypes in 1QFY14. Initiated and completed TCEP DT 1 ballistic testing in 2QFY14 and exercised second options for DT2 hardware in 3QFY14. Awarded SPS Integrated Head Protection System (IHPS) development contracts in 1QFY14 and options for DT2 hardware 4QFY14. Awarded the Torso Protection (TP) Subsystem development contracts in 2QFY14 and awarded options for DT2 hardware in 3QFY14. Continued SPS System Capability & Manufacturing Process Demonstration (SC&MPD) activities. FY14 efforts focused on the completion of Vital Torso Protection (VTP) Characterization Testing in 3QFY14, and awarding Phase II contract options to support continued refinement and integration (build-test-fix-build) of the SPS subsystems in 3QFY14. Conducted Critical Design Reviews to enable the contractor to build test hardware for SPS DT/OT Human Factors and System-Level test through 2QFY15. Supported development of												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) VS5 / Soldier Protective Equipment			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
the SPS Capability Production Document and began preparation for a Milestone C Decision (Type Classification - Low Rate Initial Production (OMA, 121017, Central Funding and Fielding) by 3QFY15.						
FY 2015 Plans: Initiate development of SPS subsystems and components transitioned from Advanced Component Development and Prototypes (ACD&P) and also Integrated System Design (ISD). Complete Developmental Test 2 (DT2) of SPS Subsystems (VTP, TP, IHPS, TCEP). Continue engineering and manufacturing development tasks across the PPE portfolio (extremities, torso and vital torso, head and face protection) from emerging ballistic/blast threats. Continue efforts to reduce SPS weight and bulk at the system, subsystem and component level. Continue efforts to characterize and increase durability and functional service life. Continue development of ballistic inserts for female and small statured Soldiers through 1QFY16 as the components and subsystems mature. Conduct system level Human Factors Evaluation (HFE), system level Blast, and Pyroman/head testing in order to inform the Milestone C decision process and achieve a Milestone C Decision (Type Classification - Low Rate Initial Production (OMA, 121017, Central Funding and Fielding) by 3QFY15. Conduct Limited User Test/sizing study for Next Generation Advanced Bomb Suit (NGABS). Conduct limited User sizing study (Fit 2A).						
FY 2016 Base Plans: Continue system level development and integration of SPS subsystems and components transitioned from Advanced Component Development and Prototypes/Integrated System Design (ACD&P/ISD). Award DT/OT contract options of SPS Integrated Soldier Sensor System (ISSS) prototypes in 1QFY16. Conduct and complete DT/OT of SPS ISSS Subsystem by the end of 4QFY16 and prepare for a Milestone C Decision (Type Classification - Low Rate Initial Production (OMA, 121017, Central Funding and Fielding)) by 1QFY17. Continue to evaluate system and subsystem technologies across the PPE portfolio (extremities, torso and vital torso, head and face protection) from emerging ballistic/blast threats. Continue efforts to reduce SPS weight and bulk at the system, subsystem and component level. Continue efforts to characterize and increase durability and functional service life. Continue SPS system level blast, ballistic and characterization testing. Conduct system and subsystem level operational test for NGABS.						
Accomplishments/Planned Programs Subtotals		19.367	4.830	15.175	-	15.175

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) VS5 / <i>Soldier Protective Equipment</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• VS4 6.4 RDTE: <i>RDTE, 0603827A.VS4, Soldier Protective Equipment</i>	3.564	2.689	5.408	-	5.408	5.228	4.398	4.408	4.963	-	30.658
• OMA: <i>OMA, 121017, Central Funding & Fielding</i>	88.771	126.972	121.609	-	121.609	134.879	134.876	133.442	150.872	-	891.421

Remarks

D. Acquisition Strategy

Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) VS5 / Soldier Protective Equipment					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SETA Support	Various	PM SPE : various	0.500	0.400		-		0.450		-		0.450	Continuing	Continuing	-
Subtotal			0.500	0.400		-		0.450		-		0.450	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev/Integ Contracts	Various	Various : Various	8.794	14.533		2.410		4.987		-		4.987	Continuing	Continuing	-
Prod Sys Engineering Spt	MIPR	various : various	1.497	1.095		0.530		5.350		-		5.350	Continuing	Continuing	-
Subtotal			10.291	15.628		2.940		10.337		-		10.337	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Misc Support Costs	MIPR	Various : Various	1.200	0.600		-		1.003		-		1.003	-	2.803	-
Subtotal			1.200	0.600		-		1.003		-		1.003	-	2.803	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT/Ballistic & OT Test Costs	MIPR	Various DTC & OTC : Various DTC & OTC	2.514	2.739		1.890		3.385		-		3.385	Continuing	Continuing	-
Subtotal			2.514	2.739		1.890		3.385		-		3.385	-	-	-
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			14.505	19.367		4.830		15.175		-		15.175	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army							Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) VS5 / Soldier Protective Equipment				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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

Date: February 2015

Appropriation/Budget Activity

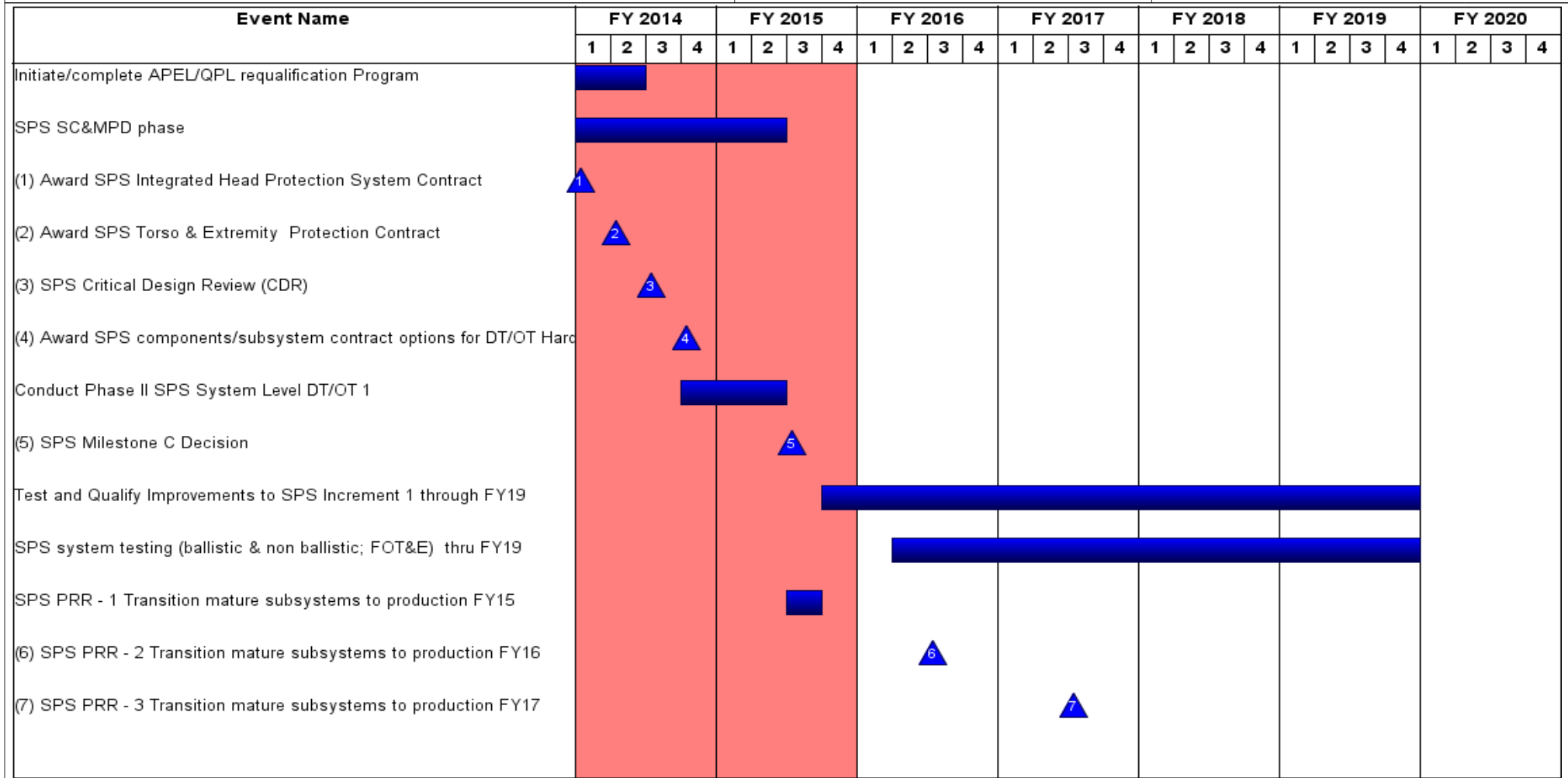
2040 / 5

R-1 Program Element (Number/Name)

PE 0604601A / *Infantry Support Weapons*

Project (Number/Name)

VS5 / *Soldier Protective Equipment*



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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																	Date: February 2015															
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons										Project (Number/Name) VS5 / Soldier Protective Equipment												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) SPS PRR - 4 Transition mature subsystems to production FY18																					▲1											
(2) SPS PRR - 5 Transition mature subsystems to production FY19																									▲2							
(3) SPS Increment 2 MS B																									▲3							
(4) Award SPS ISSS DT/OT Contract options													▲4																			
Conduct ISSS DT/OT 2													■																			
(5) ISSS MS C																	▲5															

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) VS5 / <i>Soldier Protective Equipment</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initiate/complete APEL/QPL requalification Program	3	2013	2	2014
SPS SC&MPD phase	3	2013	2	2015
Award SPS Integrated Head Protection System Contract	1	2014	1	2014
Award SPS Torso & Extremity Protection Contract	2	2014	2	2014
SPS Critical Design Review (CDR)	3	2014	3	2014
Award SPS components/subsystem contract options for DT/OT Hardware	4	2014	4	2014
Conduct Phase II SPS System Level DT/OT 1	4	2014	2	2015
SPS Milestone C Decision	3	2015	3	2015
Test and Qualify Improvements to SPS Increment 1 through FY19	4	2015	4	2019
SPS system testing (ballistic & non ballistic; FOT&E) thru FY19	2	2016	4	2019
SPS PRR - 1 Transition mature subsystems to production FY15	3	2015	3	2015
SPS PRR - 2 Transition mature subsystems to production FY16	3	2016	3	2016
SPS PRR - 3 Transition mature subsystems to production FY17	3	2017	3	2017
SPS PRR - 4 Transition mature subsystems to production FY18	3	2018	3	2018
SPS PRR - 5 Transition mature subsystems to production FY19	3	2019	3	2019
SPS Increment 2 MS B	3	2019	3	2019
Award SPS ISSS DT/OT Contract options	1	2016	1	2016
Conduct ISSS DT/OT 2	2	2016	4	2016
ISSS MS C	1	2017	1	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	2.068	0.210	-	-	-	0.170	0.112	-	-	Continuing	Continuing
H07: Family Of Med Tac Veh	-	2.068	0.210	-	-	-	0.170	0.112	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element (PE) supports continued modernization of the Army's medium truck and trailer fleet and the Armored Security Vehicle (ASV).

In the medium fleet, the Family of Medium Tactical Vehicles (FMTV) replaces aging M35 2 1/2-ton trucks, and M809 and M900 Series 5-ton trucks that are beyond their economic useful life of 15-20 years. FMTV fills 2 1/2-ton Light Medium Tactical Vehicle (LMTV) and 5-ton truck Medium Tactical Vehicle (MTV) requirements, and includes companion trailers, performing over 55 percent of the Army's local and line haul, and unit resupply missions, and operates throughout the theater as multi-purpose transportation vehicles in combat, combat support, and combat service support units.

The ASV is an all-wheel drive armored vehicle that provides ballistic protection, overhead protection, and protection against landmines. It is used by the Military Police to perform missions of area security, maneuver, and mobility support.

This PE funds government technical insertion initiatives that will feed into implementation of the Tactical Wheeled Vehicle (TWV) Modernization Strategy and the TWV Armoring Strategy as a bridge to future tactical vehicle efforts. This PE allows the Project Manager (PM) to leverage technology and address capability gaps in performance and reliability as identified by the user community and reported in the field.

The FY16 funding request was reduced for \$0.141 million to account for the availability of prior year execution balances.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	2.139	0.210	0.282	-	0.282
Current President's Budget	2.068	0.210	-	-	-
Total Adjustments	-0.071	-	-0.282	-	-0.282
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-0.071	-	-0.282	-	-0.282

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles				Project (Number/Name) H07 / Family Of Med Tac Veh			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
H07: Family Of Med Tac Veh	-	2.068	0.210	-	-	-	0.170	0.112	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not Applicable.

A. Mission Description and Budget Item Justification

This Program Element (PE) supports continued modernization of the Army's medium truck and trailer fleet and the Armored Security Vehicle (ASV).

In the medium fleet, the Family of Medium Tactical Vehicles (FMTV) replaces aging M35 2 1/2-ton trucks, and M809 and M900 Series 5-ton trucks that are beyond their economic useful life of 15-20 years. FMTV fills 2 1/2-ton Light Medium Tactical Vehicle (LMTV) and 5-ton truck Medium Tactical Vehicle (MTV) requirements, and includes companion trailers, performing over 55 percent of the Army's local and line haul, and unit resupply missions, and operates throughout the theater as multi-purpose transportation vehicles in combat, combat support, and combat service support units.

The ASV is an all-wheel drive armored vehicle that provides ballistic protection, overhead protection, and protection against landmines. It is used by the Military Police to perform missions of area security, maneuver, and mobility support.

This PE funds government technical insertion initiatives that will feed into implementation of the Tactical Wheeled Vehicle (TWV) Modernization Strategy and the TWV Armoring Strategy as a bridge to future tactical vehicle efforts. This PE allows the PM to leverage technology and address capability gaps in performance and reliability as identified by the user community and reported in the field. FY17-18 RDT&E funding will be used to continue Technological Evaluation, Testing and Insertion of the FMTV.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Automotive Technological Evaluation, Testing & Insertion	0.749	0.082	-	-	-
Description: Funding is provided for the following effort					
FY 2014 Accomplishments: Continuation with FMTV Automotive Technological Evaluation, Testing & Insertion					
FY 2015 Plans: Continuation with FMTV Automotive Technological Evaluation, Testing, & Insertion					
Title: Armor Spiral Development	0.613	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604604A / <i>Medium Tactical Vehicles</i>				Project (Number/Name) H07 / <i>Family Of Med Tac Veh</i>			
B. Accomplishments/Planned Programs (\$ in Millions)											
				FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total			
Description: Funding is provided for the following effort											
FY 2014 Accomplishments: Improvements to occupant survivability											
Title: Fuel Economy				0.706	-	-	-	-			
Description: Funding is provided for the following effort											
FY 2014 Accomplishments: Continued Fuel Economy Improvements											
Title: FMTV Force Protection Improvements				-	0.128	-	-	-			
Description: Funding provided for the following effort:											
FY 2015 Plans: Improvements to occupant survivability.											
Accomplishments/Planned Programs Subtotals				2.068	0.210	-	-	-			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPA 1 D15500: <i>Family of Medium Tactical Vehicles D15500</i>	305.650	195.624	90.040	243.998	334.038	192.812	210.923	247.798	247.798	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
FMTV - Technological Evaluation, Testing and Insertion efforts will be accomplished by a Cost Plus Fixed Fee (Level of Effort) basis.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles				Project (Number/Name) H07 / Family Of Med Tac Veh					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTV Automotive Technological Evaluation and Insertion	C/CPFF	Oshkosh Truck Corporation : Oshkosh, WI	10.470	0.749	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing
FMTV Armor Spiral Development	C/CPFF	Oshkosh Truck Corporation : Oshkosh, WI	4.851	0.613	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing
FMTV Fuel Economy	C/CPFF	Oshkosh Truck Corporation : Oshkosh, WI	1.916	0.706	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing
FMTV Automotive Technological Evaluation and Insertion	C/CPFF	TBD : TBD	0.082	-		0.082		-		-		-	Continuing	Continuing	Continuing
FMTV Force Protection Improvements	C/CPFF	TBD : TBD	0.128	-		0.128		-		-		-	Continuing	Continuing	Continuing
ASV Mission Enhancement Package (MEP)	MIPR	Various Locations : Various Locations	1.844	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			19.291	2.068		0.210		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTV Automotive Technological Evaluation and Insertion	Various	Various : Various	0.351	-		-		-		-		-	Continuing	Continuing	Continuing
FMTV Armor Spiral Development Testing	MIPR	TARDEC : Warren, MI	0.319	-		-		-		-		-	Continuing	Continuing	Continuing
FMTV Fuel Economy Testing	MIPR	TARDEC : Warren, MI	0.319	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.989	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015				
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles					Project (Number/Name) H07 / Family Of Med Tac Veh				
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	20.280	2.068		0.210		-		-		-	-	-	-	
Remarks														

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PE 0604604A: *Medium Tactical Vehicles*
Army

R-1 Line #84

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604604A / <i>Medium Tactical Vehicles</i>	Project (Number/Name) H07 / <i>Family Of Med Tac Veh</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FMTV Technology Insertion	1	2008	4	2015
FMTV Armor Technology Insertion	1	2010	4	2015
FMTV Fuel Economy	1	2010	4	2015
FMTV Force Protection Improvements	2	2015	4	2015
FMTV Competitive Rebuy & Follow-on Production	2	2010	4	2016
FMTV FY16-20 Competition	2	2016	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604611A / JAVELIN
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	4.471	4.164	3.945	-	3.945	20.282	21.095	17.772	-	-	71.729
499: <i>Javelin (AAWS-M)</i>	-	4.471	4.164	3.945	-	3.945	20.282	21.095	17.772	-	-	71.729

A. Mission Description and Budget Item Justification

FY16 funding will continue developmental engineering of the Javelin Lightweight Command Launch Unit (CLU). Goal of the Javelin Lightweight CLU is a 50% reduction in size and weight, while meeting detect, recognize, and identify requirements. Javelin Lightweight CLU is a result of user feedback on weight and bulk, and addresses the Close Combat Missile System - Medium Capability Production Document objective system weight requirement.

B. Program Change Summary (\$ in Millions)	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	5.000	4.166	4.909	-	4.909
Current President's Budget	4.471	4.164	3.945	-	3.945
Total Adjustments	-0.529	-0.002	-0.964	-	-0.964
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-0.529	-0.002	-0.964	-	-0.964

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
499: Javelin (AAWS-M)	-	4.471	4.164	3.945	-	3.945	20.282	21.095	17.772	-	-	71.729
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

FY 16 funding will continue developmental engineering of the Javelin Lightweight Command Launch Unit (CLU). Goal of the Javelin Lightweight CLU is a 50% reduction in size and weight, while meeting detect, recognize, and identify requirements. Javelin Lightweight CLU is a result of user feedback on weight and bulk, and addresses the Close Combat Missiles System - Medium Capability Production Document objective system weight requirement.

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

	FY 2014	FY 2015	FY 2016
Title: Javelin System Improvements	4.471	4.164	3.945
Description: Improve the current Javelin missile with multi-purpose warhead (MPWH) (FY13-14). Develop Lightweight Command Launch Unit (FY15-19).			
FY 2014 Accomplishments: Javelin MPWH system qualification (flight), live fire testing for integration into Javelin Block I missile. CLU Far Target Locator demonstrations and user evaluations.			
FY 2015 Plans: Lightweight CLU system architecture design, research and design advanced lightweight composite materials for CLU housing, research and design small form factored / lightweight acquisition sensor and associated optics, and initiation of prototype software / firmware design.			
FY 2016 Plans: Lightweight CLU: completion of prototype hardware, firmware and software design. Critical prototype fabrication and system integration activities.			
Accomplishments/Planned Programs Subtotals			3.945

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

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• SSN CC0007: Javelin (AAWS-M) Procurement	110.510	72.877	77.163	-	77.163	74.218	72.919	69.044	128.278	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
Remarks											
FY 16-19 procurement funds are to procure missiles only. No CLUs will be procured with these funds. Missles, Lightweight CLUs, and associated training devices will be procured with FY 20 procurement funds.											
D. Acquisition Strategy											
Javelin Lightweight CLU development will be conducted by the Javelin Joint Venture (Raytheon, Tucson, AZ, and Lockheed Martin, Orlando, FL). Engineering services contract with the Javelin Joint Venture will be utilized for Lightweight CLU development efforts. The major subassemblies, which are also the primary cost drivers, will be competed. The Javelin Joint Venture has invested Industry Research and Development in the Lightweight CLU. Development, prototype, and testing will occur FY 15-19 with production beginning FY20. Current plan is to field to priority Infantry Brigade Combat Teams and Special Forces and cascade Block 0 CLUs out of the inventory.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering/ Program Management, Govt	Allot	Close Combat Weapon Systems Project Office : Redstone Arsenal, AL	0.000	0.402		0.377		0.420		-		0.420	5.290	6.489	-
Subtotal			0.000	0.402		0.377		0.420		-		0.420	5.290	6.489	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Multi-purpose Warhead Development	SS/CPFF	JJV/Raytheon/ Lockheed Martin : Orlando, FL/Tucson, AZ	0.000	1.138	Jan 2014	-		-		-		-	-	1.138	-
Lightweight CLU Development	SS/CPFF	JJV/Raytheon/ Lockheed Martin : Orlando, FL/ Tucson,AZ	0.000	-		2.437	Jan 2015	2.750	Jan 2016	-		2.750	44.467	49.654	-
Lightweight CLU Development	MIPR	AMRDEC : Redstone Arsenal, AL	0.000	-		1.350		0.775		-		0.775	-	2.125	-
Trade Studies and Demonstration	MIPR	Redstone Test Center : Redstone Arsenal, AL	0.000	-		-		-		-		-	0.578	0.578	-
Trade Studies and Demonstrations	MIPR	AMRDEC : Redstone Arsenal, AL	0.000	0.291		-		-		-		-	-	0.291	-
Subtotal			0.000	1.429		3.787		3.525		-		3.525	45.045	53.786	-
Remarks JV - Joint Venture SS CPFF - Sole Source Cost Plus Fixed Fee CLU - Command Launch Unit AMRDEC - Aviation & Missile Research, Development and Engineering Center MIPR - Military Interdepartmental Purchase Request															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MPWH System Qualification Testing/ Live Fire, Govt	MIPR	Redstone Test Center : Redstone Arsenal, AL	0.000	2.640		-		-		-		-	-	2.640	-
Lightweight CLU Test and Evaluation	SS/CPFF	JJV/Raytheon/ Lockheed Martin : Orlando, FL/Tucson, AZ	0.000	-		-		-		-		-	1.715	1.715	-
Lightweight CLU Test and Evaluation	MIPR	Redstone Test Center : Redstone Arsenal, AL	0.000	-		-		-		-		-	7.099	7.099	-
Subtotal			0.000	2.640		-		-		-		-	8.814	11.454	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	4.471		4.164		3.945		-		3.945	59.149	71.729	-
Remarks															

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

Date: February 2015

[illegible]

2040 / 5

R-1 Program Element (Number/Name)	Program Element Description	Program Element Status	Program Element Comments

PE 0604611A / JAVELIN

Project (Number/Name)	Start Date	End Date	Duration (Days)	Project Manager	Status	Notes
101	2023-01-01	2023-01-15	14	John Doe	Completed	Project completed successfully.
102	2023-01-15	2023-02-01	16	Jane Smith	In Progress	Project is currently in progress.
103	2023-02-01	2023-02-15	14	John Doe	Completed	Project completed successfully.
104	2023-02-15	2023-03-01	15	Jane Smith	In Progress	Project is currently in progress.
105	2023-03-01	2023-03-15	14	John Doe	Completed	Project completed successfully.
106	2023-03-15	2023-03-31	15	Jane Smith	In Progress	Project is currently in progress.
107	2023-03-31	2023-04-15	15	John Doe	Completed	Project completed successfully.
108	2023-04-15	2023-04-30	15	Jane Smith	In Progress	Project is currently in progress.
109	2023-04-30	2023-05-15	15	John Doe	Completed	Project completed successfully.
110	2023-05-15	2023-05-31	15	Jane Smith	In Progress	Project is currently in progress.

499 / Javelin (AAWS-M)

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MPWH Systems Integration and Test					System Integ & Test																							
MPWH System Qualification/ Live Fire (Flight Testing)					System Qual/ Live Fire																							
(1) MPWH Engineering Change Proposal Approval					ECP Approved																							
LW CLU System Architecture Design					System Architecture Design																							
LW CLU Research/ Design Advanced Materials					Research/ Design Advanced Materials																							
Initiate LW CLU Prototype Software/Firmware					Prototype Software/Firmware																							
LW CLU Fabrication/ System Integration of Prototypes					Fabrication/ System Integration																							
LW CLU Prototype Demonstration					Prototype Demonstration																							
LW CLU Producibility and Environmental Design					Producibility and Environmental Design																							
LW CLU Design Verification Testing					DVT																							
LW CLU Qualification Testing					Qual Tests																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604611A / JAVELIN	Project (Number/Name) 499 / Javelin (AAWS-M)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MPWH Systems Integration and Test	2	2013	2	2014
MPWH System Qualification/ Live Fire (Flight Testing)	1	2014	4	2014
MPWH Engineering Change Proposal Approval	1	2015	1	2015
LW CLU System Architecture Design	1	2015	2	2015
LW CLU Research/ Design Advanced Materials	3	2015	4	2015
Initiate LW CLU Prototype Software/Firmware	4	2015	3	2016
LW CLU Fabrication/ System Integration of Prototypes	4	2016	1	2017
LW CLU Prototype Demonstration	1	2017	1	2017
LW CLU Producibility and Environmental Design	2	2017	2	2018
LW CLU Design Verification Testing	2	2018	1	2019
LW CLU Qualification Testing	2	2019	4	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604622A I Family of Heavy Tactical Vehicles							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	23.944	12.906	-	-	-	11.509	9.957	6.774	6.902	Continuing	Continuing
659: Family Of Hvy Tac Veh	-	21.964	9.299	-	-	-	4.731	4.142	2.963	3.019	Continuing	Continuing
VR5: TWV Protection Kits	-	1.980	3.607	-	-	-	6.778	5.815	3.811	3.883	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element aligns system development and demonstration of Heavy Tactical Vehicles with Future Modular Force requirements to support combat and combat support missions. These missions include the following: line haul, local haul, and unit resupply. These trucks transport water, ammunition, and general cargo over all terrain and throughout the battle-space. Funding will also be used for developing the Army's next generation of tactical trucks, as part of the Army's Tactical Wheeled Vehicle Modernization Strategy. Funding in Project 659 supports the Family of Heavy Trucks (FHTV) Active Safety technologies. Funding in Project VR5 supports periodic, evolutionary upgrade of survivability and crew protection for Heavy Tactical Vehicles as described in the Long Term Protection Strategy.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	28.310	12.913	7.624	-	7.624
Current President's Budget	23.944	12.906	-	-	-
Total Adjustments	-4.366	-0.007	-7.624	-	-7.624
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	-4.366	-0.007	-7.624	-	-7.624

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
659: Family Of Hvy Tac Veh	-	21.964	9.299	-	-	-	4.731	4.142	2.963	3.019	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Family of Heavy Tactical Vehicles (FHTV) variants Active Safety Family of Heavy Tactical Vehicles (FHTV) Heavy Dump Truck (HDT) Mine Resistant Ambush Protected (MRAP) Vehicle												
A. Mission Description and Budget Item Justification Develop and test active safety technologies for insertion into the Family of Heavy Tactical Vehcile (FHTV) variants. Active Safety technologies include drive by wire (electronically controlled engine, transmission, steering, and braking), lane departure warning, stability control, adaptive cruise control, and blind spot monitoring. This will also include the associated wiring and databus upgrades necessary for the active safety technologies and future incorporation of autonomy. The integration of active safety will reduce the frequency of accidents by 26-59%. Furthermore, active safety is the foundation for achieving the objective of autonomy as specified in the individual variant's Capability Production Documents (CPD) and shall enable functions to be performed by a robotic (autonomous, semi-autonomous, Leader Follower, Soldier assist systems, e.g., blind side monitoring, driver fatigue alert system) and remote control capability.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Heavy Dump Truck (HDT) Description: Truck Test Assets (Procure) FY 2014 Accomplishments: Test and Evaluation of Armor Integration								5.410	-	-	-	-
Title: Test and Evaluation Description: Test and Evaluation (Conduct Testing) FY 2014 Accomplishments: Test and Evaluation (HDT) FY 2015 Plans: Test and Evaluation								3.176	5.855	-	-	-
Title: Program Support								1.319	0.854	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh			
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Program Support											
FY 2014 Accomplishments: Funds will provide program support to the Heavy Tactical Vehicles family (HDT)											
FY 2015 Plans: Funds will provide program support to the Heavy Tactical Vehicles family.											
Title: Prototype Design and Integration							5.069	2.590	-	-	-
Description: Prototype Design and Integration											
FY 2014 Accomplishments: Prototype Design and Integration (HDT)											
FY 2015 Plans: Prototype Design and Integration											
Title: Maxx Pro & MATV							6.990	-	-	-	-
Description: Maxx Pro & MATV Test and Development											
FY 2014 Accomplishments: Maxx Pro & MATV Test and Development											
Accomplishments/Planned Programs Subtotals							21.964	9.299	-	-	-
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Family of Heavy Tactical Vehicles: <i>Family of Heavy Tactical Vehicles (FHTV) DA0500</i>	5.915	78.425	27.549	-	27.549	41.806	7.404	-	-	-	161.099
• Truck, Dump: <i>Truck, Dump, 20T D16001</i>	-	-	-	-	-	26.738	29.716	22.756	23.188	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• Mine Resistant Ambush	481.240	211.731	19.146	393.100	412.246	7.534	-	-	-	-	1,112.751
Protected: <i>Mine Resistant Ambush</i>											
<i>Protected (MRAP) Mods (D03002)</i>											
Remarks											
D. Acquisition Strategy											
The funding will be utilized to develop an active safety integration kit for FHTV variants including prototype parts and installation as well as limited functional checks and testing. Future R&D funding will be used to perform testing and develop a Technical Data Package (TDP) for procurement with MOD line funding.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HDT Prototype Design and Integration	C/FFP	TBD : TBD	0.000	5.069	May 2015	2.590	Jul 2015	-		-		-	-	7.659	-
Subtotal			0.000	5.069		2.590		-		-		-	-	7.659	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Heavy Dump Truck (HDT) Test Assets	C/FFP	TBD : TBD	0.000	5.410	May 2015	-		-		-		-	-	5.410	-
Maxx Pro & MATV Development	MIPR	Various : Various	0.000	5.000	Apr 2014	-		-		-		-	-	5.000	-
Maxx Pro & MATV Armor Development	MIPR	Various : TARDEC/ Various	8.597	-		-		-		-		-	-	8.597	-
Subtotal			8.597	10.410		-		-		-		-	-	19.007	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Maxx Pro & MATV Program Support Costs	MIPR	TARDEC : Warren, MI	2.721	-		-		-		-		-	-	2.721	-
HDT Program Support	MIPR	TACOM : Warren, MI	0.046	1.319	Oct 2014	0.854	Mar 2015	-		-		-	Continuing	Continuing	Continuing
Subtotal			2.767	1.319		0.854		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HDT Test and Evaluation	MIPR	TBD : TBD	0.000	3.176	Jul 2015	5.855	Jul 2015	-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) 659 / Family Of Hvy Tac Veh			

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Maxx Pro & MATV Test	MIPR	Various : Various	3.682	-		-		-		-		-	-	3.682	-
Maxx Pro & MATV Test	MIPR	Various : TARDEC/ Various	0.000	1.990	Apr 2014	-		-		-		-	-	1.990	-
Subtotal			3.682	5.166		5.855		-		-		-	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.046	21.964	9.299	-	-	-	-	-	-

Remarks

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604622A / Family of Heavy Tactical Vehicles

Project (Number/Name)

659 / Family Of Hvy Tac Veh

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FHTV Active Safety Program Management Support																												
FHTV Active Safety Prototype Design and Integration																												
(1) Heavy Dump Truck (HDT) Test Assets																												
HDT Program Management Support																												
HDT Prototype Design and Integration																												
HDT Testing																												
Maxx Pro & MATV Development																												
Maxx Pro & MATV Test FY14																												
Maxx Pro & MATV Armor Development																												
Maxx Pro & MATV Program Support																												
Maxx Pro & MATV Test FY13																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>	Project (Number/Name) 659 / <i>Family Of Hvy Tac Veh</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FHTV Active Safety Program Management Support	3	2016	2	2020
FHTV Active Safety Prototype Design and Integration	4	2016	4	2019
Heavy Dump Truck (HDT) Test Assets	4	2015	4	2015
HDT Program Management Support	1	2013	4	2021
HDT Prototype Design and Integration	2	2017	1	2018
HDT Testing	2	2018	4	2018
Maxx Pro & MATV Development	2	2014	2	2015
Maxx Pro & MATV Test FY14	2	2014	2	2015
Maxx Pro & MATV Armor Development	2	2013	4	2014
Maxx Pro & MATV Program Support	2	2013	4	2014
Maxx Pro & MATV Test FY13	2	2013	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) VR5 / TWV Protection Kits			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
VR5: TWV Protection Kits	-	1.980	3.607	-	-	-	6.778	5.815	3.811	3.883	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This program element supports periodic, evolutionary upgrade of survivability and crew protection for Heavy Tactical Vehicles (HTV) as described in the Tactical Wheeled Vehicle (TWV) Strategy and individual variants' Capability Production Documents. The upgrades will leverage the Army Technology Objective's (ATO) survivability and Army Research Laboratory's (ARL) research and development activities to develop and evaluate kits which increase the protection level of the HTV to the MRAP 1.1 level while anticipating changing threat environments, protection gaps, or improving the operating performance, efficiency, and reliability through armor weight reduction. This Program Element (PE) also supports increasing crew protection by leveraging advancements in autonomous ground vehicle technology via development and evaluation of autonomous applique kits that can be applied to the current and future HTV fleet.												
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Design and Build Armor Kits.								1.747	1.906	-	-	-
Description: Design and build prototype kits for the Heavy Tactical Vehicle systems.												
FY 2014 Accomplishments: Design and build prototype kits that represent production alternatives in terms of form, fit, and function sufficient to validate the required protection levels and kit interface to the vehicle platform.												
FY 2015 Plans: Design and build prototype kits in terms of form, fit, and function sufficient to validate the required protection levels and kit interface to the vehicle platform.												
Title: Test and Evaluation.								0.023	1.531	-	-	-
Description: Funding is provided for the following effort.												
FY 2014 Accomplishments: Validation of HUSK design in preparation of Full Materiel Release.												
FY 2015 Plans: Validation of HUSK design in preparation of Full Materiel Release.												
Title: Program Management								0.210	0.170	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) VR5 / TWV Protection Kits			
B. Accomplishments/Planned Programs (\$ in Millions)											
						FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	
Description: Subject matter engineering matrix support for ballistics advisement.											
FY 2014 Accomplishments: Program Management support.											
FY 2015 Plans: Program Management support											
Accomplishments/Planned Programs Subtotals						1.980	3.607	-	-	-	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 005: Family of Heavy Tactical Vehicles (FHTV) (DA0500)	5.915	78.425	27.549	-	27.549	41.806	7.404	-	-	-	161.099
• 003: Family of Medium Tactical Vehicles (FMTV) (D15500)	305.650	195.624	90.040	243.998	334.038	192.812	210.923	247.798	247.798	-	1,734.643
• 000: Tactical Wheeled Protection Kits - D04003	17.000	38.226	48.292	-	48.292	42.151	43.515	44.815	45.661	-	279.660
Remarks											
D. Acquisition Strategy											
All funds are dedicated to creating an armor solution to develop MRAP 1.1-level armor for the HET A1.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) VR5 / TWV Protection Kits			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	C/TBD	WARREN, MI : TBD	0.058	-		-		-		-		-	-	0.058	-
Subtotal			0.058	-		-		-		-		-	-	0.058	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Analysis of Alternatives/ Design and Build Armor Kits	SS/CPFF	OshKosh Truck Corporation : OshKosh, WI	0.173	-		-		-		-		-	Continuing	Continuing	Continuing
Design and Build	MIPR	TARDEC : Warren, MI	0.973	1.747		1.906		-		-		-	-	4.626	-
Vulnerability Modeling and Simulation	MIPR	Army Research Lab : Adelphi, MD	0.120	-		-		-		-		-	Continuing	Continuing	Continuing
Survivability Modeling & Simulation	MIPR	TARDEC : Warren, MI	0.250	-		-		-		-		-	-	0.250	-
Subtotal			1.516	1.747		1.906		-		-		-	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	MIPR	TARDEC : Warren, MI	0.457	0.210		0.170		-		-		-	-	0.837	-
Subtotal			0.457	0.210		0.170		-		-		-	-	0.837	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) VR5 / TWV Protection Kits				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost		Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	Various Locations : Various Locations	2.752	0.023		1.531		-		-		-		Continuing	Continuing	Continuing
Subtotal			2.752	0.023		1.531		-		-		-		-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.783	1.980	3.607	-	-	-	-	-	-

Remarks

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604622A / Family of Heavy Tactical Vehicles

Project (Number/Name)

VR5 / TWV Protection Kits

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>	Project (Number/Name) VR5 / <i>TWV Protection Kits</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Design and Build Armor Kits	2	2012	4	2020
Test and Evaluation	1	2013	3	2017
Program Support	2	2012	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.514	16.756	10.076	-	10.076	4.874	6.934	12.784	0.965	Continuing	Continuing
586: Air Traffic Control	-	0.514	16.756	10.076	-	10.076	4.874	6.934	12.784	0.965	Continuing	Continuing

Note

FY 2016: POMBES16-20 increased the FY 2016 by \$4,108K to fund the Mobile Tower System (MOTS) Airfield Lighting System (ALS) and the ATC Tactical Network nonrecurring engineering, test and evaluation.

A. Mission Description and Budget Item Justification

This program element funds continuous efforts in the development of modernized tactical Air Traffic Control (ATC) systems that will enable safety of aircraft operations. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international air traffic control mandates and combat identification requirements. Funding will be utilized to develop, evaluate and integrate technologies required to support ATC requirements. Efforts funded include the Tactical Airspace Integration System (TAIS) Web Based Architecture and Airspace Improvements Initiative, Air Traffic Navigation Integration and Coordination System (ATNAVICS) Modernization, Advanced Surveillance, the development of an ATC Tactical Network, the Mobile Tower System (MOTS) Airfield Lighting System (ALS), and Tactical Terminal Control System (TTCS) modernization.

TAIS, the Airspace Management System of the Army Mission Command System, requires the development and testing of web-based services for Airspace Control, and integration of these new web-based services into the TAIS common Army Mission Command hardware, Air Traffic Services (ATS) and Airspace Integration Improvement Initiatives. Additional capabilities will be provided through advanced surveillance interfaces, mission planning interfaces, and TAIS dynamic airspace updates to the cockpit. TAIS efforts also include developing and testing improvements to the air picture including the addition of Blue Force Tracker correlation and radar fusion capability. TAIS develops software and required hardware for airspace management web services, to operate effectively in a dynamic net-centric interconnected environment. TAIS also integrates advanced surveillance capabilities to further enhance airspace integration and dynamic management capabilities. ATNAVICS provides all weather instrument flight capabilities to include terminal, radar precision approach and landing services to all Army, Joint, and Allied aircraft. ATNAVICS will integrate Mode S capabilities required to control aircraft both OCONUS and CONUS. ATNAVICS will network its radar picture and interrogator data (Mode S) to aviation and joint network nodes through TAIS. ATNAVICS will undergo an effort to increase the range of the primary radar to 60 nautical miles. As the Department of Defense transitions military aircraft to positional self-reporting technologies, these various technologies will be incorporated in the Advanced Surveillance program. Advanced Surveillance allows ATC reception of aircraft self-reporting data which includes the Automatic Dependent Surveillance Broadcast (ADS-B). Advanced Surveillance integrates local radar feeds and self-reporting aircraft positional data into a correlated air situational awareness picture. ATC Tactical Networking supports the non recurring engineering, test and evaluation tasks necessary for the integration of the radios, control stations and transmitter/receivers and software that will provide all ATC tactical systems an airfield network node capability. This will enable each ATC system to send voice and data between ATC platforms including connectivity to an external network for long range flight-following and data exchange. ATC Networking is required to meet the Net Ready Key Performance Parameter for ATC tactical systems. MOTS provides the Joint Force Commander or Combatant Commander a highly mobile, self-contained, integrated, and reliable information system platform for visual and procedural aircraft deconfliction and aircrew force protection in unified action terminal airspace environments. The Airfield Lighting System (ALS) is a component of the MOTS and can operate solar powered or by generator power. The ALS improvements include a Precision Approach Path Indicator (PAPI) and an

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604633A / <i>Air Traffic Control</i>
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ALS trailer charging system. The TTCS provides initial Air Traffic Services at remote landing sites and drop zones. TTCS includes secure communications equipment for aircraft separation and ground control, meteorological measuring system for basic weather information, and precision location capability.

B. Program Change Summary (\$ in Millions)	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	0.514	16.764	5.968	-	5.968
Current President's Budget	0.514	16.756	10.076	-	10.076
Total Adjustments	-	-0.008	4.108	-	4.108
• Congressional General Reductions	-	-0.008			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	4.108	-	4.108

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604633A / <i>Air Traffic Control</i>				Project (Number/Name) 586 / <i>Air Traffic Control</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
586: <i>Air Traffic Control</i>	-	0.514	16.756	10.076	-	10.076	4.874	6.934	12.784	0.965	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This project funds continuous efforts in the development of modernized tactical Air Traffic Control (ATC) systems that will enable safety of aircraft operations. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international air traffic control mandates and combat identification requirements. Funding will be utilized to develop, evaluate and integrate technologies required to support ATC requirements. Efforts funded include the Tactical Airspace Integration System (TAIS) Web Based Architecture and Airspace Improvements Initiative, Air Traffic Navigation Integration and Coordination System (ATNAVICS) Modernization, Advanced Surveillance, the development of an ATC Tactical Network, the Mobile Tower System (MOTS) Airfield Lighting System (ALS), and Tactical Terminal Control System (TTCS) modernization.

TAIS, the Airspace Management System of the Army Mission Command System, requires the development and testing of web-based services for Airspace Control, and integration of these new web-based services into the TAIS common Army Mission Command hardware, Air Traffic Services (ATS) and Airspace Integration Improvement Initiatives. Additional capabilities will be provided through advanced surveillance interfaces, mission planning interfaces, and TAIS dynamic airspace updates to the cockpit. TAIS efforts also include developing and testing improvements to the air picture including the addition of Blue Force Tracker correlation and radar fusion capability. TAIS develops software and required hardware for airspace management web services, to operate effectively in a dynamic net-centric interconnected environment. TAIS also integrates advanced surveillance capabilities to further enhance airspace integration and dynamic management capabilities. ATNAVICS provides all weather instrument flight capabilities to include terminal, radar precision approach and landing services to all Army, Joint, and Allied aircraft. ATNAVICS will integrate Mode S capabilities required to control aircraft both OCONUS and CONUS. ATNAVICS will network its radar picture and interrogator data (Mode S) to aviation and joint network nodes through TAIS. ATNAVICS will undergo an effort to increase the range of the primary radar to 60 Nautical Miles. As the Department of Defense transitions military aircraft to positional self-reporting technologies, these various technologies will be incorporated in the Advanced Surveillance program. Advanced Surveillance allows ATC reception of aircraft self-reporting data which includes the Automatic Dependent Surveillance Broadcast (ADS-B). Advanced Surveillance integrates local radar feeds and self-reporting aircraft positional data into a correlated air situational awareness picture. ATC Tactical Networking supports the nonrecurring engineering, test and evaluation tasks necessary for the integration of the radios, control stations and transmitter/receivers and software that will provide all ATC tactical systems an airfield network node capability. This will enable each ATC system to send voice and data between ATC platforms including connectivity to an external network for long range flight-following and data exchange. ATC Networking is required to meet the Net Ready Key Performance Parameter (KPP) for ATC tactical systems. MOTS provides the Joint Force Commander or Combatant Commander a highly mobile, self-contained, integrated, and reliable information system platform for visual and procedural aircraft deconfliction and aircrew force protection in unified action terminal airspace environments. The Airfield Lighting System (ALS) is a component of the MOTS and can operate solar powered or by generator power. The ALS improvements include a Precision Approach Path Indicator (PAPI) and an ALS trailer charging system. The TTCS provides initial Air Traffic Services at remote landing sites and drop zones. TTCS includes secure communications equipment for aircraft separation and ground control, meteorological measuring system for basic weather information, and precision location capability.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604633A / <i>Air Traffic Control</i>		Project (Number/Name) 586 / <i>Air Traffic Control</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: Tactical Airspace Integration System (TAIS)			-	9.463	2.733
Description: TAIS Airspace Information Center (AIC) and Airspace Integration Improvements Initiative enhancements will be addressed through upgrades to the communications suite through new components such as 117G radios, BFT2/KGV-72, and ADS-B. TAIS develops software and required hardware for airspace management web services to operate effectively in a dynamic net-centric interconnected environment. TAIS also integrates advanced surveillance interfaces to further enhance a dynamic airspace management capability.					
FY 2015 Plans: Develop sensor and data interfaces to Civil Aviation agencies in support of military and homeland defense Air Traffic Services and Airspace Management Command and Control. Develop web services and service oriented architecture with Joint systems to facilitate Air Traffic services and Airspace Command and Control across DoD agencies, Federal Agencies and with Allied Nations. Develop dynamic mission updates and interfaces with Unmanned Aerial Systems and DoD / Joint Air platforms for situational awareness. Develop and refine interfaces to cooperative, and non cooperative sensors and self reporting aircraft in support of Situational Awareness and airspace management and de-confliction. Develop rapidly deployable web based capabilities to enable disconnected off grid operations via non-line-of-sight communications and disjointed edge user nodes in support of ATC and ATS. Develop personnel recovery data dissemination to facilitate medical evacuation and search-and-rescue operations. Develop 3D view of airspace execution and usage to prevent fratricide and mid-air collisions between military and civil aircraft. Develop capability to display and disseminate Instrument Flight Rules (IFR) and route structures, navigation information, and terminal area information. Implement new interfaces to support the rapid visualization, de-confliction of airspace, increasing situational awareness and facilitating rapid clearance of airspace.					
FY 2016 Plans: Develop sensor and data interfaces to Civil Aviation agencies in support of military and homeland defense Air Traffic Services and Airspace Management Command and Control. Develop web services and service oriented architecture with Joint systems to facilitate Air Traffic services and Airspace Command and Control across DoD agencies, Federal Agencies and with Allied Nations. Continue to develop dynamic mission updates and interfaces with Unmanned Aerial Systems and DoD / Joint Air platforms for situational awareness. Continue to develop and refine interfaces to cooperative and non cooperative sensors and self reporting aircraft in support of Situational Awareness and airspace management and de-confliction. Develop rapidly deployable web based capabilities to enable disconnected off grid operations via non-line-of-sight communications and disjointed edge user nodes in support of ATC and ATS. Develop a computer-based, adaptive learning environment (ALE) to advance operator proficiency and adaptive decision-making capabilities. Integrate the Simulation, Networking Commonality (SiNC) and Centralized Aviation Flight Records System (CAFRS) efforts to incorporate automated forms such as electronic flight strips, duty and facility logs and ATC records within the ATC network environment.					
Title: Air Traffic Navigation Integration and Coordination System (ATNAVICS) Modernization			-	3.601	2.153

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control	Project (Number/Name) 586 / Air Traffic Control		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p>Description: ATNAVICS is a highly mobile tactical area surveillance and precision approach air traffic control radar system. It provides the Joint Force Commander, or Combatant Commander, with a mobile, self-contained, and reliable Airport Surveillance Radar, Precision Approach Radar, and a Secondary Surveillance Radar capability. System modernization includes radar interrogation enhancements.</p> <p>FY 2015 Plans: Continue the development of the TPX-57 with Mode S as the secondary surveillance interrogator onto the radar. Support development of the hardware and software which processes both Mode S and ADS-B messages as transmitted via the extended squitter function or upon interrogation, as well as the physical integration of the component into the ATNAVICS. Conduct system testing and qualification, as well as certification and Federal Aviation Administration (FAA) Army Spectrum Managment Office (ASMO) approvals, and Air Traffic Control Radar Beacon System Identification Friend or Foe, Mark XII/Mark XIIa Systems (AIMS) certification.</p> <p>FY 2016 Plans: Complete system level development, testing, certification and integration of Mode S and ADS-B secondary surveillance radar capability (AN/TPX-59) into the ATNAVICS Platform. This will enable ATNAVICS to be compliant with ICAO and FAA mandates.</p>					
<p>Title: Advanced Surveillance</p> <p>Description: Advanced Surveillance technologies integration supports the nonrecurring engineering, integration and test tasks required to incorporate the passive reception of self-reporting technologies and the correlation of local radar feeds into Air Traffic Control systems. Self-reporting technologies include ADS-B, Mode 5 Level 2, Mode S and similar civil aircraft self-reporting technologies. Local radar feeds include any radars in close proximity to ATC systems.</p> <p>FY 2015 Plans: Complete testing and integration of the selected Advanced Surveillance passive receiver into non-equipped tactical ATC equipment, including the TAIS and TTCS. Testing and evaluation will include participation in NIE and Bold Quest exercises and operational/developmental testing to include potentially destructive testing. Advanced Surveillance will enable tactical Army ATC equipment to comply with FAA mandated capabilities.</p>			-	0.500	-
<p>Title: ATC Tactical Network</p> <p>Description: ATC Tactical Networking supports the nonrecurring engineering, test and evaluation tasks necessary for the integration of the radios, control stations and transmitter/receivers and software that will provide all ATC tactical systems an airfield network node capability. This will enable each ATC system to send voice and data between ATC platforms including connectivity to an external network for long range flight-following and data exchange. ATC Networking is required to meet the Net Ready KPP for ATC tactical systems.</p>			-	1.275	3.000

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control		Project (Number/Name) 586 / Air Traffic Control	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
FY 2015 Plans: Conduct non recurring engineering, test and evaluation tasks necessary for the integration of the radios, control stations and transmitter/receivers and software that will provide all ATC tactical systems an airfield network node capability which enables each ATC system to send voice and data between ATC platforms including connectivity to an external network for long range flight-following and data exchange.					
FY 2016 Plans: Continue to conduct nonrecurring engineering, test and evaluation tasks necessary for the integration of the network services and software that will provide all ATC tactical systems an airfield network node capability which enables each ATC system to send voice and data between ATC platforms. This will include connectivity to external networks and exchange of system and operations status data.					
Title: Mobile Tower System (MOTS) Airfield Lighting System (ALS) Description: MOTS is a rapidly deployable Air Traffic Control System supporting operations at military/civilian airfields and tactical landing zones. It provides ATC tower, secure, anti-jam communications, basic weather information, and precision location. The system includes an Airfield Lighting System that provides a visual indication of landing zone and runway locations in degraded conditions. FY 2016 Plans: Conduct nonrecurring engineering, test and evaluation tasks necessary for the development and integration of an airfield runway light charging system, and Precision Approach Path Indicator (PAPI) for the ALS. The charging system will enable the runway lights to be charged in unfavorable or non-existent solar conditions. The PAPI will provide the pilot a visual indication of an aircraft's position relative to the designated glide slope for the runway. Provides enhancements to the MOTS Block 0 tactical airfield lighting system. This will meet contingency airfield lighting system requirements designed for night, instrument, and unaided/aided landing zone and runway operations in a theater of operations.			-	-	1.202
Title: Tactical Terminal Control System (TTCS) Description: TTCS provides initial Air Traffic Services at remote landing sites and drop zones. TTCS includes secure communications equipment for aircraft separation and ground control, meteorological measuring system for basic weather information, and precision location capability. FY 2015 Plans:			-	0.987	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control			Project (Number/Name) 586 / Air Traffic Control					
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016		
Design, develop and test the platform specific architecture for the integration of the ATC Tactical Operations Center Intercommunications System (TOCNET) common voice switching system. The integration will permit future networking capabilities.											
Title: Program Management Support							0.120	0.321	0.325		
Description: Program Management Support of PM ATC.											
FY 2014 Accomplishments: Continued program management in support of PM ATC.											
FY 2015 Plans: Continue program management in support of PM ATC.											
FY 2016 Plans: Continue program management in support of PM ATC.											
Title: Tech and Log Support							0.394	0.609	0.663		
Description: Technical and logistics services in support of PM ATC.											
FY 2014 Accomplishments: Continued technical and logistics services in support of PM ATC.											
FY 2015 Plans: Continue technical and logistics services in support of PM ATC.											
FY 2016 Plans: Continue technical and logistics services in support of PM ATC.											
Accomplishments/Planned Programs Subtotals							0.514	16.756	10.076		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Air Traffic Control (AA0050): Air Traffic Control	94.192	127.232	94.545	-	94.545	96.825	114.541	99.819	64.178	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control	Project (Number/Name) 586 / Air Traffic Control
D. Acquisition Strategy This project is comprised of multiple systems supporting ATC development and test efforts. While the detailed acquisition strategy varies by program, the general strategy for each program is to complete development and testing efforts through contract modifications, engineering service tasks, and new/follow-on contracts. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international air traffic control and upcoming Next Gen requirements and mandates, as well as current aircraft self-reporting transponders.		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control				Project (Number/Name) 586 / Air Traffic Control					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	PM ATC : Redstone Arsenal, AL	0.333	0.120	Dec 2013	0.321	Oct 2014	0.325	Oct 2015	-		0.325	Continuing	Continuing	Continuing
Subtotal			0.333	0.120		0.321		0.325		-		0.325	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TAIS (Web Based Services Dev)	SS/T&M	General Dynamics C4S : Huntsville, AL	14.856	-		9.463	Apr 2015	2.733	Mar 2016	-		2.733	Continuing	Continuing	Continuing
ATNAVICS Modernization	SS/CPFF	Raytheon : Marlboro, Mass	12.187	-		3.601	Apr 2015	2.153	Mar 2016	-		2.153	-	17.941	-
Advanced Surveillance	Various	Various : Various	3.326	-		0.500	Jan 2015	-		-		-	-	3.826	-
Mobile Tower System (MOTS) Airfield Lighting System (ALS)	SS/FFP	Sierra Nevada Corporation (SNC) : Sparks, NV	0.000	-		-		1.202	Dec 2015	-		1.202	Continuing	Continuing	Continuing
Tactical Terminal Control System (TTCS)	Various	Various : Various	0.791	-		0.987	Mar 2015	-		-		-	-	1.778	-
Tech and Log Development Support	Various	PM ATC : Huntsville, AL	2.865	0.394	Dec 2013	0.609	Oct 2014	0.663	Oct 2015	-		0.663	Continuing	Continuing	Continuing
ATC Tactical Network	Various	PM ATC : Huntsville, AL	0.000	-		1.275	Jan 2015	3.000	Jan 2016	-		3.000	Continuing	Continuing	Continuing
Subtotal			34.025	0.394		16.435		9.751		-		9.751	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			34.358	0.514		16.756		10.076		-		10.076	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604633A / <i>Air Traffic Control</i>	Project (Number/Name) 586 / <i>Air Traffic Control</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
TAIS (Web Based Services Dev)																																
													TAIS																			
Advanced Surveillance Test & Integration																																
ATNAVICS Modernization																																
									ATNAVICS TPX-59 Integration																							
ATNAVICS Continued Modernization																					ATNAVICS											
Mobile Tower System (MOTS) Airfield Lighting System (ALS)													Airfield Lighting System (ALS)																			
Tactical Terminal Control System (TTCS)																																
ATC Tactical Network					Common TOCNET																											
									ATC Tactical Network																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604633A / <i>Air Traffic Control</i>	Project (Number/Name) 586 / <i>Air Traffic Control</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TAIS (Web Based Services Dev)	1	2015	4	2020
Advanced Surveillance Test & Integration	1	2015	4	2015
ATNAVICS Modernization	1	2015	4	2016
ATNAVICS Continued Modernization	1	2019	4	2020
Mobile Tower System (MOTS) Airfield Lighting System (ALS)	1	2016	4	2017
Tactical Terminal Control System (TTCS)	1	2015	4	2015
ATC Tactical Network	1	2015	4	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604641A / TACTICAL UNMANNED GROUND VEHICLE							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	2.769	40.374	-	40.374	50.782	30.099	23.886	9.927	Continuing	Continuing
DV7: Small Unmanned Ground Vehicle	-	-	2.769	40.374	-	40.374	50.782	30.099	23.886	9.927	Continuing	Continuing

A. Mission Description and Budget Item Justification

CRS-(I) is a man-packable, miniature (<25lbs), highly mobile, unmanned robotic system with advanced sensors/mission modules for dismounted Soldiers. The program is the result of collaboration between Director, Army Capabilities Integration Center (DIR ARCIC), United States Army Training and Doctrine Command (TRADOC) and Deputy Commandant for Combat Development and Integration (DC CD&I), Headquarters Marine Corps (HQMC) dated 19 Sep 2012. Thus the CRS-(I) program has been jointly developed by the Army and USMC incorporating Army capability requirements, USMC Engineering Squad Robot (ESR) and USMC Tactical Robotic Controller (TRC) capabilities into one program.

As the lead service and in accordance with the Joint MOA Sec. 8.a., the Army will "have responsibility and authority for overall programming, budgeting, obligation, and expenditure of Research, Development, Test, and Evaluation (RDT&E) funding appropriated for program development."

The CRS-(I) capability contributes to the essential Joint Operational Concepts (JOC) of: Major Combat Operations (MCO); Military Support to Stabilization, Security, Transition, and Reconstruction (SSTR); Homeland Support and Civil Defense and Joint Functional Concepts (JFC) of: Force Application and Protection. The CRS-(I) contributes directly to Situational Awareness, Detect, Protect and Neutralize by providing a standoff hazards interrogation, detection, confirmation and neutralization capability employed to support a wide spectrum of mobility missions for current and future forces by providing required standoff capability across the Warfighting Functions. This capability allows commanders to make more informed decisions and plans, to use their forces more effectively and efficiently to produce desired outcomes, and to conduct focused operations for high-risk missions or selected missions that best satisfy the requirement without the limitations and vulnerabilities of manned systems. The CRS-(I) capability provides commanders the ability to persistently monitor the operational environment (OE) while protecting and sustaining the force at standoff distances from the threat. The CRS-(I) complements the Joint Integrated Warfighting Force by providing standoff to the Warfighter during Major Combat Operations, stability operations, and homeland security. The CRS-(I) provides Warfighters the capability to find and identify targets of interest in the operational environment.

In support of emerging requirements, the Robot Enhancement Program (REP) uses a "buy, try and inform" methodology to evaluate Commercial Off The Shelf (COTS), Government Off The Shelf (GOTS) and Non-Developmental Items (NDI) products that have the potential to enhance Soldier combat effectiveness. Hardware quantities will be limited to available REP funds. Evaluation results obtained will be used to inform emerging requirements documents and Cost-Benefit Analyses to support future Army decision making actual operational user feedback.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604641A / TACTICAL UNMANNED GROUND VEHICLE			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	6.770	20.290	-	20.290
Current President's Budget	-	2.769	40.374	-	40.374
Total Adjustments	-	-4.001	20.084	-	20.084
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-4.001			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	20.084	-	20.084

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604641A / TACTICAL UNMANNED GROUND VEHICLE				Project (Number/Name) DV7 / Small Unmanned Ground Vehicle			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DV7: Small Unmanned Ground Vehicle	-	-	2.769	40.374	-	40.374	50.782	30.099	23.886	9.927	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY15 Program Element 0604641A Project DV7 will capture requirements for Common Robotic System (Individual) (CRS-(I)) and a number of other emerging robotic systems development and test requirements. This program is a new start in FY15.

A. Mission Description and Budget Item Justification

CRS-(I) is a man-packable, miniature (<25lbs), highly mobile, unmanned robotic system with advanced sensors/mission modules for dismounted Soldiers. The program is the result of collaboration between Director, Army Capabilities Integration Center (DIR ARCIC), United States Army Training and Doctrine Command (TRADOC) and Deputy Commandant for Combat Development and Integration (DC CD&I), Headquarters Marine Corps (HQMC) dated 19 Sep 2012. Thus the CRS-(I) program has been jointly developed by the Army and USMC incorporating Army capability requirements, USMC Engineering Squad Robot (ESR) and USMC Tactical Robotic Controller (TRC) capabilities into one program.

As the lead service and in accordance with the Joint MOA Sec. 8.a., the Army will "have responsibility and authority for overall programming, budgeting, obligation, and expenditure of Research, Development, Test, and Evaluation (RDT&E) funding appropriated for program development."

The CRS-(I) capability contributes to the essential Joint Operational Concepts (JOC) of: Major Combat Operations (MCO); Military Support to Stabilization, Security, Transition, and Reconstruction (SSTR); Homeland Support and Civil Defense and Joint Functional Concepts (JFC) of: Force Application and Protection. The CRS-(I) contributes directly to Situational Awareness, Detect, Protect and Neutralize by providing a standoff hazards interrogation, detection, confirmation and neutralization capability employed to support a wide spectrum of mobility missions for current and future forces by providing required standoff capability across the Warfighting Functions. This capability allows commanders to make more informed decisions and plans, to use their forces more effectively and efficiently to produce desired outcomes, and to conduct focused operations for high-risk missions or selected missions that best satisfy the requirement without the limitations and vulnerabilities of manned systems. The CRS-(I) capability provides commanders the ability to persistently monitor the operational environment (OE) while protecting and sustaining the force at standoff distances from the threat. The CRS-(I) complements the Joint Integrated Warfighting Force by providing standoff to the Warfighter during Major Combat Operations, stability operations, and homeland security. The CRS-(I) provides Warfighters the capability to find and identify targets of interest in the operational environment.

In support of emerging requirements, the Robot Enhancement Program (REP) uses a "buy, try, and inform" methodology to evaluate Commercial Off The Shelf (COTS), Government Off The Shelf (GOTS) and Non-Developmental Items (NDI) products that have the potential to enhance Soldier combat effectiveness. Hardware quantities will be limited to available REP funds. Evaluation results obtained will be used to inform emerging requirements documents and Cost-Benefit Analyses to support future Army decision making actual operational user feedback.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604641A / TACTICAL UNMANNED GROUND VEHICLE			Project (Number/Name) DV7 / Small Unmanned Ground Vehicle		

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>Title: CRS(I) and emerging robotic requirements.</p> <p>Description: During FY15, the CRS-(I) program expects a Material Development Decision (MDD), will complete CRS-(I) AoA letter of sufficiency, begin the program Test & Evaluation Working-Level Integrated Product Team (T&E WIPT), form a CRS-(I) program IPT to support the acquisition process, and additionally support emerging robotic system requirements and REP.</p> <p>FY 2015 Plans: Emerging robotic systems requirements for REP, Material Development Decision (MDD), complete CRS-(I) AoA letter of sufficiency, begin program Test & Evaluation Working-Level Integrated Product Team (T&E WIPT) and form a CRS-(I) program IPT to support the acquisition process.</p> <p>FY 2016 Plans: During FY16, the CRS-(I) program expects to begin pre-EMD and work towards entering MS B, will initiate an RFP, and complete EMD contract award beginning in FY17. Additionally, REP funding under CRS-(I) line will support emerging robotic system requirements.</p>	-	2.769	40.374
Accomplishments/Planned Programs Subtotals	-	2.769	40.374

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• F00001: OPA BCT Unmanned Ground Vehicle	-	-	-	-	-	33.939	64.178	112.644	124.222	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The CRS-(I) system will enter the acquisition process in the Material Solution Analysis (MSA) Phase. Per DoDI 5000.02, an Acquisition Strategy is not required in the MSA Phase of the acquisition process. A letter of sufficiency will be received in FY15. CRS-(I) will enter MS-B as an ACAT III program.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604641A / TACTICAL UNMANNED GROUND VEHICLE						Project (Number/Name) DV7 / Small Unmanned Ground Vehicle					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CRS-(I)	TBD	PdM UGV : Warren, MI	0.000	-		-		1.000		-		1.000	-	1.000	-
Subtotal			0.000	-		-		1.000		-		1.000	-	1.000	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CRS-(I)	MIPR	PdM UGV : Warren, MI	0.000	-		1.000		0.980		-		0.980	-	1.980	-
REP	MIPR	PdM UGV : Warren, MI	0.000	-		0.805		1.090		-		1.090	-	1.895	-
Subtotal			0.000	-		1.805		2.070		-		2.070	-	3.875	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
REP	SS/CR	PdM UGV : Warren, MI	0.000	-		0.964		5.980		-		5.980	-	6.944	-
CRS-(I) EMD Contract	C/CPIF	PdM UGV : Warren, MI	0.000	-		-		31.324		-		31.324	-	31.324	-
Subtotal			0.000	-		0.964		37.304		-		37.304	-	38.268	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		2.769		40.374		-		40.374	-	43.143	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																									
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)																					
2040 / 5										PE 0604641A / TACTICAL UNMANNED GROUND VEHICLE										DV7 / Small Unmanned Ground Vehicle																					
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) MDD																																									
(2) RFP																																									
(3) MS B and Contract Award																																									
(4) PDR																																									
(5) CDR																																									
(6) TRR																																									
(7) MS C																																									
(8) LRIP																																									
(9) FRP																																									
(10) FUE																																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / <i>TACTICAL UNMANNED GROUND VEHICLE</i>	Project (Number/Name) DV7 / <i>Small Unmanned Ground Vehicle</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MDD	2	2015	2	2015
RFP	3	2016	3	2016
MS B and Contract Award	1	2017	1	2017
PDR	3	2017	3	2017
CDR	1	2018	1	2018
TRR	3	2018	3	2018
MS C	3	2019	3	2019
LRIP	3	2019	3	2019
FRP	3	2020	3	2020
FUE	4	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	47.811	65.299	67.582	-	67.582	71.280	65.684	70.813	55.376	Continuing	Continuing
EQ9: Close Access Target Reconnaissance (CATR)	-	-	-	1.656	-	1.656	0.587	-	-	-	-	2.243
L67: Soldier Night Vision Devices	-	10.951	15.249	20.440	-	20.440	20.070	19.851	24.549	28.793	Continuing	Continuing
L70: Night Vision Dev Ed	-	5.875	21.533	27.696	-	27.696	33.103	27.585	17.326	9.469	Continuing	Continuing
L75: Profiler	-	2.545	3.046	2.108	-	2.108	4.129	3.897	3.601	3.744	-	23.070
L76: Dismounted Fire Support Laser Targeting Systems	-	0.063	4.912	4.662	-	4.662	6.047	6.321	14.651	5.390	Continuing	Continuing
L79: Joint Effects Targeting Systems (JETS)	-	28.377	20.559	11.020	-	11.020	7.344	8.030	10.686	7.980	Continuing	Continuing

Note
Project EQ9 Close Access Target Reconnaissance (CATR) is a new start in FY 2016.

A. Mission Description and Budget Item Justification
This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for U. S. defense forces to engage enemy forces twenty-four hours a day under conditions of degraded visibility due to darkness, adverse weather, battlefield obscurants, foliage and man-made structures. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations.

Project EQ9 focuses on a kit of electronic devices that collect, send back, and acquire data to provide near real time feedback in order to validate, follow, locate, or track a target (i.e., tagging, tracking, and locating (TTL)). Using electronic audio and/or video recorders, information obtained will validate movement and identify targets. In addition, threat monitoring can be integrated into existing operational tools, help to paint a clearer picture of the battlefield, pinpoint possible target locations, and identify and exploit enemy movements and patterns.

Project L67 develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. Further, this funding supports, near term, the development, test, and evaluation of the Family of Weapon Sights (FWS). In FY17 through FY19, this funding supports Pre-shot Threat Detection (PTD) through Engineering and Manufacturing Development (EMD). It focuses on adapting demonstrated technologies that

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>		R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>
<p>bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability, sniper fire detection and location capability, and integrates improved target location and self-location capability to eliminate friendly fire incidents.</p> <p>Project L70 focuses on night vision, reconnaissance, surveillance and target acquisition (RSTA) sensor and suites of sensors to provide well-defined surveillance and targeting capabilities for a variety of Current, Modular, and Future Force platforms. This project includes: 3rd Generation Improved Forward Looking Infra-Red (3rd GEN (IFLIR)), formerly called Improved Forward Looking Infra-Red (IFLIR) B-Kit development activities, and the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ASA(ALT) Common Operating Environment (COE) effort to meet network interoperability requirements and improve the soldier-machine interface of the Program of Record (POR).</p> <p>Project L75 focuses on development of Profiler Block enhanced capabilities for meteorological (MET) measurement sensors and data. Improvements have reduced the footprint (less soldiers/vehicles) and complexity of the system, improved performance (accuracy), improved survivability, connectivity, no balloon sensor, multiple initialization data, and terrain visualization. The improved MET message data will increase lethality by enabling artillery a greater probability of first round hit with indirect fire systems. Profiler Block III provides a networked laptop configuration while further reducing the system's logistics footprint with the elimination of the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) mounted shelter and trailer located in the Tactical Operations Center (TOC). The Profiler Virtual Module (PVM), a product improvement to the Block III, concept includes the following updates: update of weather model; update of software architecture removing legacy Block I code and creating a modular framework; development in conjunction with the Advanced Field Artillery Tactical Data System (AFATDS) program including AFATDS version II, to provide increased interoperability and usability; and to enable operation of the Profiler system in a virtual machine for use in the Common Operating Environment (COE) versions 2,3,4,and 5. This concept is a flexible approach that supports use of existing Block III hardware, increased accuracy during technical refresh of hardware with higher performance computers, and virtualization on the Command Post Computing Environment (CP CE) server.</p> <p>Project L76 matures technologies and capabilities which benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1, AN/PED-1A, and AN/PED-1B), Joint Effects Targeting System (JETS), and other precision targeting systems. These precision targeting and next generation systems are used by dismounted Soldiers to locate, identify, and target enemy assets. This project focuses on reducing weight, improving imaging performance, and increasing targeting accuracy. Targeting accuracy improvements will focus on developing and integrating affordable, non-magnetic, high accuracy, full-time (24/7), and all weather Azimuth and Vertical Angle Measurement (AVAM) devices, with reduced size, weight and power characteristics into the LLDR system. Long term goals include developing precision targeting capabilities that will operate in a Global Positioning System (GPS) denied environment, and integration of M-Code GPS (next-generation GPS) receivers into LLDR and JETS when available.</p> <p>Project L79 focuses on the Joint Effects Targeting System (JETS) which is an Army program with joint interest (Air Force and Marine Corps). Joint Effects Targeting System (JETS) will meet the one-man, hand-held precision targeting gap identified by the Fire Center of Excellence (FCOE). JETS is a light-weight, handheld system that will provide the single dismounted observer and Joint Terminal Attack Controller (JTAC) with a common, enhanced capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. JETS Target Location and Designation System (TLDS) will be able to interface with existing and future Service Forward Entry Systems (FESS)</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604710A / Night Vision Systems - Eng Dev			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	43.382	65.333	66.635	-	66.635
Current President's Budget	47.811	65.299	67.582	-	67.582
Total Adjustments	4.429	-0.034	0.947	-	0.947
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments 1	4.429	-0.034	0.947	-	0.947

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) EQ9 / Close Access Target Reconnaissance (CATR)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EQ9: Close Access Target Reconnaissance (CATR)	-	-	-	1.656	-	1.656	0.587	-	-	-	-	2.243
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note Project EQ9 Close Access Target Reconnaissance (CATR) is a new start in FY 2016.												
A. Mission Description and Budget Item Justification CATR is a kit of electronic devices that collect, send back, and acquire data to provide near real time feedback in order to validate, follow, locate, or track a target (i.e., tagging, tracking, and locating (TTL)). CATR will use electronic audio and/or video recorders to obtain information which is used to validate movement and identify targets. In addition, CATR allows for threat monitoring that can be integrated into existing operational tools, help to paint a clearer picture of the battlefield, pinpoint possible target locations, and identify and exploit enemy movements and patterns. FY 2016 base development dollars in the amount of \$1.656 million is for the preparation for post-Milestone C/Fielding decision and a Limited User Test (LUT).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Close Access Target Reconnaissance (CATR) Post Milestone C/Fielding Decision									-	-	1.656	
Description: Prepare for post-Milestone C/Fielding decision by conducting a Limited User Test and prepare acquisition documentation.												
FY 2016 Plans: In order for CATR to obtain a Milestone C/Fielding decision in FY16, a Limited User Test (LUT) will be conducted by the Army Test & Evaluation Command (ATEC). Funding is also to secure the type classification of the CATR Basic Set, participate in the logistics demonstration, review LUT test report, develop life cycle sustainment plan, and develop acquisition documents for a Post Milestone C/Fielding decision.												
Accomplishments/Planned Programs Subtotals									-	-	1.656	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• Close Access Target Reconnaissance: Close	-	-	8.010	-	8.010	8.031	8.083	7.995	8.066	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>				Project (Number/Name) EQ9 / <i>Close Access Target Reconnaissance (CATR)</i>			
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
<i>Access Target Reconnaissance (CATR) (B10002)</i>											
Remarks											
D. Acquisition Strategy											
CATR will utilize Quick Reaction Capability (QRC) equipment to refresh, re-kit existing, and field sets/systems in the Brigade Combat Teams (BCTs). CATR will transition to a procurement funded program upon successful completion of a Limited User Test (LUT) and Post Milestone C/Fielding decision.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
2040 / 5				PE 0604710A / Night Vision Systems - Eng Dev				EQ9 / Close Access Target Reconnaissance (CATR)							
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	MIPR	PdM GS, : Ft Belvoir, VA	0.000	-		-		0.146	Nov 2015	-		0.146	-	0.146	-
Subtotal			0.000	-		-		0.146		-		0.146	-	0.146	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Post MS C/ Fielding Decision Prep	C/FP	PdM GS, : Ft Belvoir, VA	0.000	-		-		0.442	Dec 2015	-		0.442	-	0.442	-
Subtotal			0.000	-		-		0.442		-		0.442	-	0.442	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Limited User Test	MIPR	ATEC : APG, MD	0.000	-		-		1.068	Nov 2015	-		1.068	-	1.068	-
Subtotal			0.000	-		-		1.068		-		1.068	-	1.068	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		1.656		-		1.656	-	1.656	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev								Project (Number/Name) EQ9 / Close Access Target Reconnaissance (CATR)																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Limited User Test																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) EQ9 / Close Access Target Reconnaissance (CATR)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Limited User Test	1	2016	2	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L67 / Soldier Night Vision Devices			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
L67: Soldier Night Vision Devices	-	10.951	15.249	20.440	-	20.440	20.070	19.851	24.549	28.793	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops, improves and miniaturizes high performance night vision electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. Further, this funding supports, near term, the development, test, and evaluation of the Family of Weapon Sights (FWS). In FY17 through FY19, this funding supports Pre-shot Threat Detection (PTD) through Engineering and Manufacturing Development (EMD). It focuses on adapting demonstrated technologies that bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability, sniper fire detection and location capability, and integrates improved target location and self-location capability to eliminate friendly fire incidents.

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

	FY 2014	FY 2015	FY 2016
Title: Enhanced Night Vision Goggle (ENVG) Description: The AN/PSQ-20 ENVG is a helmet-mounted passive device for the individual Soldier that fuses image intensification (night vision) and long wave infrared imagery (thermal) into a single, integrated image. It operates in high light conditions to total darkness (no light) and through battlefield obscurants. FY 2014 Accomplishments: Initiated production qualification testing for multiple (AN/PSQ-20) new contracts. FY 2015 Plans: Complete production qualification testing for multiple (AN/PSQ-20) new contracts.	0.135	1.600	-
Title: Family of Weapons Sights (FWS) Description: FWS is a family of weapon sights that enable combat forces to acquire and engage targets with small arms and to conduct surveillance and fire control under day/night obscurants, no-light, and adverse weather conditions. The family utilizes advancements in thermal and low light level sensor to produce Individual (I), Crew-Served (CS), and Sniper (S) weapon sights operable in-line with a day optic or in stand-alone mode. This project integrates a smaller pixel focal plane arrays in multiple large format sizes to improve sensitivity, clarity, and range, while simultaneously reducing the size, weight and power consumption of both the Crew-Served and Sniper variants. The FWS-I variant is a weapon mounted long-wave infrared sensor that enables Soldiers to fire quickly and accurately from any carry position and with significantly reduced exposure to enemy fire by providing	10.816	13.149	19.940

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L67 / Soldier Night Vision Devices		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
a wireless zeroed weapon aimpoint in the Soldier's goggle. Leveraging the success of the Individual variant development, the FWS-CS variant operates as the primary sight; it includes a wireless HMD and provides the Soldier, with input from a laser range device, a more accurate aimpoint that adjusted automatically for range, ammunition characteristics, and vertical angle. The FWS-S variant will provide Snipers with a large format high-definition display enabling forces to acquire and engage targets faster with small arms at longer ranges. FY 2014 Accomplishments: Awarded contract to design, build and deliver FWS-I systems for Government and Contractor testing. FY 2015 Plans: Continue FWS-I EMD. FY 2016 Plans: Complete Government and Contractor testing of FWS-I EMD systems in support of Milestone C, 4QFY16. Initiate FWS-CS and FWS-S EMD to design, build and deliver systems for Government and Contractor testing.				
Title: Small Tactical Optical Rifle Mounted (STORM) Engineering Change Proposal (ECP) Description: The AN/PSQ-23 STORM Micro-Laser Range Finder (MLRF) is a weapon-mounted multi-function laser system. It provides an eye safe laser range finder, digital compass, Infrared (IR) and visible aiming lights, and an IR illuminator for far target location with continuous range, accuracy, weight and power performance enhanced capabilities. Funding supports qualifying smaller, lighter, cheaper STORM variant (STORM SLX) with Soldiers. FY 2015 Plans: Complete Qualification test for ECP units.		-	0.500	-
Title: Laser Target Locator Module (LTLM) Engineering Change Proposal (ECP) Description: LTLM is a second generation Lightweight, Handheld Laser Target Locator with a direct view optic, un-cooled thermal camera, eye-safe laser range finder, digital magnetic compass, and an internal Selective Availability Anti Spoofing Module (SAASM) GPS receiver. Funding supports qualifying smaller, lighter, cheaper LTLM variant (LTLM II) with Soldiers. FY 2016 Plans: Conduct LTLM II qualification testing of ECP units.		-	-	0.500
Accomplishments/Planned Programs Subtotals		10.951	15.249	20.440

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L67 / Soldier Night Vision Devices				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• 603774A VT7: 603774A - Night Vision Systems Advanced Development (VT7)	8.760	3.050	7.292	-	7.292	9.152	5.626	4.908	6.949	Continuing	Continuing	
• Helmet Mounted Enhanced Vision Devi: Helmet Mounted Enhanced Vision Devices (HMEVD) (SSN K36400)	109.548	134.365	97.968	-	97.968	133.853	125.149	76.822	91.465	Continuing	Continuing	
• Thermal Weapon Sight (TWS): Thermal Weapon Sight (TWS) (SSN K22900)	10.074	2.000	-	-	-	-	-	-	-	-	12.074	
• Family of Weapons Sights - Inivid: Family of Weapons Sights - Individual (FWS-I) (SSN K22002)	-	29.205	53.453	-	53.453	74.955	75.304	88.454	108.134	Continuing	Continuing	
• Family of Weapons Sights - Crew Ser: Family of Weapons Sights - Crew Served (FWS-CS) (SSN K22003)	-	-	-	-	-	-	35.943	61.502	75.975	Continuing	Continuing	
• Family of Weapons Sights - Sniper: Family of Weapons Sights - Sniper (FWS-S) (SSN K22004)	-	-	-	-	-	-	10.558	15.620	26.471	Continuing	Continuing	
• Small Tactical Optical Rifle Mounte: Small Tactical Optical Rifle Mounted (STORM) (SSN K35110)	22.300	18.520	23.216	-	23.216	21.605	23.071	23.835	27.636	Continuing	Continuing	
• Laser Target Locators: Laser Target Locators (LTL) (SSN B53800)	41.178	4.236	26.248	-	26.248	34.216	22.966	19.620	21.805	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
The various developmental programs in this project continue to exercise competitively awarded contracts using best value source selection procedures.												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L67 / Soldier Night Vision Devices
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L67 / Soldier Night Vision Devices					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PROGRAM MGMT	Allot	Various : Various	0.946	0.928	Jun 2014	1.164	Dec 2014	1.358	Dec 2015	-		1.358	Continuing	Continuing	-
Subtotal			0.946	0.928		1.164		1.358		-		1.358	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Weapon Sights-Individual (FWS-I)	MIPR	Various : Various	15.904	8.416	Mar 2014	11.768	Mar 2015	-		-		-	-	36.088	-
Family of Weapon Sights-Crew Served (FWS-CS)	MIPR	Various : Various	0.000	-		-		11.374	Apr 2016	-		11.374	-	11.374	-
Family of Weapon Sights-Sniper (FWS-S)	MIPR	Various : Various	0.000	-		-		5.755	Apr 2016	-		5.755	-	5.755	-
Subtotal			15.904	8.416		11.768		17.129		-		17.129	-	53.217	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	NVESD : Ft Belvoir, VA	1.686	0.861	Jun 2014	0.221	Dec 2014	0.374	Dec 2015	-		0.374	Continuing	Continuing	-
Subtotal			1.686	0.861		0.221		0.374		-		0.374	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support Activity	Various	Army Test and Evaluation Command : Various	41.560	0.746	Jun 2014	2.096	May 2015	1.579	Dec 2015	-		1.579	Continuing	Continuing	-
Subtotal			41.560	0.746		2.096		1.579		-		1.579	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>					Project (Number/Name) L67 / <i>Soldier Night Vision Devices</i>			
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	60.096	10.951		15.249		20.440		-		20.440	-	-	-
Remarks													

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604710A / Night Vision Systems - Eng Dev

Project (Number/Name)

L67 / Soldier Night Vision Devices

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ENVG Production Qualification Testing (PQT)																												
(1) FWS-INDIVIDUAL (I) MS B																												
FWS-I Engineering and Manufacturing Development (EMD)																												
(2) FWS-I MS C																												
FWS-I Development/Operational Testing (D/OT)																												
(3) FWS-CREW SERVED (CS) MS B																												
FWS-CS Engineering and Manufacturing Development																												
(4) FWS-CS MS C																												
(5) FWS-SNIPER (S) MS B																												
FWS-S Engineering and Manufacturing Development																												
(6) FWS-S MS C																												
STORM Production Qualification Testing (PQT)																												
LTLM II Production Qualification Testing (PQT)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev										Project (Number/Name) L67 / Soldier Night Vision Devices																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) PTD MS B																		B				EMD															
PTD Engineering and Manufacturing Development (EMD)																																					
(2) PTD MS C																																					
(3) Fused Vision Mobility Device (FVMD) MS B																																					
Fused Vision Mobility Device Engineering Manufacturing Development																														EMD							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L67 / <i>Soldier Night Vision Devices</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ENVG Production Qualification Testing (PQT)	3	2014	3	2015
FWS-INDIVIDUAL (I) MS B	3	2014	3	2014
FWS-I Engineering and Manufacturing Development (EMD)	3	2014	4	2016
FWS-I MS C	4	2016	4	2016
FWS-I Development/Operational Testing (D/OT)	1	2017	4	2017
FWS-CREW SERVED (CS) MS B	2	2016	2	2016
FWS-CS Engineering and Manufacturing Development	2	2016	2	2018
FWS-CS MS C	3	2018	3	2018
FWS-SNIPER (S) MS B	2	2016	2	2018
FWS-S Engineering and Manufacturing Development	2	2016	2	2018
FWS-S MS C	3	2018	3	2018
STORM Production Qualification Testing (PQT)	2	2015	4	2015
LTLM II Production Qualification Testing (PQT)	1	2016	3	2016
PTD MS B	2	2017	2	2017
PTD Engineering and Manufacturing Development (EMD)	2	2017	3	2019
PTD MS C	4	2019	4	2019
Fused Vision Mobility Device (FVMD) MS B	3	2019	3	2019
Fused Vision Mobility Device Engineering Manufacturing Development (EMD)	3	2019	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L70 / Night Vision Dev Ed			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
L70: Night Vision Dev Ed	-	5.875	21.533	27.696	-	27.696	33.103	27.585	17.326	9.469	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
<p>This project performs Engineering and Manufacturing Development (EMD) on high performance night vision, Reconnaissance, Surveillance, and Target Acquisition (RSTA) systems and other related systems that allow forces to locate and track enemy units in day, night, and all battlefield conditions, and through natural and man-made structures and obscurants. It also develops and integrates suites of these sensors to provide well-defined surveillance and targeting capabilities, as well as architectures for these sensors to communicate automatically. These efforts focus on meeting the requisite night vision and RSTA capabilities required for evolving Current Force, Modular Force, and Future Force systems.</p>												
<p>The project supports the 3rd Generation Improved Forward Looking Infra-Red (3rd GEN (IFLIR)) EMD program, which incorporates the next generation of forward looking infrared technologies. The 3rd GEN (IFLIR) EMD program will leverage critical technology development from the Advanced Thermal Imaging EMD and Combat Vehicle Advanced Sensor Technology (CVAST) effort to develop a common 3rd GEN (IFLIR) B-Kit for integration into US Army FLIR sensor systems in accordance with the approved I-FLIR Capability Development Document (CDD). The common 3rd GEN (IFLIR) B-Kit prescribed by the I-FLIR CDD will allow the Army to achieve economies of scale and avoid duplicative engineering and development costs. As a result, 3rd GEN (IFLIR) capabilities can be delivered at a lower cost to the Abrams, Bradley, reconnaissance systems, and potentially leverage 3rd GEN (IFLIR) components for airborne applications. The 3rd GEN (IFLIR) B-Kit provides Mid Wave Infrared and Long Wave Infrared digital video and the electronic interfaces required to integrate the 3rd GEN (IFLIR) technology with the host platform sensor. This 3rd GEN (IFLIR) technology enhances the war-fighters' survivability and lethality through increased identification range performance when integrated in current sensor packages, while enabling the detection of difficult or obscured targets and faster threat detection through automated processes. The 3rd GEN (IFLIR) B-Kit EMD program is also a key element in maintaining the Army FLIR industrial base.</p>												
<p>This project also executes the Army Sensor Computing Environment (CE) effort which is part of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASA-ALT) Common Operating Environment (COE) program. The Sensor CE effort focuses on increasing network interoperability across the enterprise and improving the Soldier-machine interface. This is done by defining, demonstrating and standardizing Sensor interfaces across the Army networks. Standardized interfaces delivered from this effort will be incorporated into current and future sensor systems and programs.</p>												
<p>FY 2016 Base Funding in the amount of \$27.696 Million supports 3rd GEN (IFLIR) B-Kit EMD and finalization of milestone and contract award activities. Additionally, FY 2016 Base Funding supports the continued activities associated with meeting network interoperability requirements and improving the Soldier-machine interface in support of the Army's vision of the Common Operating Environment (COE).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: 3rd GEN (IFLIR)									5.000	14.230	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L70 / Night Vision Dev Ed		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>Description: Development of the 3rd GEN (IFLIR) B-Kit. The 3rd GEN (IFLIR) B-Kit will represent the materiel solution in accordance with the I-FLIR CDD, resulting in a common sensor component for both Ground and Airborne host platforms.</p> <p>FY 2014 Accomplishments: FY 2014 Base Funding supports 3rd GEN (IFLIR) B-Kit component and platform sensor integration assessments. Funding also supports milestone and solicitation preparation activities.</p> <p>FY 2015 Plans: FY 2015 Base Funding supports Development Request For Proposal Release Review (DRFPRR) and source selection activities. In support of MSB, FY15 funding support will include comprehensive full sight performance trade studies, preparation of logistics documentation, test evaluation master plan documentation, and the program affordability analysis.</p>				
<p>Title: 3rd GEN (IFLIR) Milestone Activities</p> <p>Description: 3rd GEN (IFLIR) engineering and document preparation.</p> <p>FY 2016 Plans: FY 2016 Base Funding supports EMD engineering and logistics document preparation in support of a 2QFY16 Milestone B decision. Support includes preparation of core logistics analysis, system engineering plan, test and evaluation master plan, life cycle sustainment plan, independant logistics assessment.</p>		-	-	6.303
<p>Title: 3rd GEN (IFLIR) B-Kit EMD</p> <p>Description: 3rd GEN (IFLIR) EMD requirements and contract awards.</p> <p>FY 2016 Plans: FY 2016 Base Funding supports source selection activities, award of multiple contracts in support of 3rd GEN (IFLIR), and program management support. Contract awards will support development engineering activities and Preliminary Design Review (PDR).</p>		-	-	16.554
<p>Title: Common Operating Environment (COE)</p> <p>Description: This effort supports the Common Operating Environment vision by improving the network interoperability requirement and the Soldier-machine interface. Resultant improvements to be made on a program by program basis.</p> <p>FY 2014 Accomplishments: FY 2014 Base Funding supports continued development of meeting the network interoperability requirement and improving the Soldier-machine interface. Resultant improvements would be implemented through upgrades to fielded systems, or informing</p>		0.875	7.303	4.839

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>				Project (Number/Name) L70 / <i>Night Vision Dev Ed</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
future programs. This effort continues the Army Sensor Computing Environment (CE) effort in support of the Common Operating Environment (COE) vision. FY 2015 Plans: FY 2015 Base Funding supports continued development of the COE program to include meeting the network interoperability requirement and improving the Soldier-machine interface. Specific FY15 activities include configuration management and specification development and implementation. FY 2016 Plans: FY 2016 Base Funding supports continued development of the COE program to include meeting the network interoperability requirement and improving the soldier-machine interface. Specific FY16 activities include continuation of configuration management, specification development & implementation, and execution of demonstrations and experimentation for transition into Army programs.											
Accomplishments/Planned Programs Subtotals								5.875	21.533	27.696	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• ABRAMS Tank Improvement Program: <i>Abrams Tank Improvement Program (PE 0203735A)</i>	97.901	102.495	77.603	-	77.603	143.636	76.870	62.709	64.193	Continuing	Continuing
• BRADLEY Improvement Program: <i>Bradley Improvement Program (PE 0203735A)</i>	73.642	76.192	73.775	-	73.775	113.999	83.848	57.647	30.846	Continuing	Continuing
• LRAS3 (K38300): <i>Long Range Advanced Scout Surveillance System (LRAS3) (K38300) OPA2</i>	5.183	-	-	-	-	-	-	-	-	-	5.183
Remarks											
D. Acquisition Strategy											
Materiel Development Decision (MDD) received from the Army Acquisition Executive (AAE) and ADM signed 22-Dec-2014 allowing the program to enter the acquisition lifecycle at Milestone B (MSB) as an ACAT II program with the Milestone Decision Authority (MDA) delegated to PEO IEW&S. Remaining Fiscal Year 2015 activities will focus on finalization of contract solicitation, Development Request For Proposal Release Review (DRFPRR), Source Selection activities, and preparation for MSB.											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L70 / <i>Night Vision Dev Ed</i>
<p>Following the MDD/ADM decision, DRFPRR will be conducted to release multiple Requests for Proposals (RFP). Following source selection and MSB approvalthe 3rd GEN (IFLIR) program plans to award multiple competitive, cost plus type Engineering Manufacturing Development (EMD) contracts structured to mitigate technical and industrial base risks. Additional Fiscal Year 2015 activities include continued development of meeting the network interoperability requirement and improving the Soldier-machine interface in support of the Army's vision of the Common Operating Environment (COE).</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L70 / Night Vision Dev Ed					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	C/FP	PM TS : Ft. Belvoir, VA	9.425	0.196	Mar 2014	1.593	Feb 2015	1.623	Feb 2016	-		1.623	-	12.837	9.454
Subtotal			9.425	0.196		1.593		1.623		-		1.623	-	12.837	9.454
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FY 2012-FY 2013: Develop, Fab, and Qual of a common Ground Platform Engine with Block II EOCCM	C/TBD	Various : Various	0.049	-		-		-		-		-	-	0.049	-
3rd GEN (IFLIR) Engineering/Document Prep	C/TBD	Various : Various	8.057	4.004	Mar 2014	11.289	Mar 2015	3.307	Jan 2016	-		3.307	-	26.657	-
3rd GEN (IFLIR) B-Kit EMD	C/CPIF	Various : Various	0.000	-		-		16.554	Mar 2016	-		16.554	-	16.554	-
PSS P3I: CE COE	C/FP	Various : Various	5.634	0.479	Mar 2014	7.103	Mar 2015	4.639	Mar 2016	-		4.639	-	17.855	8.904
Subtotal			13.740	4.483		18.392		24.500		-		24.500	-	61.115	8.904
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
3rd GEN (IFLIR) Support	C/TBD	Various : Various	26.528	0.996	Mar 2014	1.348	Mar 2015	1.373	Mar 2016	-		1.373	-	30.245	27.995
COE Support	C/TBD	Various : Various	0.594	0.200	Mar 2014	0.200	Mar 2015	0.200	Mar 2016	-		0.200	Continuing	Continuing	-
Subtotal			27.122	1.196		1.548		1.573		-		1.573	-	-	27.995

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev						Project (Number/Name) L70 / Night Vision Dev Ed			

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Test Support	MIPR	Various : Various	15.850	-		-		-		-		-	-	15.850	15.850
Subtotal			15.850	-		-		-		-		-	-	15.850	15.850

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	66.137	5.875	21.533	27.696	-	27.696	-	-	62.203

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)														
2040 / 5										PE 0604710A / Night Vision Systems - Eng Dev								L70 / Night Vision Dev Ed														
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
3rd GEN (IFLIR) - Spec Development, Trade Studies, Analyses, & Milestones																																
(1) 3rd GEN (IFLIR) Materiel Development Decision (MDD)					1																											
(2) 3rd GEN (IFLIR) Development Request For Proposal Release Review					2																											
(3) 3rd GEN (IFLIR) B-Kit MSB									3																							
(4) 3rd GEN (IFLIR) EMD/Contract Awards									4																							
3rd GEN (IFLIR) B-Kit EMD																																
3rd GEN (IFLIR) B-Kit - Test & Platform Integration Activities																																
Common Operating Environment, Development																																

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L70 / Night Vision Dev Ed	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
3rd GEN (IFLIR) - Spec Development, Trade Studies, Analyses, & Milestone Prep	1	2012	2	2016
3rd GEN (IFLIR) Materiel Development Decision (MDD)	1	2015	1	2015
3rd GEN (IFLIR) Development Request For Proposal Release Review (DRFPRR)	2	2015	2	2015
3rd GEN (IFLIR) B-Kit MSB	2	2016	2	2016
3rd GEN (IFLIR) EMD/Contract Awards	2	2016	2	2016
3rd GEN (IFLIR) B-Kit EMD	2	2016	2	2022
3rd GEN (IFLIR) B-Kit - Test & Platform Integration Activities	3	2020	2	2022
Common Operating Environment, Development	2	2012	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L75 / Profiler			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
L75: Profiler	-	2.545	3.046	2.108	-	2.108	4.129	3.897	3.601	3.744	-	23.070
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Profiler provides meteorological (MET) wind speed, wind direction, temperature, barometric pressure, and humidity information required for use in the Advance Field Artillery Tactical Data System (AFATDS). All of these are required for precise targeting and terminal guidance. Profiler uses a numerical mesoscale weather model to build a four-dimensional MET model (height, width, depth, and time) that includes terrain effects to cover an operational area of 500 kilometers. By providing more accurate MET messages, Profiler will enable the artillery to have a greater probability of a first round hit with indirect fire systems. This capability increases the lethality of field artillery systems such as the Multiple Launch Rocket System (MLRS), Paladin, self-propelled or towed howitzers, and mortars. Analysis determined that Profiler Block I satisfied the requirements of Profiler Block II leading to a decision to proceed directly to Profiler Block III. The Profiler Block I used a ground tactical meteorological (TACMET) sensor and MET data from the Air Force Weather Agency (AFWA) broadcast over communications satellites with the weather model to provide highly accurate MET data covering 60 kilometers. Profiler Block III replaces Profiler Block I and provides a networked laptop configuration that enhances system efficiencies and reduces the system's operational and logistics footprint with the elimination of support vehicles, trailers, external sensors and was tested out to the range of 500 kilometers. The Profiler Block III configuration consists of one computer with a common operating system co-located within the tactical Command Post (CP) with a direct interface to the CP local area network (LAN). The Profiler Virtual Module system can function in a manual or automatic mode allowing for an operator to manually create MET messages or for MET to be automatically generated in response to requests from any connected AFATDS computer. A significant Operations and Support cost is realized through this improved configuration. The Profiler Virtual Module will address emerging requirements and system long-term software sustainment challenges. The Profiler Virtual Module concept includes the following updates: update of the MET weather model which enables the use of Gridded Binary Version 2 data; update of software architecture removing legacy Block I code and creating a modular framework; development in conjunction with the AFATDS program, including AFATDS version II, to provide increased interoperability and usability; and to enable operation of the Profiler system in a virtual machine for use in the Common Operating Environment (COE) versions 2,3,4 and 5. This concept is a flexible approach that supports use of existing Block III hardware, increased accuracy during technical refresh of hardware with higher performance computers, and virtualization on the Command Post Computing Environment (CP CE) server.

FY2016 Base funding in the amount of \$2.108 million supports the development and coding of requirements for Profiler Virtual Module Common Operating Environment (COE) Version 2 in support of Command Post Computing Environment (CP CE). Includes conversion of the MET model for Profiler Virtual Module and support for the implementation of Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms. Formal Qualification Testing/Developmental Testing (FQT/DT) and Management Services will be required in FY16.

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

	FY 2014	FY 2015	FY 2016
Title: Profiler Virtual Module development	2.545	-	-
Description: Profiler Virtual Module provides software architecture to create a modular framework.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L75 / Profiler		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: Profiler Virtual Module development				
Title: Profiler Virtual Module COE V2/3 development Description: Implementation of COEV2/3 requirements and Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms.		-	1.946	1.058
FY 2015 Plans: Implementation of COEV2 requirements and Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms.				
FY 2016 Plans: Implementation of COEV3 requirements and Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms.				
Title: Support cost for conversion of the MET model for Profiler Virtual Module Description: Conversion of the MET model for Profiler Virtual Module		-	0.500	0.500
FY 2015 Plans: Conversion of the MET model for Profiler Virtual Module and support for the implementation of Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms.				
FY 2016 Plans: Conversion of the MET model for Profiler Virtual Module and support for the implementation of Digital Terrain and Elevation Data (DTED) upgrades and improved elevation algorithms.				
Title: Formal Qualification Testing/Developmental Testing (FQT/DT) Description: FQT/DT		-	0.400	0.400
FY 2015 Plans: Formal Qualification Testing/Developmental Testing (FQT/DT)				
FY 2016 Plans: Formal Qualification Testing/Developmental Testing (FQT/DT)				
Title: Management Services		-	0.200	0.150

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>			Project (Number/Name) L75 / <i>Profiler</i>					
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016		
Description: Cost for Project Management											
FY 2015 Plans: Project Management											
FY 2016 Plans: Project Management											
Accomplishments/Planned Programs Subtotals							2.545	3.046	2.108		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Profiler (K27900): <i>Profiler (K27900)</i>	3.027	3.115	4.057	-	4.057	0.563	0.376	-	-	-	11.138
Remarks											
D. Acquisition Strategy											
<p>The Profiler Block III acquisition strategy decision brief to the Milestone Decision Authority (MDA) was presented in January 2010. The Acquisition Decision Memorandum (ADM) authorizing initiation of Profiler Block III was signed by the MDA on 23 February 2010. A limited competitive Firm-Fixed Price (FFP)/Cost Plus Fixed Fee (CPFF) contract was awarded via the Strategic Services Sourcing (S3) contract to build, test and deliver the Block III software to support eight (8) Profiler Block III Production Representative Prototype Systems (PRPS). The Block III program is on schedule and entered production and fielding in the first quarter of FY13.</p> <p>The revised Profiler Acquisition Strategy was approved by the MDA on 28 March 2012 for a product improvement to the Profiler Block III for a Virtual Module supporting the Command Post Computing Environment of the Common Operating Environment (COE).</p>											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L75 / Profiler					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	Allot	PM Terrestrial Sensors : Various	2.623	0.270	Mar 2014	0.200	Nov 2014	0.150	Nov 2015	-		0.150	Continuing	Continuing	Continuing
Subtotal			2.623	0.270		0.200		0.150		-		0.150	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Award efforts for s/w porting to laptop	C/FP	Mantech : Red Bank, NJ	5.495	-		-		-		-		-	-	5.495	-
Initiate backup sensor effort	Various	Army Research Lab : various	1.191	-		-		-		-		-	-	1.191	-
Profiler Virtual Module SW development and data gathering	MIPR	SEC, FSED : Ft. Sill, Oklahoma	0.000	1.785	Mar 2014	-		-		-		-	Continuing	Continuing	-
Profiler Virtual Module COE V2/3/4 development and data gathering	MIPR	SEC, FSED : Ft. Sill, Oklahoma	0.000	-		1.946	Apr 2015	1.058	Apr 2016	-		1.058	Continuing	Continuing	-
Subtotal			6.686	1.785		1.946		1.058		-		1.058	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	CECOM : Aberdeen, MD	3.015	-		-		-		-		-	-	3.015	-
Sys Engr/Technical Assistance	MIPR	Various : Various	1.917	-		-		-		-		-	-	1.917	-
Conversion of MET model for Profiler Virtual Module	MIPR	ARL, Various : WSMR, NM	1.267	0.490	Mar 2014	0.500	Mar 2015	0.500	Mar 2016	-		0.500	Continuing	Continuing	Continuing
Subtotal			6.199	0.490		0.500		0.500		-		0.500	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>				Project (Number/Name) L75 / <i>Profiler</i>					

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Planning and Preparation	Various	ATEC, Various, CECOM, PRD, : Dir, APG, MD	1.557	-		-		-		-		-	-	1.557	-
Formal Qualification Test/ Developmental Test and test ramp up activities	MIPR	ATEC : Various	0.000	-		0.400	Jul 2015	0.400	Jul 2016	-		0.400	Continuing	Continuing	Continuing
Limited User Test	MIPR	ATEC, : Various	1.552	-		-		-		-		-	-	1.552	-
Conduct Block III Austere Testing	MIPR	ARL, ATEC, : Aberdeen Proving Ground, MD	0.339	-		-		-		-		-	-	0.339	-
Subtotal			3.448	-		0.400		0.400		-		0.400	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.956	2.545		3.046		2.108		-		2.108	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																				Date: February 2015									
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)									
2040 / 5										PE 0604710A / Night Vision Systems - Eng Dev										L75 / Profiler									
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Profiler Block III Fielding																													
Profiler Virtual Module SW development and data gathering																													
Profiler Virtual Module COE V2 in support of CP CESW development																													
Formal Qualification Test/Developmental Test																													
Profiler Virtual Module COE V2 in support of CP CE, System Integration																													
Profiler Virtual Module COE V2 in support of CP CE, FQT Delta test																													
Profiler Virtual Module Baseline Fielding																													
Tech Refresh																													
Profiler Virtual Module COE V2 and AFATDS V2(7.0) fielding																													
PVM COE V3 and AFATDS V2(7.1) in support of CPCE SW development																													
Profiler Virtual Module COEV3 and AFATDS V2(7.1) fielding																													
PVM COE V4 and AFATDS V2(7.1) in support of CPCE SW development																													
Profiler Virtual Module COE V4 and AFATDS V2(7.1) fielding																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																		Date: February 2015										
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>								Project (Number/Name) L75 / <i>Profiler</i>										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PVM COE V5 and AFATDS V2(7.2) in support of CPCE SW developme																					<div style="background-color: blue; color: black; padding: 2px;"> CPCE SW develop and data gathering </div>							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L75 / <i>Profiler</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Profiler Block III Fielding	1	2013	4	2014
Profiler Virtual Module SW development and data gathering	1	2014	4	2014
Profiler Virtual Module COE V2 in support of CP CESW development	1	2015	4	2015
Formal Qualification Test/Developmental Test	4	2015	4	2015
Profiler Virtual Module COE V2 in support of CP CE, System Integration Lab Test	1	2016	1	2016
Profiler Virtual Module COE V2 in support of CP CE, FQT Delta test	1	2016	2	2016
Profiler Virtual Module Baseline Fielding	1	2015	4	2015
Tech Refresh	4	2015	2	2016
Profiler Virtual Module COE V2 and AFATDS V2(7.0) fielding	2	2016	2	2017
PVM COE V3 and AFATDS V2(7.1) in support of CPCE SW development and test	2	2016	3	2017
Profiler Virtual Module COEV3 and AFATDS V2(7.1) fielding	4	2017	4	2018
PVM COE V4 and AFATDS V2(7.1) in support of CPCE SW development and test	4	2017	1	2019
Profiler Virtual Module COE V4 and AFATDS V2(7.1) fielding	2	2019	2	2020
PVM COE V5 and AFATDS V2(7.2) in support of CPCE SW development and test	2	2019	3	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L76 / Dismounted Fire Support Laser Targeting Systems			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
L76: Dismounted Fire Support Laser Targeting Systems	-	0.063	4.912	4.662	-	4.662	6.047	6.321	14.651	5.390	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project matures technologies and capabilities which benefit the Lightweight Laser Designator Rangefinder (LLDR, AN/PED-1, AN/PED-1A, and AN/PED-1B), Joint Effects Targeting System (JETS), and other precision targeting systems. These precision targeting and next generation systems are used by dismounted Soldiers to locate, identify, and target enemy assets. This project focuses on reducing weight, improving imaging performance, and increasing targeting accuracy. Targeting accuracy improvements will focus on developing and integrating affordable, non-magnetic, high accuracy, full-time (24/7), and all weather Azimuth and Vertical Angle Measurement (AVAM) devices, with reduced size, weight, and power characteristics into the LLDR system. Long term goals include developing precision targeting capabilities that will operate in a Global Positioning System (GPS) denied environment, and integration of M-Code GPS (next-generation GPS) receivers into LLDR and JETS when available.

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

	FY 2014	FY 2015	FY 2016
Title: Azimuth and Vertical Angle Measurement (AVAM) development	0.063	4.312	4.062
Description: AVAM is a non-magnetic based inertial navigation materiel solution for targeting devices. This AVAM effort improves azimuth accuracy leading to reduced collateral damage and improved target engagement. Celestial navigation systems provide a supplemental high accuracy, low cost azimuth measurement capability in order to provide 24/7 precision target capability.			
FY 2014 Accomplishments: Funded the development of emerging smaller, lightweight, low cost precision AVAMs that can be integrated with the Lightweight Laser Designator Rangefinder (LLDR) and Joint Effects Targeting System (JETS).			
FY 2015 Plans: Continue funding the development of improved precision AVAM devices and the development of better celestial navigation systems for application to the LLDR and the Joint Effects Targeting System (JETS), and fund the investigation of integration of emerging high accuracy capabilities into the current portfolio of targeting systems.			
FY 2016 Plans: Continue funding the development of an improved precision AVAM integrated with the LLDR. Initiate the development of celestial navigation systems with improved operational availability for application to the LLDR and the JETS.			
Title: Laser development	-	0.500	0.500

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>				Project (Number/Name) L76 / <i>Dismounted Fire Support Laser Targeting Systems</i>				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Description: Development of lightweight, low cost, multi-spectral, and more efficient lasers. FY 2015 Plans: Continue funding of development of lightweight, low-cost, multi-spectral, and more efficient lasers. FY 2016 Plans: Continue funding of development of lightweight, low-cost, multi-spectral, and more efficient lasers.												
Title: Target Acquisition Development Description: Focuses on development of improvements to optical detection, recognition, and identification of targets for precision targeting systems. FY 2015 Plans: Initiate improvements to imaging performance, recognition, and identification of targets. FY 2016 Plans: Continue improvements to imaging performance, recognition, and identification of targets.										-	0.100	0.100
Accomplishments/Planned Programs Subtotals										0.063	4.912	4.662
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• LLDR Mod-of-In-Service (SSN KA3100): <i>Lightweight Laser Designator Rangefinder (LLDR) Modification-of-In-Service (SSN KA3100)</i>	38.037	14.085	22.314	-	22.314	22.863	28.387	31.946	50.315	Continuing	Continuing	
• JETS (SSN K32101): <i>Joint Effects Targeting System (JETS) (SSN K32101)</i>	-	-	47.212	-	47.212	51.110	48.857	43.493	73.587	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
This project continues to exercise competitively awarded contracts using best value source selection procedures.												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L76 / Dismounted Fire Support Laser Targeting Systems
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L76 / Dismounted Fire Support Laser Targeting Systems					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	PM-SSL : Ft. Belvoir VA 22060	0.000	0.007	May 2014	0.100	Feb 2015	0.050	Dec 2015	-		0.050	-	0.157	-
Subtotal			0.000	0.007		0.100		0.050		-		0.050	-	0.157	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AVAM Development and Integration	TBD	Various : TBD	0.000	0.056	May 2014	4.212	Feb 2015	3.402	Nov 2015	-		3.402	Continuing	Continuing	-
Laser Development	TBD	Various : TBD	0.000	-		0.500	Feb 2015	0.500	Nov 2015	-		0.500	Continuing	Continuing	-
Target Acquisition Development	TBD	Various : TBD	0.000	-		0.100	Feb 2015	0.100	Nov 2015	-		0.100	Continuing	Continuing	-
Subtotal			0.000	0.056		4.812		4.002		-		4.002	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various : Various	0.000	-		-		0.060	Jan 2016	-		0.060	Continuing	Continuing	-
Science and Engineering Support	SS/CPFF	Johns Hopkins University : Laurel, MD	0.000	-		-		0.550	Jan 2016	-		0.550	Continuing	Continuing	-
Subtotal			0.000	-		-		0.610		-		0.610	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.063		4.912		4.662		-		4.662	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L76 / <i>Dismounted Fire Support Laser Targeting Systems</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Azimuth and Vertical Angle Measurement (AVAM) Development and Integration																												
(1) LLDR 24/7 AVAM Production Cut-in																	1								2			
(2) LLDR GPS denied capability Production cut-in																												
Improved Laser Development and Integration																												
(3) Improved LLDR Laser cut-in																	3											
Improved Target Acquisition Development and Integration																												
(4) Improved LLDR Target Acquisition cut-in																	4											
Competitive Development of Improved LLDR Prototype																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L76 / <i>Dismounted Fire Support Laser Targeting Systems</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Azimuth and Vertical Angle Measurement (AVAM) Development and Integration	2	2014	4	2021
LLDR 24/7 AVAM Production Cut-in	2	2018	2	2018
LLDR GPS denied capability Production cut-in	2	2020	2	2020
Improved Laser Development and Integration	2	2014	4	2021
Improved LLDR Laser cut-in	2	2018	2	2018
Improved Target Acquisition Development and Integration	1	2015	4	2021
Improved LLDR Target Acquisition cut-in	2	2018	2	2018
Competitive Development of Improved LLDR Prototype	2	2019	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
L79: Joint Effects Targeting Systems (JETS)	-	28.377	20.559	11.020	-	11.020	7.344	8.030	10.686	7.980	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Joint Effects Targeting System (JETS) is an Army program with joint interest (Air Force and Marine Corps). JETS will meet the one-man, hand-held precision targeting gap identified by the Fire Center of Excellence (FCOE). JETS is a light-weight, handheld system that will provide the single dismounted observer and Joint Terminal Attack Controller (JTAC) with a common, enhanced day and night thermal capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. JETS Target Location and Designation System (TLDS) will be able to interface with existing and future Service Forward Entry Systems (FESs).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Joint Effects Targeting System (JETS) Engineering and Manufacturing Development (EMD)									27.395	17.735	9.605	
Description: JETS is a lightweight mission equipment set for the dismounted forward observers and Joint Terminal Attack Controllers (JTAC). JETS provides observers and controllers the means to call for fire and control delivery of air, ground and naval surface fire support, including using precision munitions and effects (both lethal and non-lethal).												
FY 2014 Accomplishments: Continued EMD. Will complete initial build of up to 30 prototypes and begin contractor qualification testing. Will develop supportability products and initiate production planning.												
FY 2015 Plans: Continue EMD phase activities with two prime contract vendors, including build of prototypes, contractor testing, government testing of prototypes, and refine supportability and production planning.												
FY 2016 Plans: Complete EMD phase by refurbishing EMD prototypes and implementing corrective actions following Government Developmental Testing. Will also fund Initial Operational Testing and Evaluation.												
Title: Azimuth and Vertical Angle Measurement (AVAM) Development									0.962	2.824	1.415	
Description: Focuses on improvements to azimuth accuracy by use of inertial navigation solutions (non-magnetic) for advanced precision AVAM solutions to provide high accuracy full-time (24/7) target location as well as celestial navigation systems that provide lightweight and low cost part-time precision AVAM for target location.												
FY 2014 Accomplishments:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L79 / <i>Joint Effects Targeting Systems (JETS)</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Funded the development of precision AVAM and risk mitigation, and the development of improved celestial navigation systems.			
FY 2015 Plans: Fund the development of precision AVAM and risk mitigation, and funds the development of improved celestial navigation systems, and explore the integration of both forward observer application to the JETS.			
FY 2016 Plans: Fund the development of low size, weight, power, and cost precision AVAM for future integration into JETS. Continue the development of improved celestial navigation systems, and analyze the integration of both improvements to the JETS design for incorporation as an Engineering Change Proposal (ECP).			
Title: Laser Development	0.020	-	-
Description: Focuses on development of lightweight, low-cost, multi-spectral, and more efficient lasers.			
FY 2014 Accomplishments: Initiated government engineering efforts to develop lasers with lower size, weight, power, and cost.			
Accomplishments/Planned Programs Subtotals	28.377	20.559	11.020

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Joint Effects Targeting	-	-	47.212	-	47.212	51.110	48.857	43.493	73.587	Continuing	Continuing
System: <i>Joint Effects Targeting System (SSN K32101)</i>											
Remarks											
D. Acquisition Strategy This project continues to exercise competitively awarded contracts using best value source selection procedures.											
E. Performance Metrics N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	PM-SSL : Ft Belvoir, VA 22060	0.680	0.565	Oct 2013	1.472	Feb 2015	0.342	Jan 2016	-		0.342	-	3.059	-
Subtotal			0.680	0.565		1.472		0.342		-		0.342	-	3.059	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AVAM Development	C/T&M	A-Tech Corp : Albuquerque, NM 87123	8.545	-		-		-		-		-	Continuing	Continuing	-
AVAM Development 2	C/T&M	Various : Various	0.000	0.962	Mar 2014	2.824	Feb 2015	1.415	Nov 2015	-		1.415	Continuing	Continuing	-
JETS TLDS EMD prototype development, integration, and test - Contractor BAE	C/CPFF	BAE Systems Information and Electronics : Nashua NH 03060-6909	7.800	11.688	Mar 2014	6.557	Feb 2015	3.960	Nov 2015	-		3.960	Continuing	Continuing	-
JETS TLDS EMD prototype development, integration, and test - Contractor DRS	C/CPFF	DRS RSTA, Inc : Dallas TX 75243	7.500	11.940	Mar 2014	6.558	Feb 2015	3.960	Nov 2015	-		3.960	Continuing	Continuing	-
Laser Development	C/T&M	Various : Various	0.000	0.418	Mar 2014	-		-		-		-	Continuing	Continuing	-
Subtotal			23.845	25.008		15.939		9.335		-		9.335	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Night Vision Electronics Sensors Directorate : Ft. Belvoir	8.679	1.635	Jan 2014	1.419	Feb 2015	0.343	Jan 2016	-		0.343	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Science and Engineering Support	SS/CPFF	Johns Hopkins University : Laurel, MD	0.914	1.035	Jan 2014	0.600	Feb 2015	0.500	Jan 2016	-		0.500	-	3.049	-
Subtotal			9.593	2.670		2.019		0.843		-		0.843	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	Various : Various	0.718	0.134	Feb 2014	1.129	Mar 2015	0.500	Mar 2016	-		0.500	Continuing	Continuing	-
Subtotal			0.718	0.134		1.129		0.500		-		0.500	-	-	-
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			34.836	28.377	20.559		11.020		-		11.020	-	-	-	
Remarks															

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604710A / Night Vision Systems - Eng Dev

Project (Number/Name)

L79 / Joint Effects Targeting Systems (JETS)

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Engineering & Manufacturing Development																												
(1) JETS TLDS MS C																												
Improve SWAP-C AVAM Development and Integration																												
(2) SWAP-C AVAM cut-in																												
LRIP																												
(3) FMR																												
FRP																												
(4) IOC																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L79 / <i>Joint Effects Targeting Systems (JETS)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Engineering & Manufacturing Development	2	2013	2	2016
JETS TLDS MS C	2	2016	2	2016
Improve SWAP-C AVAM Development and Integration	3	2016	4	2020
SWAP-C AVAM cut-in	2	2020	2	2020
LRIP	2	2016	2	2018
FMR	2	2018	2	2018
FRP	2	2018	1	2023
IOC	2	2018	2	2018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.874	3.034	1.763	-	1.763	2.466	2.608	2.430	2.457	Continuing	Continuing
548: Mil Subsistence Sys	-	1.874	3.034	1.430	-	1.430	0.961	0.550	0.652	1.319	Continuing	Continuing
EL2: Army Field Feeding Equipment	-	-	-	0.333	-	0.333	1.505	2.058	1.778	1.138	-	6.812

Note

FY16: Funds realigned to higher priority Army Programs. The FY 2016 funding request was reduced by \$.463 million to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through fielding and integrating new equipment; by enhancing the field soldier's well-being; and providing soldier usable equipment. They also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

This PE/Project supports Field Feeding programs for all the services.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	1.938	1.335	2.239	-	2.239
Current President's Budget	1.874	3.034	1.763	-	1.763
Total Adjustments	-0.064	1.699	-0.476	-	-0.476
• Congressional General Reductions	-0.064	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	1.699			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.476	-	-0.476

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment				Project (Number/Name) 548 / Mil Subsistence Sys			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
548: Mil Subsistence Sys	-	1.874	3.034	1.430	-	1.430	0.961	0.550	0.652	1.319	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance Soldier efficiency and survivability, and to reduce food service logistics requirements for all four services. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through fielding and integrating new equipment; by enhancing the field Soldier's well-being; and providing Soldier usable equipment. They also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.												
This PE/Project supports Field Feeding programs for all the services.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Containerized Kitchen Modernization (CK)									0.380	0.312	-	
Description: New Containerized Kitchen layout with modular, closed combustion, thermostatically controlled appliances that reduce heat stress inside the kitchen												
FY 2014 Accomplishments: Mitigated the effects of CK generator obsolescence through the expedited integration of the Advanced Medium Mobile Power Source (AMMPS). Awarded contract for the design and integration of the AMMMPS into legacy CKs. Drafted modification work order to capture design baseline and find costs, level of effort to modify CK fleet with AMMPS												
FY 2015 Plans: Upgrade the Containerized Kitchen with improved layout, appliances, ventilation and power generation for improved energy efficiency and operator environment. Use completed initial design to integrate the Advanced Medium Mobile Power Source (AMMPS) into the CK. Perform testing to validate generator interface, interoperability and performance with the CK. Develop technical data to support required Engineering Change Proposal to current system.												
Title: Fielded Individual Ration Improvement Project (FIRIP)									0.150	0.430	0.299	
Description: Continuous product improvement project for the Meal Ready to Eat (MRE)												
FY 2014 Accomplishments:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Based on field test results, presented recommendations to Joint Services (2Q14) for continued product improvement of ration components/packaging/technologies for MRE (2016 DOP). Finalized MRE procurement documents and initiated transition to Defense Logistic Agency (DLA) Troop Support. Obtained Surgeon General approval of revised MRE menus. Executed production testing with industry to ensure consistent ration quality, understand PCR requirements, and resolved vendor/supplier issues. Obtained and assembled selected new items for field test. Conducted field evaluation of new candidate ration components for MRE (2017 DOP) to improve quality, acceptability, nutrition and expand variety.</p> <p>FY 2015 Plans: Based on field test results, present recommendations to Joint Services (2Q15) for continued product improvement of ration components/packaging/technologies for MRE (2017 DOP). Finalize MRE procurement documents and initiate transition to DLA-TS. Obtain Surgeon General approval of revised MRE menus. Execute production testing with industry to ensure consistent ration quality, understand Project Change Request (PCR) requirements, and resolve vendor/supplier issues. Obtain and assemble selected new items for field test. Conduct field evaluation of new candidate ration components for MRE (2018 DOP) to improve quality, acceptability, nutrition and expand variety.</p> <p>FY 2016 Plans: Based on Budget Activity 4 (BA4) Joint Service approvals, finalize MRE procurement documents and standards for verification for MRE (2018 DOP) and initiate transition to DLA-Troop Support. Obtain Surgeon General approval of revised MRE menus. Execute production testing with industry to ensure consistent ration quality, understand PCR requirements, resolve vendor/supplier issues, and conduct confirmatory sensory, chemical, physical and shelf life testing.</p>			
<p>Title: Assault/Special Purpose Ration Improvement Project (ASPIP)</p> <p>Description: Continuous product improvement of special purpose rations by the insertion of new technologies in nutrition, processing and packaging.</p> <p>FY 2014 Accomplishments: Continued on-going shelf life studies of candidate Meal, Cold Weather/Long-Range Patrol and Modular Operational Ration Enhancement components and updated procurement documents for transition to Defense Logistics Agency Troop Support.</p> <p>FY 2015 Plans: Continue on-going shelf life studies of candidate Meal, Cold Weather/Long-Range Patrol and Modular Operational Ration Enhancement components and updated procurement documents for transition to Defense Logistics Agency Troop Support (DLA-TS).</p> <p>FY 2016 Plans:</p>		0.101	0.175
		0.080	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Plan field evaluation of new ration components for FSR. Present recommendations to Joint Services (2Q16) for continued product improvement of ration components/packaging/technologies for First Strike Ration (FSR). Obtain Surgeon General approval for the nutritional content of revised menus and components.			
Title: Fielded Group Ration Improvement Project (FGRIP) Description: Continuous product improvement project to continuously update/improve group ration components, menus, and packaging by integrating state-of-the-art military/commercial packaging and technology base transitions. FY 2014 Accomplishments: Based on Warfighter testing, presented results/recommendations to Joint Services for Unitized Group Ration Heat and Serve (UGR-H&S/E) (2015 DOP). Presented UGR-A results/recommendations to the UGR Integrated Product Team for FY15 menus. Updated/coordinated menus and obtained Surgeon General approval. Provided assistance to DLA Troop Support for Limited First Article production testing of newly approved UGR-H&S/E items. Finalized UGR procurements documents for transition to DLA - Troop Support. FY 2015 Plans: Complete field testing of UGR-H&S/E (2016/17 DOP) and UGR-A (FY17 menus) to improve quality, nutritional intake and expand variety. Finalize UGR procurement documents for transition to DLA-TS. FY 2016 Plans: Based on BA4 Joint Service approvals, finalize UGR (A, H&S, E) procurement documents and standards for verification and initiate transition to DLA-Troop Support. Obtain Surgeon General approval of revised UGR menus. Support DLA-Troop Support Limited First Article production testing of new H&S and E items with industry to ensure consistent ration quality, understand PCR requirements, resolve vendor/supplier issues, and conduct confirmatory sensory, chemical, physical and shelf life testing.		0.165	0.356
Title: Group Ration Airdrop Survivability Project (GRASP) Description: Quantify baseline airdrop performance characteristics for current group combat ration (UGR-H&S/M/E) configurations/designs; identify survival rates (based on caloric loss and packaging damage/loss) under defined operational conditions; provide knowledge base and supporting data to generate executable load configuration changes; identify capability gaps that might warrant product/package/assembly configuration redesign and reengineering. FY 2015 Plans:		-	0.072
			-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment	Project (Number/Name) 548 / Mil Subsistence Sys		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Extensive airdrop testing to determine UGR components, packaging and assembly configurations with the highest survival rates. Perform cost/benefit analysis of current vs. proposed reconfigurations. Transition updated technical data to DLA-Troop Support and Airdrop partners.				
<p>Title: Navy Shipboard Galleys</p> <p>Description: Provide continuous Research and Development (R&D) for Navy Shipboard Galleys for state-of-the-art Galley designs and equipment technologies; support Naval Supply Systems Command (NAVSUP) foodservice equipment standardization plan; integrate automated technology such as, prognostics, diagnostics, and reliability tracking</p> <p>FY 2014 Accomplishments: Identified requirements and metrics for Galley refrigeration assets and procured commercial equipment. Conducted evaluations on commercial refrigeration capability under simulated Navy afloat operations against established requirements metrics.</p> <p>FY 2015 Plans: Conduct in-house test and evaluation of equipment prioritized by Navy; Instrument equipment for reliability evaluations and support for ship board evaluations; transition reports to NAVSUP/NAVSEA. Procure, test and evaluate a hydroponic system to grow fresh produce aboard ballistic submarines for increased quality of life and nutrition for submarine Sailors.</p> <p>FY 2016 Plans: Preliminary Design Review/Critical Design Review (PDR/CDR) reviews; Instrument equipment for Condition-Based Maintenance; Conduct T&E of modified COTS equipment in accordance with NAVSEA test criteria; Complete at-sea user evaluations and technical data package for transition to Navy;</p>		0.183	0.310	0.290
<p>Title: Integrated Thermal Control into Modern Burner Unit (MBU)</p> <p>Description: Imbed a thermostatic control within the MBU to allow the kitchen appliance temperature to be regulated at a set temperature by cycling the MBU on and off automatically.</p> <p>FY 2014 Accomplishments: Conducted Operational Testing (OT) on prototype. Based on a successful evaluation and concurrence from the customer, CASCOM, a new National Stock Number (NSN) for the integrated MBU was assigned for procurement through DLA Troop Support.</p>		0.240	-	-
<p>Title: Armed Forces Recipe Service</p>		-	0.600	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Description: Demonstrate and validate standardized recipes to be utilized by the Services in food service and operational settings. Develop and deliver specifications to the Armed Forces Recipe Committee for approval. Specifications will populate the Armed Forces Management Information System (AFMIS), a system utilized by all DoD Components. FY 2015 Plans: Complete transition to new recipe development/nutritional analysis software. Conduct nutritional analysis of deliverables. The output of this project facilitates implementation of nutritional initiatives such as Go for Green and Healthy Base Initiative.			
Title: Joint Services Refrigerated Container System Description: To develop and field a highly expandable, highly efficient TriCon refrigerated container system that utilizes adaptable advanced technologies (i.e. smart power metering, novel insulation, polychromatic coatings, composites, and alternate energy sources) to enable the safe/proper storage of perishable group rations in forward deployed areas. FY 2014 Accomplishments: Conducted Developmental Testing at Aberdeen Proving Grounds (APG). Conducted User Evaluations with all Services.		0.151	-
Title: Basic Expeditionary Airfield Resources (BEAR) Kitchen System Enhancements (BEAR-KSE) Description: The BEAR-KSE will evaluate multifunction appliances, reduce pallet positions, and develop TriCon and BiCon packing plans to meet the Air Forces transportability requirements of 30% by air and 70% by land, sea, and rail. FY 2014 Accomplishments: Completed in-house evaluation of the food service equipment, which met Air Force requirements for a lighter, leaner, more rapidly deployable system. Developed 3-D models and conduct pack-out assessments to support transportability requirements of 30% by air and 70% by land, sea, and rail. Transitioned data to PM-BEAR		0.294	-
Title: Autonomous Shipboard Cleaning System Description: Provides an automated dishwashing system that alleviates the manual labor involved in dishwashing and reduces manning requirements for future Navy platforms. FY 2014 Accomplishments: Finalized development of prototype developed under Phase II under the Phase III development effort. Documented results of FY14 land-based testing at Natick Soldier Research Development and Engineering Center (NSRDEC). Identified if need for		0.210	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment	Project (Number/Name) 548 / Mil Subsistence Sys		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
additional testing exists. Performed enhanced simulation testing and demonstrations of the upgraded prototypes at Naval Surface Warfare Center's test facilities.				
Title: Block Upgrades and Operational Improvements for Expeditionary Field Feeding Equipment Description: Eliminate the sole sourcing of tray ration heater component parts. Reduce overall water consumption through the use of non-immersive cooking technologies and more efficient ware-washing equipment. Increase Kitchen flexibility through appliance upgrades. To reduce the overall fuel consumption of Expeditionary Field Feeding Equipment by minimizing the production of and making use of the waste heat produced through JP-8 combustion. FY 2015 Plans: Conduct root cause failure analysis on Modernized Tray Ration Heater (MTRHS) prototype. Conduct operational test and evaluation on field feeding equipment. Complete approved Engineering Changes to upgrade the capability of the Expeditionary Field Kitchen.		-	0.320	-
Title: Support to Air Force Field Feeding Modernization Efforts Description: Provide continuous R&D efforts for all Expeditionary Air Force squadrons. Modernize and standardize field foodservice equipment to reduce labor, maintenance, pack-out volume and cost. Increase reliability, efficiency and sustainability. Develop comprehensive specifications and technical data packages for recommended Food Service Equipment (FSE) items; test and evaluate newer commercial FSE items for expeditionary use and smaller transportation footprint; develop total overall life cycle cost of each system; test Energy Star certified FSE items that use less power; and investigate/develop appliances that use less water, increase competition on standardized designs FY 2015 Plans: Provide continuous R&D efforts for all Expeditionary Air Force squadrons. Increase reliability, efficiency and sustainability. Provide operational test and evaluation support to the BEAR community to develop or edit equipment purchase descriptions, participate in source selection evaluations, provide technical documents to support the contract award process and participate in the design reviews. FY 2016 Plans: Complete preliminary design review (PDR); Initiate BEAR Kitchen Final Design Review; Conduct user Test & Evaluation of proposed equipment; Draft technical test reports and provide to Air Force for review.		-	0.240	0.306
Title: Joint Inter-service Field Feeding Burner		-	0.169	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>				Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016
Description: Develop, demonstrate and validate a Joint-Service, government owned JP-8 burner for field kitchen appliances. Government will control configuration, procurement, and support decisions. Establishment of a Commercial Off The Shelf (COTS) parts list using widely supportable supply chain in field operations.											
FY 2015 Plans: Build beta units; prepare Tech Data Package; test units in a high fidelity, realistic operating environment and conduct Integrated Logistic Support (ILS) validation. Transitional information appropriately.											
Title: Navy Food Storage Analysis Tool									-	0.050	0.285
Description: Software analysis tool for Navy Foodservice that will automatically calculate all storage space factors and requirements for naval vessels based off the specific Navy Standard Core Menu (NSCM), crew size, Naval Ship's Technical Manual 096, Weights and Stability, Naval Vessel Requirements Food Service Facility Design Manual, Build Specifications 671, 672, and Type Commander established endurance levels; Will develop automated subsistence inventory management, tracking and storeroom locations for all storage areas with mobile scanning technology capability;											
FY 2015 Plans: Expand NFSAT capabilities to include Landing Platform Docking (LPD) amphibious warfare ship class and the Littoral Combat Ship (LCS) class.											
FY 2016 Plans: Complete Alpha version of Navy subsistence inventory management software; and Conduct test and evaluation of Alpha version of the software											
Accomplishments/Planned Programs Subtotals									1.874	3.034	1.430
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDT&E 643747.610: <i>Food Adv Dev 643747.610</i>	5.013	3.480	0.021	-	0.021	5.598	6.803	5.043	4.713	Continuing	Continuing
• RDT&E 643747.EL1: <i>Army Field Feeding Programs</i>	-	-	0.280	-	0.280	1.974	0.452	-	0.509	Continuing	Continuing
• RDT&E 654713.EL2: <i>Army Field Feeding Equipment</i>	-	-	0.333	-	0.333	1.505	2.058	1.778	1.138	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment				Project (Number/Name) 548 / Mil Subsistence Sys			
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPA M65806: Assault Kitchen, Field Feeding M65806	0.423	4.889	3.632	-	3.632	5.167	4.660	4.165	4.605	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Complete Engineering and Manufacturing Development (EMD) and Demonstration of food items and equipment for transition into competitive procurement contract. Complete advanced research efforts to support Engineer Change Proposals for previously developed equipment.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment				Project (Number/Name) 548 / Mil Subsistence Sys					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CFP Management	C/FP	RDECOM : Natick, MA	2.197	0.233	Apr 2014	0.164		0.233		-		0.233	-	2.827	Continuing
SBIR+STTR	TBD	Various : Various	0.064	-		-		-		-		-	-	0.064	-
Subtotal			2.261	0.233		0.164		0.233		-		0.233	-	2.891	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various combat feeding equipment, multi fuel and water equipment	C/FP	RDECOM : Natick, MA	5.376	0.809	Mar 2014	1.469		0.549		-		0.549	-	8.203	Continuing
DOD Field Feeding Equipment	C/FP	Various : Various	3.337	0.278	Apr 2014	0.920		0.648		-		0.648	-	5.183	Continuing
Army Field Feeding Equipment Development	C/FP	PM Force Sustainment Systems (FSS) : Natick, MA	2.266	0.211	Mar 2014	0.241		-		-		-	-	2.718	Continuing
Subtotal			10.979	1.298		2.630		1.197		-		1.197	-	16.104	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	TECOM/OEC/ATC : Warren, MI	3.709	0.343	May 2014	0.240		-		-		-	-	4.292	Continuing
Subtotal			3.709	0.343		0.240		-		-		-	-	4.292	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			16.949	1.874		3.034		1.430		-		1.430	-	23.287	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army							Date: February 2015			
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment			Project (Number/Name) 548 / Mil Subsistence Sys				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Transition advanced USMC equipment and systems to USMC for procure																												
Transition advanced USN equipment and systems to USN for procureme																												
Obtain SGA onduct production test of individual ration components/pack																												
Transition individual rations/ration components documents to DLA /servi																												
Conduct operational test of Unitized Group Ration components/packagin																												
Transition Unitized Group Ration component/packaging documents to D																												
Conduct Group Ration Airdrop Survivability Effort																												
Conduct Group Ration Airdrop Survivability Efforts																												
Complete transition to new recipe development/nutritional analysis softw																												
Transition subset of completed AFRS recipes to Joint Services																												
(1) Transition CK P3I to RESET																												
(2) Transition Temp Controllers for Field Kitchen Appliances to Procurem																												
Conduct Navy Future Galley Modular and Seabasing Effort																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>								Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) Transition Multi-Functional Secondary Packing to DLA-TS	▲1																											
Conduct DT/OT on Ice Maker Prototype																												
(2) Complete all TDP Changes for BEAR Kitchen Enhancements				▲2																								
Initiate modular appliance design upgrades based on customer test																												
(3) Initiate PQT Prototypes for advanced modular appliances								▲3																				
(4) Transition Autonomous Shipboard Cleaning System to Navy												▲4																
Conduct root cause analysis on MTRHS																												
Procure, test & evaluate a hydroponic system to grow fresh produce aboard ship																												
Testing to validate AMMPS generator interface and performance with CK																												
Develop Tech Data in support of CK ECP																												
Validate JIFF burner performance in platforms to complete TDP																												
Conduct OT&E for Navy Food Storage Analysis Tool																												
Expand NFSAT capabilities to include LPD amphibious warfare ship class																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Transition advanced USMC equipment and systems to USMC for procurement.	1	2013	4	2021
Transition advanced USN equipment and systems to USN for procurement.	1	2014	4	2021
Obtain SGA onduct production test of individual ration components/packaging	1	2009	4	2021
Transition individual rations/ration components documents to DLA /services	1	2009	4	2021
Conduct operational test of Unitized Group Ration components/packaging	1	2009	4	2021
Transition Unitized Group Ration component/packaging documents to DLA-TS	1	2009	4	2021
Conduct Group Ration Airdrop Survivability Effort	2	2015	4	2015
Conduct Group Ration Airdrop Survivability Efforts	1	2017	4	2017
Complete transition to new recipe development/nutritional analysis software	2	2015	4	2015
Transition subset of completed AFRS recipes to Joint Services	1	2015	4	2015
Transition CK P3I to RESET	4	2015	4	2015
Transition Temp Controllers for Field Kitchen Appliances to Procurement	4	2014	4	2014
Conduct Navy Future Galley Modular and Seabasing Effort	1	2014	4	2015
Transition Multi-Functional Secondary Packing to DLA-TS	1	2014	1	2014
Conduct DT/OT on Ice Maker Prototype	2	2014	4	2014
Complete all TDP Changes for BEAR Kitchen Enhancements	4	2014	4	2014
Initiate modular appliance design upgrades based on customer test	2	2014	3	2014
Initiate PQT Prototypes for advanced modular appliances	2	2015	2	2015
Transition Autonomous Shipboard Cleaning System to Navy	4	2015	4	2015
Conduct root cause analysis on MTRHS	2	2015	4	2015
Procure, test & evaluate a hydroponic system to grow fresh produce aboard ballis	3	2015	4	2015
Testing to validate AMMPS generator interface and performance with CK ECP	1	2015	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment		Project (Number/Name) 548 / Mil Subsistence Sys	
		Start		End	
Events		Quarter	Year	Quarter	Year
Develop Tech Data in support of CK ECP		3	2014	4	2015
Validate JIFF burner performance in platforms to complete TDP		3	2014	4	2014
Conduct OT&E for Navy Food Storage Analysis Tool		1	2016	4	2016
Expand NFSAT capabilities to include LPD amphibious warfare ship class and LCS		2	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment				Project (Number/Name) EL2 / Army Field Feeding Equipment			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EL2: Army Field Feeding Equipment	-	-	-	0.333	-	0.333	1.505	2.058	1.778	1.138	-	6.812
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the development and demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency and survivability, and to reduce food service logistics requirements for the Army. The project supports multi-fuel, rapidly deployable field food service equipment initiatives and engineering and manufacturing development to improve equipment, enhance safety in food service, and decrease fuel and water requirements. This project develops critical enablers that support the Army's Strategic Planning Guidance by developing and integrating critical expeditionary capabilities that maintain readiness; provide effective solutions that reduce the resource and operational energy footprint; provide modernized equipment; and enhance the field Soldier's well being. This project also reduces sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

This PE/Project supports Field Feeding programs for the Army.

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

	FY 2014	FY 2015	FY 2016
Title: Ice Making System	-	-	0.333
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 2016 Plans: Award contract for development of prototype Containerized Ice Making Systems and complete Developmental Testing.			
Accomplishments/Planned Programs Subtotals	-	-	0.333

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment				Project (Number/Name) EL2 / Army Field Feeding Equipment			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDT&E 654713.548: Military Subsistence System	1.874	3.034	1.430	-	1.430	0.961	0.550	0.652	1.319	Continuing	Continuing
• RDT&E 643747.610: Food Adv Dev	5.013	3.480	0.021	-	0.021	5.598	6.803	5.043	4.713	Continuing	Continuing
• RDT&E 643747.EL1: Army Field Feeding Programs	-	-	0.280	-	0.280	1.974	0.452	-	0.509	Continuing	Continuing
• OPA M65806: Assault Kitchen, Field Feeding	0.423	4.889	3.632	-	3.632	5.167	4.660	4.165	4.605	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Complete System Development and Demonstration of food items and equipment for transition into competitive procurement contract. Complete advanced research efforts to support Engineer Change Proposals for previously developed equipment.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>				Project (Number/Name) EL2 / <i>Army Field Feeding Equipment</i>						

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	Various	PM Force Sustainment Systems : Natick, MA	0.000	-		-		0.015		-		0.015	-	0.015	-
Subtotal			0.000	-		-		0.015		-		0.015	-	0.015	-

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ice Making System	Various	RDECOM : Natick, MA	0.000	-		-		0.113	Oct 2015	-		0.113	-	0.113	-
Subtotal			0.000	-		-		0.113		-		0.113	-	0.113	-

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ice Making System	Various	ATC/Ft Lee : Virginia	0.000	-		-		0.205	Oct 2015	-		0.205	-	0.205	-
Subtotal			0.000	-		-		0.205		-		0.205	-	0.205	-

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		0.333		-		0.333	-	0.333	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment								Project (Number/Name) EL2 / Army Field Feeding Equipment										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Complete prototype Containerized Ice Making Systems (CIMS)																												
Conduct Developmental Testing (DT) on the Containerized Ice Making Systems																												
Conduct Operational Testing on the Containerized Ice Making Systems																												
(1) Complete Milestone C and transition CIMS into production																												
Design and build Battlefield Kitchen prototypes																												
Conduct DT on the Battlefield Kitchen																												
Conduct Limited User Testing on the Battlefield Kitchen																												
(2) Complete Milestone C and transition Battlefield Kitchen into production																												
Design and build prototype DESERT Systems																												
Conduct Developmental Testing (DT) on the DESERT Systems																												
Conduct Limited User Testing on the DESERT Systems																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) EL2 / <i>Army Field Feeding Equipment</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Complete prototype Containerized Ice Making Systems (CIMS)	1	2016	2	2016
Conduct Developmental Testing (DT) on the Containerized Ice Making Systems	3	2016	4	2016
Conduct Operational Testing on the Containerized Ice Making Systems	1	2017	2	2017
Complete Milestone C and transition CIMS into production	4	2017	4	2017
Design and build Battlefield Kitchen prototypes	1	2017	1	2018
Conduct DT on the Battlefield Kitchen	2	2018	4	2018
Conduct Limited User Testing on the Battlefield Kitchen	4	2018	1	2020
Complete Milestone C and transition Battlefield Kitchen into production	2	2019	2	2019
Design and build prototype DESERT Systems	1	2019	4	2019
Conduct Developmental Testing (DT) on the DESERT Systems	1	2020	2	2020
Conduct Limited User Testing on the DESERT Systems	3	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	22.168	8.943	27.155	-	27.155	41.087	30.601	24.019	20.188	Continuing	Continuing
241: <i>Nstd Combined Arms</i>	-	18.767	5.858	24.214	-	24.214	38.084	27.672	21.054	17.215	Continuing	Continuing
573: <i>Program Executive Office Simulation, Training Spt</i>	-	3.401	3.085	2.941	-	2.941	3.003	2.929	2.965	2.973	Continuing	Continuing

Note

Funds were realigned to higher priority requirements. The FY 2016 funding request was reduced by \$.982 million to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

Program Element funds development of Non-System Training Devices to support force-on-force training at the Combat Training Centers (CTC), general military training, and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Army training devices and training simulations contribute to the modernization of the forces by enabling readiness and strengthening combat effectiveness through realistic training solutions for the Warfighter. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, and Joint Multinational Readiness Center (JMRC), formerly the Combat Maneuver Training Center (CMTTC), Hohenfels, Germany; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs. Project 573 funds key organizational support to Army/DoD Transformation via innovative simulation and training device efforts. Program Executive Office (PEO) Simulation, Training and Instrumentation (STRI)'s unique geographic co-location with other services facilitates joint training solutions in a common environment.

FY 2016 Project 241 funds significant development efforts in support of Army Training and Readiness on the Combat Training Center Instrumentation Systems (CTC-IS), Home Station Instrumentation Training System (HITS), Common Training Instrumentation Architecture (CTIA), Target Modernization, Medical Simulation Training Center (MSTC), Engagement Skills Trainer (EST), Live, Virtual, Constructive Integrating Architecture (LVC-IA), and Comprehensive Soldier & Family Fitness (CSF2).

FY 2016 Project 573 will provide for minimum PEO STRI core operations supporting development of training devices and simulations by PEO STRI's four Project Management Offices.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604715A / Non-System Training Devices - Eng Dev			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	18.971	8.945	35.311	-	35.311
Current President's Budget	22.168	8.943	27.155	-	27.155
Total Adjustments	3.197	-0.002	-8.156	-	-8.156
• Congressional General Reductions	-	-0.002			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.679	-			
• SBIR/STTR Transfer	-0.482	-			
• Adjustments to Budget Years	-	-	-8.156	-	-8.156

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
241: Nstd Combined Arms	-	18.767	5.858	24.214	-	24.214	38.084	27.672	21.054	17.215	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Common Training Instrumentation Architecture (CTIA) program provides the common product-line architecture, product line software, standards, services, and architecture framework for developing the Live Training Transformation (LT2) Product Line of live training systems supporting Army-wide live instrumented Force-On-Force (FOF) and Force-On-Target (FOT) training requirements and is the core live architecture for the Live, Virtual, Constructive Integrated Training Environment (LVC-ITE).

The Target Modernization program provides a common architectural framework, standards, specifications, and interfaces for live fire target devices, a common target control system for all range types, and innovative technologies to enhance training realism and reduce life cycle costs on the ranges.

Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). Also, CTC-IS funds the continued development of the Range Communication System at the NTC and JRTC, to provide high-fidelity live, virtual, and constructive brigade training rotations which prepare Brigade Combat Teams, Joint partners, and supporting units to deploy in support of Army Force Generation (ARFORGEN). CTC-IS develops new data communications systems increasing tracking accuracy and coverage at the CTCs to provide greater training fidelity to training units.

The Home Station Instrumentation Training System (HITS) provides a high-fidelity deployable instrumented training capability to support platoon thru battalion level Live Force-on-Force Training. HITS tracks location of soldiers and vehicles and simulates weapons' effects and engagements, allowing units to "Train as they Fight" against live opponents. HITS provides accurate feedback to training units. HITS consists of light deployable components that can be rapidly assembled/disassembled and transported to support deployed training. HITS integrates with future and legacy MILES. HITS is a member of the Live Training Transformation (LT2) family of training systems and shares several hardware and software components with the Instrumentation Systems (IS). HITS provides the Live domain for Live-Virtual-Constructive (LVC) training integration.

The Medical Simulation Training Center (MSTC) provides realistic medical training to both medical and non-medical Soldiers in the Active, Reserve, and National Guard. MSTCs provide hands-on instruction on the latest battlefield trauma and critical care techniques based on Army Medical Department (AMEDD) approved performance oriented Program of Instruction (POI). Medical treatment validation exercises simulate the high stress of performing medical interventions in combat. MSTC supports Unit Medical Readiness by validating Combat Medic (68W) Emergency Medical Technician (EMT) biennial recertification requirements and provides Combat Lifesaver (CLS) training to non-medical Soldiers.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
<p>The Engagement Skills Trainer (EST) is the unit/institutional, indoor, multipurpose, multi-lane, small arms, crew-served and individual anti-tank training simulation that enables training across three different modes: individual marksmanship; small unit (collective) gunnery and tactical training; and judgmental use of force (shoot/don't shoot), which includes escalation of force/graduated response scenarios.</p> <p>The Live, Virtual, Constructive Integrating Architecture (LVC-IA) provides a net-centric linkage that collects, retrieves and exchanges data among existing Training Aids, Devices, Simulations, and Simulators (TADSS) and Mission Command Systems. The LVC-IA defines "how" information is exchanged among the different LVC domains and the Mission Command Systems. The LVC-IA provides enterprise level tools for exercise control, after action review, and system information assurance. It develops hardware and software to interface the different Live, Virtual and Constructive communication protocols and to provide a correlated common operating picture for the training audience on their organic Mission Command equipment. The integration of the Live, Virtual, and Constructive TADSS with the Mission Command equipment will enable larger and more robust training events, to better prepare U.S. Soldiers for their missions at an overall reduced cost. The end-state goal is to enable an LVC Integrated Training Environment that can replicate Operational Environments in a cost effective manner to provide a high level of value-added training and mission rehearsal opportunities to Army Commanders and their Soldiers.</p> <p>Comprehensive Soldier & Family Fitness (CSF2) is research and development efforts that include Future Soldier Assessment Tool (DASH-R) Project, Global Assessment Tool (GAT) 3.0 Project, and Program Evaluation (PE) Project.</p> <p>FY 2016 Project 241 funds significant development efforts in support of U.S. Army Training and Readiness on the Combat Training Center Instrumentation Systems (CTC-IS), Home Station Instrumentation Training System (HITS), Common Training Instrumentation Architecture (CTIA), Target Modernization, Medical Simulation Training Center (MSTC), Engagement Skills Trainer (EST), Live, Virtual, Constructive Integrating Architecture (LVC-IA), and Comprehensive Soldier & Family Fitness (CSF2).</p>				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Training Instrumentation Architecture (CTIA) program.</p> <p>Description: Continue EMD phase contract activities for the CTIA program to provide the common architecture capabilities.</p> <p>FY 2014 Accomplishments: Continued development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for Live Training Systems (LTS) to include: the Combat Training Centers-Instrumentation Systems (CTC-IS), Integrated Military Operations in Urbanized Terrain Training System (IMTS), Home Station Instrumentation Systems (HITS), Digital Ranges Training System (DRTS) training instrumentation programs and the Live, Virtual, Constructive-Integrated Training Environment (LVC-ITE) interoperability initiatives.</p> <p>FY 2016 Plans:</p>		4.060	-	4.285

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Will continue development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for LTS to include: the CTC-IS, Integrated Military Operations in IMTS, HITS, DRTS training instrumentation programs and the LVC-ITE interoperability initiatives.				
Title: Government Program Management for the Common Training Instrumentation Architecture (CTIA) program. Description: Government Program Management for the CTIA program. FY 2016 Plans: Program Management for the CTIA program.		-	-	0.364
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Combat Training Center Instrumentation System (CTC-IS). Description: Continue EMD phase contract activities for the CTC-IS. FY 2014 Accomplishments: CTC-IS funded the continued development of the existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). Funding was used to develop a common Range Communications System (RCS) that can be implemented at both NTC and JRTC for increased entity tracking coverage and accuracy in order to increase After Action Review (AAR) fidelity for Brigade Combat Team (BCT) rotations to better prepare units for deployment. FY 2015 Plans: CTC-ISfunds the continued development of the existing IS at NTC, JRTC and JMRC. Funds are used to develop a common RCS that can be implemented at both NTC and JRTC for increased entity tracking coverage and accuracy in order to increase AAR fidelity for BCT rotations to better prepare units for deployment. FY 2016 Plans: CTC-IS will fund the continued development of the existing IS at NTC, JRTC and JMRC. Funding will be used to develop a common RCS that can be implemented at both NTC and JRTC for increased entity tracking coverage and accuracy in order to increase AAR fidelity for BCT rotations to better prepare units for deployment.		2.560	2.918	2.328
Title: Government Program Management for the Combat Training Center Instrumentation System (CTC-IS) program. Description: Government Program Management for the CTC IS program. FY 2014 Accomplishments:		1.339	1.302	1.447

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Funded Program Management for the CTC-IS program.			
FY 2015 Plans: Funds Program Management for the CTC-IS program.			
FY 2016 Plans: Will fund Program Management for the CTC-IS program.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Homestation Instrumentation Training System (HITS) program. Description: EMD phase contract activities for the HITS program. FY 2015 Plans: Integrates and tests the interface between HITS and latest versions of the Live, Virtual, and Constructive Integrating Architecture (LVC-IA) to sustain the Integrated Training Environment (ITE) at Home Stations. Develops, integrates, and tests the interfaces with new versions of TESS and upgrades to existing fielded I-MILES. FY 2016 Plans: Will Integrate and test the interface between HITS and latest versions of the LVC-IA to sustain the Integrated Training Environment (ITE) at Home Stations. Will develop, integrate, and test the interfaces with new versions of TESS and upgrades to existing fielded I-MILES.		-	0.103
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Medical Simulation Training Center (MSTC). Description: EMD phase contract activities for the MSTC program. FY 2016 Plans: Enhancement of Birthing Simulator by developing realistic simulated tissue and sensors that will gather objective metrics regarding pressure, fetal position, etc. Enhancement of Intraosseous Fluid Resuscitation Training by including anatomical accuracy, tissue properties, and rapid refresh of the system to support high training OPTEMPO.		-	-
Title: Government Program Management for the Medical Simulation Training Center (MSTC) program. Description: Government Program Management for the MSTC program. FY 2014 Accomplishments:		0.073	-
			0.177

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Research management costs associated with Instructor Support System (ISS) development efforts for the FY14 MSTC program. FY 2016 Plans: Research management costs associated with development of the Birthing Simulator and the Intraosseous Resuscitation Trainer for the FY16 MSTC program.				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Engagement Skills Trainer (EST) program. Description: EMD phase contract activities for the Engagement Skills Trainer (EST) program. FY 2014 Accomplishments: Developed adaptive marksmanship and intelligent tutoring capabilities for the EST II. FY 2016 Plans: Will develop EST Dynamic Terrain to accurately portray all battlefield effects, in accordance with the Contemporary Operating Environment (COE), across the full range of military operations including: friendly and enemy forces and their doctrine, tactics, techniques and procedures; all military recognized terrain; atmospheric and weather conditions; specific enemy and friendly vehicles and equipment; dynamic, correlated terrain; the effects of munitions on personnel, vehicles, structures; and develop prior years efforts (weapons, optics, etc). Will develop enhanced capabilities in accordance with the capability manager's priorities.		0.776	-	1.186
Title: Live, Virtual, Constructive Integrating Architecture (LVC-IA) Engineering and Manufacturing Development (EMD) phase contract activity. Description: Continue EMD phase contract activities for the LVC-IA program. FY 2014 Accomplishments: Completed system development, integration and demonstration of the LVC-IA Version 2 capability. FY 2016 Plans: Will complete system development, integration and demonstration of the LVC-IA Version 2 capability.		6.580	-	5.432
Title: Government Program Management for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Program. Description: Government Program Management for the LVC-IA Program. FY 2014 Accomplishments: Program Management for the LVC-IA Program. FY 2015 Plans:		0.616	0.937	1.756

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Program Management for the LVC-IA Program.				
FY 2016 Plans: Program Management for the LVC-IA Program.				
Title: Live, Virtual, Constructive Integrating Architecture (LVC-IA) Program Government System Test and Evaluation. Description: Government System Test and Evaluation for the LVC-IA Program. FY 2014 Accomplishments: LVC-IA continued integration testing support on developed components for LVC-IA for interoperability with Training Aids, Devices, Simulators and Simulations (TADSS) and other Mission Command Systems. LVC-IA conducted Federation Integration, Functional Verification and System Measurement of Performance (SMP) events, complete Test Readiness Review (TRR) and Government Acceptance Testing for Version 2. FY 2016 Plans: LVC-IA will continue integration testing support on developed components for LVC-IA for interoperability with TADSS and other Mission Command Systems. LVC-IA will conduct Federation Integration, Functional Verification and System Measurement of Performance (SMP) events, complete Test Readiness Review (TRR) and Government Acceptance Testing for Version 2.		1.000	-	1.133
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Target Modernization program. Description: EMD phase contract activities for the Target Modernization program. FY 2016 Plans: Will develop and integrate autonomous trackless moving type target systems into the Government owned target control system Targetry Range Automated Control Recording. Will develop both human and vehicle type autonomous targets. Bridge technology transition from an on-going Small Business Innovation Research effort.		-	-	2.005
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the One Tactical Engagement Simulation System (OneTESS) program. Description: EMD phase contract activities for the OneTESS program. FY 2014 Accomplishments: OneTESS program completed an Initial Operational Test (IOT) on 11 February 2014 with an Operational Test Agency (OTA) Milestone Assessment Report (OMAR) delivered on 19 June 2014.		1.476	-	-
Title: Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program.		0.287	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>				Project (Number/Name) 241 / <i>Nstd Combined Arms</i>			
B. Accomplishments/Planned Programs (\$ in Millions)											
Description: Government Program Management for the One Tactical Engagement Simulation System (OneTESS) program.								FY 2014	FY 2015	FY 2016	
FY 2014 Accomplishments: Government Program Management for the OneTactical Engagement Simulation System (OneTESS) program.											
Title: Comprehensive Soldier & Family Fitness (CSF2) Description: Comprehensive Soldier & Family Fitness (CSF2), the Army community's premier resilience and health training program.								-	0.598	1.306	
FY 2015 Plans: Develops, tests and implements a variety of psychometric instruments administered on an electronic world-wide delivery platform; evaluation of Comprehensive Soldier and Family Fitness (CSF2) training effectiveness at influencing objective outcomes in the health and work performance domains; applying advanced statistical analysis techniques to emerging human subjects problems identified by the Army senior leadership (e.g., suicide, violent crime, sexual assault / harassment, etc).											
FY 2016 Plans: Will develop, test, and implement a variety of psychometric instruments administered on an electronic world-wide delivery platform; will evaluate CSF2 training effectiveness at influencing objective outcomes in the health and work performance domains; will apply advanced statistical analysis techniques to emerging human subjects problems identified by the Army senior leadership (e.g., suicide, violent crime, sexual assault / harassment, etc).											
Accomplishments/Planned Programs Subtotals								18.767	5.858	24.214	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Training Devices, Non-System: <i>Training Devices, Non-System</i>	215.428	106.295	303.236	-	303.236	243.908	203.786	207.265	228.094	Continuing	Continuing
• CTC Support: <i>CTC Support</i>	121.710	65.062	74.916	-	74.916	85.567	95.379	89.515	90.155	Continuing	Continuing
Remarks											
D. Acquisition Strategy Competitive development efforts based on performance specifications.											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Program Management	Various	PEO STRI : Orlando, FL	8.046	-		-		-		-		-	-	8.046	8.046
OneTESS Program Management	Various	PEO STRI, : Orlando, FL	1.753	0.287	Feb 2014	-		-		-		-	-	2.040	2.040
CTC-IS Program Management	Various	PEO STRI : Orlando, FL	2.720	1.339	Mar 2014	1.302	Mar 2015	1.447	Mar 2016	-		1.447	Continuing	Continuing	Continuing
HITS Program Management	Various	PEO STRI : Orlando, FL	0.400	-		-		-		-		-	-	0.400	0.400
MSTC Program Management	Various	PEO STRI : Orlando, FL	0.382	0.073		-		0.177	Mar 2016	-		0.177	Continuing	Continuing	Continuing
EST Program Management	Various	PEO STRI : Orlando, FL	0.214	-		-		-		-		-	-	0.214	0.214
LVC-IA Program Management	Various	PEO STRI : Orlando, FL	4.293	0.616	Dec 2013	0.937	Dec 2014	1.756	Dec 2015	-		1.756	Continuing	Continuing	Continuing
Target Modernization	Various	PEO STRI : Orlando, FL	0.614	-		-		-		-		-	-	0.614	0.614
ETC-IS Program Management	Various	PEO STRI : Orlando, FL	0.164	-		-		-		-		-	-	0.164	0.164
CSF2	TBD	Multiple : Various	0.000	-		0.160		0.356		-		0.356	Continuing	Continuing	Continuing
CTIA	RO	PEO STRI : ORLANDO, FL	0.000	-		-		0.364	Mar 2016	-		0.364	Continuing	Continuing	Continuing
Subtotal			18.586	2.315		2.399		4.100		-		4.100	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS	SS/CPFF	General Dynamics : Fairfax, VA	124.769	-		-		-		-		-	-	124.769	124.769
OneTESS	SS/CPFF	General Dynamics C4 Systems : Orlando, FL 32826	9.954	0.476	Nov 2013	-		-		-		-	-	10.430	10.430

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTIA	SS/CPFF	TBS : TBS	1.585	-		-		4.285	Mar 2016	-		4.285	Continuing	Continuing	Continuing
CTIA	C/CPFF	Lockheed Martin Inc. : Orlando, FL	57.091	-		-		-		-		-	-	57.091	57.091
CTIA	C/CPFF	General Dynamics C4 Systems : Orlando, FL	4.273	3.513	Mar 2014	-		-		-		-	-	7.786	7.786
CTC-IS	C/FFP	Northrop Grumman Technical Services : Herndon, VA	27.003	2.560	Mar 2014	2.918	Apr 2015	2.328	Mar 2016	-		2.328	Continuing	Continuing	Continuing
HITS	C/FFP	Riptide : Orlando, FL	1.379	-		-		-		-		-	-	1.379	1.379
HITS	C/IDIQ	General Dynamics C4 Systems : Orlando, FL 32826	1.625	-		-		-		-		-	-	1.625	1.625
HITS	C/FFP	TBS : TBS	0.000	-		0.103	Jun 2015	1.850	Jul 2016	-		1.850	Continuing	Continuing	Continuing
MSTC Development	C/FP	Multiple : Various	3.034	-		-		0.945	Jan 2016	-		0.945	Continuing	Continuing	Continuing
EST Development	C/FP	Cubic Simulation Systems, Inc. : Orlando, FL 32809-3813	1.528	-		-		-		-		-	-	1.528	1.528
EST	C/FP	Nova Technologies : Panama City, FL 32404-6747	0.609	-		-		-		-		-	-	0.609	0.609
EST Enhanced Capabilities Adaptive Marksmanship and Intelligent Tutoring	C/FFP	Dignitas Technologies : Orlando, FL 32817	0.000	0.776	Jun 2015	-		-		-		-	-	0.776	0.776
EST Enhanced Capabilities	C/FFP	Meggitt Training Systems, Inc. : Suwanee, GA 30024-1247	0.000	-		-		1.186	Apr 2016	-		1.186	Continuing	Continuing	Continuing
LVC-IA Development	C/CPFF	Cole Engineering Services, Inc : Various	23.242	6.580	Jun 2014	-		5.432	Jun 2016	-		5.432	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Modernization	C/CPFF	General Dynamics C4 Systems : Orlando, FL	4.671	-		-		-		-		-	-	4.671	4.671
Target Modernization	C/CPFF	TBS : TBS	0.000	-		-		2.005	Mar 2016	-		2.005	Continuing	Continuing	Continuing
Congressional Add Center of Excellence for Military Operations in Urban Terrain and Cultural Trn	C/FP	Multiple : Various	2.996	-		-		-		-		-	-	2.996	2.996
ETC-IS	SS/CPFF	General Dynamics C4 Systems : Orlando, FL 32826	4.836	-		-		-		-		-	-	4.836	4.836
CSF2	TBD	Multiple : Various	0.000	-		0.020		0.039		-		0.039	Continuing	Continuing	Continuing
Subtotal			268.595	13.905		3.041		18.070		-		18.070	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS	Various	Various : Orlando, FL	6.596	-		-		-		-		-	-	6.596	6.596
OneTESS	Various	Various : Various	0.262	-		-		-		-		-	-	0.262	0.262
CTIA	Various	Various : Various	12.297	0.547	Mar 2014	-		-		-		-	-	12.844	12.844
Target Modernization	Various	Various : Various	0.192	-		-		-		-		-	-	0.192	0.192
CSF2	TBD	Multiple : Various	0.000	-		0.070		0.158		-		0.158	Continuing	Continuing	Continuing
Subtotal			19.347	0.547		0.070		0.158		-		0.158	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Development & Test	Various	Multiple : Orlando, FL	4.162	-		-		-		-		-	-	4.162	4.162

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneTESS Test Support	Various	Multiple : Orlando, FL	0.280	1.000	Feb 2014	-		-		-		-	-	1.280	1.280
HITS	Various	Various : Orlando, FL	0.740	-		-		-		-		-	-	0.740	0.740
LVC-IA Test Support	Various	Multiple : Orlando, FL	3.169	1.000	Apr 2014	-		1.133	Apr 2016	-		1.133	Continuing	Continuing	Continuing
IEDES	Various	Multiple : Orlando, FL	0.519	-		-		-		-		-	-	0.519	0.519
CSF2	TBD	Multiple : Various	0.000	-		0.348		0.753		-		0.753	Continuing	Continuing	Continuing
Subtotal			8.870	2.000		0.348		1.886		-		1.886	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			315.398	18.767		5.858		24.214		-		24.214	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
OneTESS Development																												
CTIA Development and Architectural Evolution																												
CTC IS Development																												
HITS Development																												
MSTC MT-C2 Development																												
MSTC Virtual Patient System Developments																												
MSTC Trainer Developments																												
EST Enhanced Capabilities Adaptive Marksmanship and Intelligent Tutor																												
EST Enhanced Capabilities																												
LVC-IA - Version 2																												
LVC-IA - Version 3																												
LVC-1A - Version 4																												
Target Modernization Development																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																			
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev								Project (Number/Name) 241 / Nstd Combined Arms																			
Event Name								FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
								1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CSF2																																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OneTESS Development	1	2013	4	2014
CTIA Development and Architectural Evolution	1	2012	4	2020
CTC IS Development	1	2010	4	2020
HITS Development	3	2012	4	2020
MSTC MT-C2 Development	3	2014	2	2015
MSTC Virtual Patient System Developments	3	2014	3	2015
MSTC Trainer Developments	2	2016	4	2019
EST Enhanced Capabilities Adaptive Marksmanship and Intelligent Tutoring	3	2015	2	2016
EST Enhanced Capabilities	3	2016	3	2017
LVC-IA - Version 2	1	2014	3	2016
LVC-IA - Version 3	4	2016	3	2018
LVC-1A - Version 4	4	2018	3	2020
Target Modernization Development	1	2016	4	2020
CSF2	1	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 573 / Program Executive Office Simulation, Training Spt			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
573: Program Executive Office Simulation, Training Spt	-	3.401	3.085	2.941	-	2.941	3.003	2.929	2.965	2.973	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note .												
A. Mission Description and Budget Item Justification In support of Non-System Training Devices (NSTD), this project funds the US Army Program Executive Officer Simulation, Training and Instrumentation (PEO STRI) core operations supporting development of Army training devices and simulations by PEO STRI project managers (PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation) FY 2016 funds labor in support of PEO operations.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Title: Government Program Management to support PEO STRI. Description: Government Program Management to support PEO STRI. FY 2014 Accomplishments: Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation. FY 2015 Plans: Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation. FY 2016 Plans: Government Program Management to support PEO STRI labor for project managers in PM TRADE, PM ITTS, PM CATT, and PM Constructive Simulation.										3.401	3.085	2.941
Accomplishments/Planned Programs Subtotals										3.401	3.085	2.941
C. Other Program Funding Summary (\$ in Millions) N/A Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 573 / Program Executive Office Simulation, Training Spt
D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 573 / Program Executive Office Simulation, Training Spt					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management- PEO STRI	Various	PEO STRI : Orlando, FL	14.816	3.401		3.085		2.941		-		2.941	Continuing	Continuing	Continuing
Subtotal			14.816	3.401		3.085		2.941		-		2.941	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			14.816	3.401		3.085		2.941		-		2.941	-	-	-
Remarks															

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PE 0604715A: *Non-System Training Devices - Eng Dev*
Army

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2040 / 5

PE 0604715A / Non-System Training
Devices - Eng Dev

573 I Program Executive Office Simulation,
Training Spt

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 573 / <i>Program Executive Office Simulation, Training Spt</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Government Program Management	1	2010	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	38.412	15.898	24.569	-	24.569	27.131	20.524	20.018	18.082	Continuing	Continuing
126: <i>FAAD C2 ED</i>	-	3.293	-	-	-	-	-	-	-	-	-	3.293
146: <i>Air & Msl Defense Planning Control Sys</i>	-	12.861	13.532	15.757	-	15.757	15.965	16.106	16.288	14.466	Continuing	Continuing
149: <i>Counter-Rockets, Artillery & Mortar</i>	-	22.258	2.366	8.812	-	8.812	11.166	4.418	3.730	3.616	Continuing	Continuing

Note

FY14 RDTE reflects an adjustment in the amount of \$20.683 million for C-RAM software improvements to enhance intercept capabilities.
FY16 RDTE reflects an adjustment in the amount of \$4.435 million for C-RAM software enhancements (i.e., testing and upgrade of dynamic clearance of unplanned fires (DCUF) capability).

A. Mission Description and Budget Item Justification

The Forward Area Air Defense Command and Control (FAAD C2) system collects, digitally processes, and disseminates real-time target cuing and tracking information; the common tactical 3-dimensional air picture; and command, control, and intelligence information to all Air and Missile Defense (AMD) weapon systems (Avenger and Man-Portable Air Defense System (MANPADS)), and joint and combined arms systems. The FAAD C2 system provides alerting data to air defense gunners, airspace battle management, and up-linking of mission operations, thereby enhancing force protection against air and missile attack. Situational awareness and targeting data is provided on threat aircraft, cruise missiles, and unmanned aerial systems (UAS). FAAD C2 software is a key component of the Air Defense and Airspace Management (ADAM) Cell that is being fielded to Brigade Combat Teams (BCT), Multi-Functional Support Brigades and Division Headquarters as part of the Army's modularity concept. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated Army National Guard AMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of AMD operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and ADAM Cells at the Brigade Combat Teams (BCTs), Multi Functional Support Brigades and Divisions/Corps. AMDPCS systems also provide air defense capabilities to Homeland Defense systems. ADAM Cells provide the Commander at BCTs, Brigades and Divisions with air defense situational awareness and airspace management capabilities. They also provide the interoperability link with Joint, multinational and coalition forces. AMDPCS components are vital in the transformation of ADA units and the activation of the AMD Battalions. AMDPCS has three major components: (1) the Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational 3-dimensional air picture; (2) the Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time, 3-dimensional, joint airspace situational awareness and fire direction command and control for AMD forces; (3) the Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				
<p>Counter-Rocket, Artillery, Mortar (C-RAM) is an evolutionary, non-developmental program initiated by the Army Chief of Staff in response to the indirect fire (IDF) threat and a validated Operational Needs Statement (ONS). The primary mission of the C-RAM program is to develop, procure, field, and maintain a system-of-systems (SoS) that can detect RAM launches; provide localized warning to the defended area, with sufficient time for personnel to take appropriate action; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM capability is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems, warning systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System (LPWS)), with a commercial off-the-shelf (COTS) wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in Afghanistan, providing correlated air and ground pictures, linking units to the Army Mission Command and the Joint Defense Network, and using various forms of communications to provide situational awareness and exchange of timely and accurate information in order to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond, and Protect decisions.</p> <p>Multiple acquisition efforts are associated with the C-RAM program, including C-RAM Intercept, which fields existing LPWS guns to two Indirect Fire Protection Capability (IFPC)/Avenger composite Battalions, and RAM Warn, a horizontal technology insertion, using current C-RAM warning capability to provide early, localized warning to all Maneuver Brigade Combat Teams (BCT).</p>						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		18.284	15.906	20.248	-	20.248
Current President's Budget		38.412	15.898	24.569	-	24.569
Total Adjustments		20.128	-0.008	4.321	-	4.321
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-	-			
• Intercept Enhancements (OCO Funded)		20.683	-	-	-	-
• Dynamic Clearance of Unplanned Fires (DCUF)		-	-	4.435	-	4.435
• Other Adjustments		-0.555	-0.008	-0.114	-	-0.114

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 126 / FAAD C2 ED			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
126: FAAD C2 ED	-	3.293	-	-	-	-	-	-	-	-	-	3.293
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
<p>The Forward Area Air Defense Command and Control (FAAD C2) system collects, digitally processes, and disseminates real-time target cuing and tracking information. FAAD C2 provides the common tactical 3-dimensional air picture and command, control, and intelligence information to all Air and Missile Defense (AMD) weapon systems (Avenger and Man-Portable Air Defense System (MANPADS)), and joint and combined arms systems. The FAAD C2 system provides alerting data to air defense gunners, airspace battle management, and up-linking of mission operations, thereby enhancing force protection against air and missile attack. Situational awareness and targeting data is provided on threat aircraft, cruise missiles, and unmanned aerial systems (UAS). The FAAD C2 system provides this mission capability by integrating dynamic FAAD C2 engagement operations software with the Multifunctional Information Distribution System (MIDS), Single Channel Ground and Airborne Radio System (SINCGARS), Enhanced Position Location and Reporting System (EPLRS), Global Positioning System (GPS), Airborne Warning and Control Systems (AWACS), Sentinel radar, and the Common Operating Environment (COE) architecture. In addition, FAAD C2 provides interoperability with Joint C2 systems and horizontal integration with PATRIOT and Theater High-Altitude Area Defense (THAAD) by fusing sensor data to create a scalable and filterable Single Integrated Air Picture (SIAP) and common tactical picture. The system software is a key component of the Air Defense and Airspace Management (ADAM) Cell that is being fielded to Brigade Combat Teams (BCTs), Multi-Functional Support Brigades and Divisions/Corps as part of the Army's modularity concept. System software is able to provide target data and engagement commands/status to AMD Battalions. FAAD C2 is also a principal air defense system within the Homeland Defense Program. Soldiers from activated Army National Guard (ARNG) AMD battalions operate the FAAD C2 systems in the National Capital Region and other locations.</p> <p>Program funding provides a method to rapidly keep pace with leading edge technologies and maintain interoperability and backwards compatibility caused by improvement to other system components (upgrade from common hardware version 3 to 4 and EPLRS enhancements).</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: FAAD C2 Software Development									3.293	-	-	
Description: Supported FAAD C2 software development including unique software enhancements in support of Homeland Defense (HLD), software solutions for Host-Based Software Security (HBSS) and Common Operating Environment (COE) mandates, and security accreditation updates. Integrated Improved Sentinel radar. Incorporated IFF modes 1, 2, 3 (active decode), 5/S capabilities, and self-reporting systems.												
FY 2014 Accomplishments: Completed FAAD C2 software requirements for short range air defense capabilities in support of Homeland Defense. Supported FAAD C2 software development including: Avenger Upgrades for HLD, CWMI 2D/3D Man Machine Interface Enhancements. Enhanced the Battlefield Geometries passing between AMDWS & FAAD C2. Continued to support software on Advanced Battle												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 126 / FAAD C2 ED				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Management and enhanced capability for Digital Clearance of Fires. Continued to implement evolving COE requirements for real time systems. Continued security accreditation updates.												
Accomplishments/Planned Programs Subtotals										3.293	-	-
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• SSN AD5050: SSN AD5050, FAAD C2	4.607	-	-	-	-	-	-	-	-	-	4.607	
• PE 0604741A, Proj 149: PE 0604741A, Proj 149, Counter-Rockets, Artillery & Mortar	22.258	2.366	8.812	-	8.812	11.166	4.418	3.730	3.616	Continuing	Continuing	
• SSN H30503: SSN H30503, Rocket, Artillery, Mortar (RAM) Warn (Parent is IFPC Family of Systems: BZ0501)	11.929	27.652	42.458	-	42.458	28.602	8.425	3.470	-	-	122.536	
• SSN H30504: SSN H30504, C-RAM Enhancements (Parent is IFPC Family of Systems: BZ0501)	43.425	40.644	18.221	-	18.221	23.189	-	-	-	-	125.479	
• PE 0604741A, Proj 146: PE 0604741A, Proj 146, Air & Missile Defense Planning and Control System	12.861	13.532	15.757	-	15.757	15.965	16.106	16.288	14.466	Continuing	Continuing	
• SSN AD5070: SSN AD5070, Air & Missile Defense Planning and Control System	13.090	27.374	28.176	-	28.176	32.443	32.690	33.032	13.366	Continuing	Continuing	
• PE 0604319A, Proj DU3: PE 0604319A, Proj DU3, IFPC (FY12 PE0603305A IFPC II - Intercept)	76.559	96.131	155.361	-	155.361	90.323	58.562	43.384	109.445	Continuing	Continuing	
• PE 0605457A, Proj S40: PE 0605457A, Proj S40, Army Integrated Air and Missile Defense (AIAMD)	358.192	152.516	214.099	-	214.099	227.103	169.575	153.451	33.424	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>				Project (Number/Name) 126 / <i>FAAD C2 ED</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• SSN BZ5075: <i>SSN BZ5075, IAMD Battle Command System</i>	-	-	20.917	-	20.917	204.513	296.361	375.763	443.637	Continuing	Continuing
• PE 060482A, Proj E10: <i>PE 060482A, Proj E10, Sentinel</i>	1.796	5.221	12.309	-	12.309	11.465	10.971	12.191	30.277	Continuing	Continuing
Remarks											
This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.											
D. Acquisition Strategy											
The FAAD C2 acquisition strategy relies on evolutionary software development to rapidly meet the demands of air defense battle management/command, control, communications, computers, and intelligence (BM/C4I) requirements, and to keep pace with automated information technologies. The concept of evolutionary software development was followed in Blocks I-IV fieldings. FAAD C2 software provides engagement operational capabilities for the Army's Active and Reserve components.											
FAAD C2 is a core component of C-RAM C2. As C-RAM C2 is developed, the interoperability of Air Defense functionality of FAAD C2 must be maintained.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev						Project (Number/Name) 126 / FAAD C2 ED			

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	40.723	0.271	Dec 2013	-		-		-		-	-	40.994	-
Subtotal			40.723	0.271		-		-		-		-	-	40.994	-

Remarks
Basic Air Defense functionality will be maintained under Counter-Rockets, Artillery & Mortar (C-RAM) Development.

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Engineering	SS/CPIF	Northrop Grumman : Carson, CA	40.277	2.261	Feb 2014	-		-		-		-	-	42.538	-
Software Engineering	Various	Various : Various	23.082	0.236	Dec 2013	-		-		-		-	-	23.318	-
Subtotal			63.359	2.497		-		-		-		-	-	65.856	-

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification/Testing	Various	YPG : Yuma, AZ	11.791	0.411	Feb 2014	-		-		-		-	-	12.202	-
Interoperability	Various	CTSF : Ft Hood, TX	3.256	0.114	Dec 2013	-		-		-		-	-	3.370	-
Subtotal			15.047	0.525		-		-		-		-	-	15.572	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			119.129	3.293	-	-	-	-	-	122.422	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	Project (Number/Name) 126 / <i>FAAD C2 ED</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Production and Deployment Phase																												
(1) FAAD Shelter Systems & Hardware Enter Sustainment																												
FAAD C2 Software Modifications for Emerging Capabilities																												
FAAD C2 Software Upgrades for Homeland Defense (NCR-IADS)																												
Continued Periodical Software-related Testing for Homeland Defense																												
Linux Upgrades/ Handheld Replacements																												
18 Division Sensor C2 Sections (2 each) Fielded																												
5-5 ADA Battalion & 2-44 ADA Battalion Integration/Train/Fielding																												
(2) Full Operational Capability																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	Project (Number/Name) 126 / <i>FAAD C2 ED</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Production and Deployment Phase	4	2001	4	2014
FAAD Shelter Systems & Hardware Enter Sustainment	4	2014	4	2014
FAAD C2 Software Modifications for Emerging Capabilities	3	2006	4	2014
FAAD C2 Software Upgrades for Homeland Defense (NCR-IADS)	4	2007	4	2014
Continued Periodical Software-related Testing for Homeland Defense	4	2010	4	2014
Linux Upgrades/ Handheld Replacements	2	2010	4	2014
18 Division Sensor C2 Sections (2 each) Fielded	4	2009	3	2014
5-5 ADA Battalion & 2-44 ADA Battalion Integration/Train/Fielding	3	2013	1	2015
Full Operational Capability	4	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
146: Air & Msl Defense Planning Control Sys	-	12.861	13.532	15.757	-	15.757	15.965	16.106	16.288	14.466	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Air and Missile Defense Planning and Control System (AMDPCS) is an Army Objective Force System that provides integration of Air and Missile Defense (AMD) operations at all echelons. AMDPCS systems are deployed with Air Defense Artillery (ADA) brigades, Army Air and Missile Defense Commands (AAMDCs), and Air Defense and Airspace Management (ADAM) Cells at the Brigade Combat Teams (BCT's), Multi Functional Support Brigades and Divisions/Corps. AMDPCS systems also provide air defense capabilities to Homeland Defense systems. ADAM Cells provide the Commander at BCTs, Brigades and Divisions with air defense situational awareness and airspace management capabilities. They also provide the interoperability link with Joint, multinational and coalition forces. AMDPCS components are vital in the transformation of ADA units and the activation of the Air & Missile Defense (AMD) Battalions. AMDPCS has three major components: (1) The Air and Missile Defense Workstation (AMDWS) is an automated defense and staff planning tool that displays the common tactical and operational 3-dimensional air picture. AMDWS is the air picture provider for the Army, producing an integrated and correlated air picture at all tactical levels and locations. AMDWS is also an integral component of Integrated Base Defense. AMDWS provides an interoperability link to multinational air defense forces; (2) The Air Defense System Integrator (ADSI) is a communications data link processor and display system that provides near-real time, 3-dimensional, joint airspace situational awareness and fire direction command and control for AMD forces; (3) The Army Air Defense shelter configurations use automated data processing equipment, tactical communications, Common Hardware Systems, standard vehicles and tactical power to provide AMD unit commanders and staffs with the capabilities to plan missions, direct forces, and control the airspace.

FY16 funds the development, software engineering, testing and certification of the AMDWS, ADSI, and sheltered subsystem software as described below.

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

	FY 2014	FY 2015	FY 2016
Title: AMDWS Software Development	9.890	10.420	11.975
Description: Continue AMDWS development and support of LandWarNet as well as various Common Operating Environments (COEs). Complete AMDWS software engineering and development consistent with COE requirements, evolving the air and missile defense planning and control requirements to a net-centric environment, and fulfilling the air defense force operations capabilities identified in the AMD TRADOC capabilities requirement list. Virtualize AMDWS software development and rehost onto COE Real-Time Computing Environment common hardware systems. Support the evolving development of the Force Operations portion of the Integrated Air and Missile Defense (IAMD) system of Systems. Includes Host Based Security System (HBSS) (Information Assurance Compliance).			
FY 2014 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continued AMDWS software engineering consistent with Capability Set 15-16 / COE v2 requirements. Implemented evolving COE requirements for Command Post Computing Environment (CP CE) and Real Time / Safety Critical / Embedded Computing Environment (TR/SC/E CE). Continued to develop interfaces with IAMD systems. Supported the IAMD/ADAM Demo. Supported testing of interfaces with C2BMC and THAAD. Maintained interconnectivity with PATRIOT. FY 2015 Plans: Continue AMDWS software engineering consistent with Capability Set 15-16 / COE v2 requirements. Continue to develop interfaces with IAMD systems. Support testing of defense design planning with C2BMC and THAAD. Maintain interconnectivity with PATRIOT. Develop Fires Gateway Modularization of AMDPCS External Interfaces. Evaluate AMDPCS CP web development. FY 2016 Plans: Begin AMDWS software engineering consistent with Capability Set 17-18 / COE v3 requirements. Support test of COE v2 capability sets, including Network Integration Event (NIE) 16.1 and 16.2. Finalize software design requirements for IAMD interfaces. Continue to evolve system interfaces to PATRIOT. Implement interface to the Cooperative Aircraft Surveillance System (CASS), in support of commercial aircraft de-confliction.				
Title: ADSI Software Engineering and Development Description: Continue ADSI software engineering and development in software versions 15, including testing and certification of capabilities for TacView Situational Awareness, with air control support, scenario generation and 3-dimentional capability across various tactical data links. The version 15 software upgrades the ADSI OS to use Windows 7 and Red Hat Linux. FY 2014 Accomplishments: Supported testing of version 15.1 software. Conducted version 15.1 certification activities. Began ADSI version 16 software development. Continued to implement updates in the ADSI baseline as a result of changes in interface systems and MIL-STDs. FY 2015 Plans: Conduct Authority to Operate (ATO) and Army Interoperability Certification (AIC) of version 15.1 software. Continue to work virtual ADSI solution to keep ADSI common with COE software architecture strategy as a Real Time, Safety Critical, Embedded (RTSCE CE) system. Continue ADSI version 16 software development. FY 2016 Plans: Continue ADSI version 16 software development. Begin version 16.0 test activities, including certification. Complete implementation of baseline updates.		0.656	0.677	0.788
Title: Engineering, Development, Test and Evaluation		1.543	1.624	2.048

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>Description: Continued engineering, development, test and evaluation of the AMDPCS Family of Shelter (FoS) subsystems Objective configuration; continued evaluation of the AMDPCS tactical communications, data processing and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems.</p> <p>FY 2014 Accomplishments: Continued evaluation of AMDPCS FoS configurations. Assessed evolving technologies for providing system power and environmental control. Evaluated communications, secure wireless, secure VTC and data processing technologies for potential system applications.</p> <p>FY 2015 Plans: Continue evaluation of AMDPCS FoS configurations. Further assess and test power system technologies. Evaluate the Cooperative Air Surveillance System (CASS) as a technology insertion. Support ADAM at NIE 15.1. Support IBCS-ADAM participation at NIE 15.2.</p> <p>FY 2016 Plans: Continue evaluation of emerging technologies for future application in AMDPCS. Support IBCS-ADAM COE configurations at NIE 16.1 and 16.2. Continue to work closely with PM IAMD to identify the ADAM cell configuration to support IBCS Fire Control Network (FCN).</p>				
<p>Title: Software System Certification Testing, Accreditation, and Approval of Authority-to-Operate (ATO)</p> <p>Description: Continue software system certification testing, accreditation, and approval of ATOs for the various software systems; continue Army and Joint integration and interoperability assessments in compliance with ARCYBER and Host Based Security System (HBSS) requirements.</p> <p>FY 2014 Accomplishments: Continued software system certification testing, accreditation, and approval of ATOs; continued Army and Joint integration and interoperability assessments.</p> <p>FY 2015 Plans: Continue software system certification testing, accreditation, and approval of ATOs. Continue working software system certification testing, accreditation, and approval of IATO for COE v2 ADAM at NIE 16.1.</p> <p>FY 2016 Plans: Continue software system certification testing, accreditation, and approval of ATOs; continue Army and Joint integration and interoperability assessments.</p>		0.772	0.811	0.946
Accomplishments/Planned Programs Subtotals		12.861	13.532	15.757

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• AD5070: AD5070, AMDPCS	13.090	27.374	28.176	-	28.176	32.443	32.690	33.032	13.366	Continuing	Continuing
• PE 0604741A, Proj 149: <i>PE 0604741A, Proj 149, Counter-Rockets, Artillery & Mortar</i>	22.258	2.366	8.812	-	8.812	11.166	4.418	3.730	3.616	Continuing	Continuing
• SSN H30503: <i>SSN H30503, Rocket, Artillery, Mortar (RAM) Warn (Parent is IFPC Family of Systems: BZ0501)</i>	11.929	27.652	42.458	-	42.458	28.602	8.425	3.470	-	-	122.536
• SSN H30504: <i>SSN H30504, C-RAM Enhancements (Parent is IFPC Family of Systems: BZ0501)</i>	43.425	40.644	18.221	-	18.221	23.189	-	-	-	-	125.479
• PE 06043019A, Proj DU3: <i>PE 06043019A, Proj DU3, IFPC (FY12 PE0603305A IFPC II - Intercept)</i>	76.559	96.131	155.361	-	155.361	90.323	58.562	43.284	109.445	Continuing	Continuing
• PE 0605457A, Proj S40: <i>PE 0605457A, Proj S40, Army Integrated Air and Missile Defense (AIAMD)</i>	358.192	152.516	214.099	-	214.099	227.103	169.575	153.451	33.424	Continuing	Continuing
• SSN BZ5075: <i>SSN BZ5075, IAMD Battle Command System</i>	-	-	20.917	-	20.917	204.513	296.361	375.763	443.637	Continuing	Continuing
• PE 060482A, Proj E10: <i>PE 060482A, Proj E10, Sentinel</i>	1.796	5.221	12.309	-	12.309	11.465	10.971	12.191	30.277	Continuing	Continuing

Remarks

This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.

D. Acquisition Strategy

The acquisition strategy relies on non-development items (NDI) and evolutionary software development to rapidly meet the demands of air defense battle management command, control, communications, computers, and intelligence (BM/C4I) requirements and to keep pace with automated information technologies. The concept of evolutionary software development will be accomplished in a series of AMDWS and ADSI Block releases and upgrades. AMDPCS is being developed for both the Army's Active and Reserve components.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys

AMDWS is a prime component of C-RAM. It provides the Forward Operating Base (FOB) commander with clearance of fires display and enemy munitions flight paths.

E. Performance Metrics
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	24.863	1.628	Dec 2013	1.705	Dec 2014	1.757	Dec 2015	-		1.757	Continuing	Continuing	-
Subtotal			24.863	1.628		1.705		1.757		-		1.757	-	-	-
Remarks Not Applicable															
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AMDWS Software Development and Engineering	SS/CPFF	Northrop Grumman : Huntsville AL	101.012	9.792	Oct 2013	10.311	Oct 2014	11.660	Oct 2015	-		11.660	Continuing	Continuing	Continuing
ADSI Software Development and Engineering	SS/T&M	Ultra Electronics : Austin, TX	6.540	0.102	Feb 2014	0.107	Feb 2015	0.112	Feb 2016	-		0.112	Continuing	Continuing	Continuing
Developmental Engineering	Various	Various : Various	35.143	1.196	Dec 2013	1.259	Dec 2014	2.071	Dec 2015	-		2.071	Continuing	Continuing	Continuing
Subtotal			142.695	11.090		11.677		13.843		-		13.843	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification/Testing	Various	JITC : Ft Huachuca, AZ	0.955	0.066	Feb 2014	0.069	Feb 2015	0.073	Feb 2016	-		0.073	Continuing	Continuing	Continuing
Interoperability Assessment	Various	CTSF : Ft Hood, TX	1.261	0.077	May 2014	0.081	May 2015	0.084	May 2016	-		0.084	Continuing	Continuing	Continuing
Subtotal			2.216	0.143		0.150		0.157		-		0.157	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev					Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys			
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	169.774	12.861		13.532		15.757		-		15.757	-	-	-
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev								Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys																
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) Air and Missile Defense Workstation (AMDWS) V6.6 Full MR					AMDWS V6.6.2 Materiel Release (MR)																											
(2) Full Operational Capability AMDPCS																									FOC AMDPCS							
AMDWS Block IV Contract	AMDWS Block IV Contract																															
AMDWS Block V Contract													Block V Contract																			
AMDWS Software Block Development, Testing, Certification	AMDWS Software Block Testing (Includes Intra-Army Interoperability Cert)																															
AMDWS Capability Set and COE Development and Test	AMDWS CS & COE Development & Test																															
AMDWS AMD Interfaces: C2BMC, C2IS, C2AOS, AOC WS, Patriot, JLENS	C2BMC, C2IS, C2AOS, AOC WS, Patriot, JLENS																															
THAAD, C-RAM C2, etc													- IBCS, THAAD, C-RAM C2, TBMCs, COE, ABCS																			
ADSI Software Sustainment, Service Level Testing, Interoperability Certification	ADSI SW Sustainment, SLT, Interoperability Cert																															
14.1 & 14.2	14.1&2																															
COE ADAM Shelter in NIE 16.1/16.2 as System Under Evaluation									16.1/16.2																							
NIE X.X													NIE X.X																			
AMDPCS ADAM Shelter Production	AMDPCS ADAM Shelter Production																															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																	Date: February 2015											
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev								Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ADAM Cell and AMDPCS-A & B Sheltered Systems Fieldings	ADAM Cell and AMDPCS Sheltered Systems Fieldings																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	Project (Number/Name) 146 / <i>Air & Msl Defense Planning Control Sys</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air and Missile Defense Workstation (AMDWS) V6.6 Full MR	4	2014	4	2014
Full Operational Capability AMDPCS	1	2020	1	2020
AMDWS Block IV Contract	2	2011	2	2016
AMDWS Block V Contract	2	2016	2	2021
AMDWS Software Block Development, Testing, Certification	3	2007	4	2021
AMDWS Capability Set and COE Development and Test	1	2013	1	2021
AMDWS AMD Interfaces: C2BMC, C2IS, C2AOS, AOC WS, Patriot, JLENS, IBCS, - THAAD, C-RAM C2, etc	4	2012	4	2016
ADSI Software Sustainment, Service Level Testing, Interoperability Certification	1	2005	4	2021
14.1 & 14.2	1	2014	4	2014
COE ADAM Shelter in NIE 16.1/16.2 as System Under Evaluation	1	2016	3	2016
NIE X.X	1	2017	4	2020
AMDPCS ADAM Shelter Production	2	2001	4	2019
ADAM Cell and AMDPCS-A & B Sheltered Systems Fieldings	2	2001	4	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 149 / Counter-Rockets, Artillery & Mortar			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
149: Counter-Rockets, Artillery & Mortar	-	22.258	2.366	8.812	-	8.812	11.166	4.418	3.730	3.616	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Counter-Rocket, Artillery, Mortar (C-RAM) is an evolutionary, non-developmental program initiated by the Army Chief of Staff in response to the indirect fire (IDF) threat and a validated Operational Needs Statement (ONS). The primary mission of the C-RAM program is to develop, procure, field, and maintain a system-of-systems (SoS) that can detect RAM launches; provide localized warning to the defended area, with sufficient time for personnel to take appropriate action; intercept rounds in flight, thus preventing damage to ground forces or facilities; and enhance response to and defeat of enemy forces. The C-RAM capability is comprised of a combination of multi-service fielded and non-developmental item (NDI) sensors, command and control (C2) systems, warning systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System (LPWS)), with a commercial off-the-shelf (COTS) wireless local area network. The C-RAM SoS capability is currently deployed at multiple sites in Afghanistan, providing correlated air and ground pictures, linking units to the Army Mission Command and the Joint Defense Network, and using various forms of communications to provide situational awareness and exchange of timely and accurate information in order to synchronize and optimize automated Shape, Sense, Warn, Intercept, Respond, and Protect decisions.

The deployment of the C-RAM SoS was accomplished through an incremental acquisition process driven by urgent operational needs, theater priorities, and emerging capability requirements to provide a counter-RAM capability to combat forces. The C-RAM SoS approach was initially validated by a Proof of Principle demonstration in December 2004 and has undergone more than 25 Army Test and Evaluation Command (ATEC)-supported operational assessments to incorporate multiple improvements in response to changes in threat tactics and lessons learned. The C-RAM Sense and Warn (S&W) and Intercept capabilities are currently deployed to locations in support of Operation Freedom's Sentinel (OFS). Continuing C-RAM SoS improvement efforts, required to meet emerging theater requirements, include C2 and LPWS software upgrades as well as integration and deployment of Ku band Multi-Function Radio Frequency System (MFRFS) radars for an enhanced detection capability against stressing threats. Base RDTE funding for FY 2015 and beyond supports maintenance of C-RAM C2 basic Air Defense functionality. Support of the existing C-RAM SoS capability deployed in theater has been through the Overseas Contingency Operations (OCO) process.

Near-term directed enhancements to the C-RAM SoS capability included use of Army tactical communications rather than commercial systems; integration of Warn functionality into the C2 workstation to reduce complexity and footprint; integration with Unmanned Aircraft Systems (UAS) Universal Ground Control Station (UGCS) for enhanced situational awareness, combat identification, and response options; and dynamic clearance of unplanned fires (DCUF). Future enhancements (FY16-17) include testing and upgrade of DCUF in conjunction with the Advanced Field Artillery Tactical Data System (AFATDS) V2 for rapid and enhanced response.

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

	FY 2014	FY 2015	FY 2016
Title: C-RAM C2 Software Development and Enhancements	1.575	2.366	4.377

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 149 / Counter-Rockets, Artillery & Mortar		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>Description: Funds system-of-systems development and upgrades based on changes in threat, integration of emerging requirements from external PMs (Mission Command) and other Services/agencies, technology insertions (IP-based communications), and interoperability requirements (Joint interoperability, MIL Standard), and provides development and regression testing to ensure C-RAM C2 enhancements do not negatively impact the performance of the other C-RAM pillars. Includes Host Based Security System (HBSS) (Information Assurance compliance) but not Common Operating Environment (COE).</p> <p>FY 2014 Accomplishments: C-RAM C2 software development contract efforts.</p> <p>FY 2015 Plans: C-RAM C2 software development contract efforts.</p> <p>FY 2016 Plans: C-RAM C2 software development contract efforts.</p>				
<p>Title: Dynamic Clearance of Unplanned Fires (DCUF)</p> <p>Description: Provides an automated unplanned fires clearance capability, enabling the safe engagement of targets that would not be possible with current, manual procedures. Provides more rapid clearance of airspace and more effective engagements of unplanned targets.</p> <p>FY 2016 Plans: C-RAM C2 software development contract efforts to incorporate DCUF functionality.</p>		-	-	4.435
<p>Title: C-RAM Software Improvements to Enhance Intercept Capabilities</p> <p>Description: Funds a three-phased effort to enhance the performance of Land-based Phalanx Weapon System (LPWS) in theater by upgrading both the C-RAM C2 and LPWS software to enable the engagement of all indirect fire (IDF) threats within the LPWS engagement range, decreasing the number of IDF threats that impact on the Forward Operating Base (FOB). This is an OCO-funded effort in support of U.S. Forces-Afghanistan (USF-A) Operational Needs Statement (ONS) 14-19701, approved 23 April 2014.</p> <p>FY 2014 Accomplishments: C-RAM C2 and LPWS software development contract efforts to incorporate C-RAM Intercept enhancements.</p>		20.683	-	-
Accomplishments/Planned Programs Subtotals		22.258	2.366	8.812

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 149 / Counter-Rockets, Artillery & Mortar				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• SSN H30503: SSN H30503, Rocket, Artillery, Mortar (RAM) Warn (Parent is IFPC Family of Systems: BZ0501)	11.929	27.652	42.458	-	42.458	28.602	8.425	3.470	-	-	122.536	
• SSN H30504: SSN H30504, C-RAM Enhancements (Parent is IFPC Family of Systems: BZ0501)	43.425	40.644	18.221	-	18.221	23.189	-	-	-	-	125.479	
• PE 0604741A, Proj 146: PE 0604741A, Proj 146, Air & Missile Defense Planning and Control System	12.861	13.532	15.757	-	15.757	15.965	16.106	16.288	14.466	Continuing	Continuing	
• SSN AD5070: SSN 5070, Air & Missile Defense Planning and Control System	13.090	27.374	28.176	-	28.176	32.443	32.690	33.032	13.366	Continuing	Continuing	
• PE 0604319A, Proj DU3: PE 0604319A, Proj DU3, IFPC2 (FY12 PE0603305A IFPC II - Intercept)	76.559	96.131	155.361	-	155.361	90.323	58.562	43.384	109.495	Continuing	Continuing	
• PE 0605457A, Proj S40: PE 0605457A, Proj S40, Army Integrated Air and Missile Defense (AIAMD)	358.192	152.516	214.099	-	214.099	227.103	169.575	153.451	33.424	Continuing	Continuing	
• SSN BZ5075: SSN BZ5075, IAMD Battle Command System	-	-	20.917	-	20.917	204.513	296.361	375.763	443.637	Continuing	Continuing	
• PE 060482A, Proj E10: PE 060482A, Proj E10, Sentinel	1.796	5.221	12.309	-	12.309	11.465	10.971	12.191	30.277	Continuing	Continuing	
• PE 0604823A, Proj L86: PE 0604823A, Proj L86, Lightweight Counter Mortar Radar (LCMR)	-	-	2.967	-	2.967	3.230	3.463	3.500	3.475	Continuing	Continuing	
• PE 0604823A, Proj L88: PE 0604823A, Proj L88, Enhanced AN/TPQ-36	17.734	23.480	3.276	-	3.276	8.084	7.543	6.850	8.587	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 149 / Counter-Rockets, Artillery & Mortar			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• SSN B01301: SSN B01301, Lightweight Counter Mortar Radar (LCMR)	98.535	24.828	63.472	-	63.472	46.395	11.399	9.614	-	-	254.243
• SSN B05310: SSN B05310, Enhanced AN/TPQ-36	348.557	159.050	217.379	-	217.379	345.879	217.246	98.900	-	-	1,387.011
• SSN BZ7325: SSN BZ7325, Mod of In-Svc Equip (Firefinder Radars)	1.185	4.186	-	-	-	-	-	-	-	-	5.371
Remarks											
This program is an integral part of the Army Integrated Air and Missile Defense (IAMD) architecture.											
D. Acquisition Strategy											
The C-RAM program is following an evolutionary acquisition strategy for rapid fielding of mature technology to the user. The objective of the strategy is to balance needs, available technology, and resources to quickly provide a robust capability to engage RAM threats. Both C-RAM Intercept (LPWS) and RAM Warn have transitioned to acquisition programs and continue to capitalize on RDTE investments.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev						Project (Number/Name) 149 / Counter-Rockets, Artillery & Mortar			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	20.872	1.813		0.211		0.799		-		0.799	Continuing	Continuing	Continuing
Subtotal			20.872	1.813		0.211		0.799		-		0.799	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Northrop Grumman	C/CPIF	C-RAM C2 Development and Enhancements : Redondo Beach, CA	84.797	6.942	Mar 2014	2.155	Feb 2015	8.013	Feb 2016	-		8.013	Continuing	Continuing	Continuing
Raytheon Company	C/CPIF	Improved Interceptor : Tucson, AZ	77.675	-		-		-		-		-	-	77.675	-
Raytheon Company	C/CPIF	LPWS Enhancements : Tucson, AZ	0.000	3.500		-		-		-		-	-	3.500	-
Northrop Grumman	C/CPFF	Modeling and Simulation : Redondo Beach, CA	0.000	1.800		-		-		-		-	-	1.800	-
Subtotal			162.472	12.242		2.155		8.013		-		8.013	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OGA	Various	TBD : TBD	20.151	8.203		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			20.151	8.203		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>					Project (Number/Name) 149 / <i>Counter-Rockets, Artillery & Mortar</i>			
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	203.495	22.258		2.366		8.812		-		8.812	-	-	-
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 149 / Counter-Rockets, Artillery & Mortar
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
C-RAM System-of-Systems (SoS) Sustainment	Field/Sustain C-RAM SoS (Sense & Warn, Intercept) per Theater ONS / JUON																											
C-RAM C2 Development	C-RAM C2 Development, Updates, Virtualization, & Integration w/IAMD																											
C-RAM Directed Enhancements - Integ/Test/Fielding	C2 & Warn Improvements, DCUF Upgrades, C2 Integ. w/UAS GCS																											
C-RAM SoS Improvements - Stressing Threat Detection	Deploy/Sustain Ku MFRFS Radars																											
(1) Ku MFRFS Decision Point									1 Ku MFRFS Disposition/Retention Decision																			
C-RAM Intercept (LPWS) Fielding/NET	C-RAM Intercept Fldg to 5-5 & 2-44 ADA																											
(2) 5-5 ADA Fielding	2																											
(3) 2-44 ADA Fielding					3 2-44 ADA E-Date																							
(4) C-RAM Intercept Operational Assessment (OA)					C-RAM Intercept OA 4																							
C-RAM Intercept Logistics Demonstration					C-RAM Intercept Log Demo																							
(5) C-RAM Intercept Materiel Release									5 C-RAM Intercept Materiel Release																			
C-RAM Intercept (LPWS) Sustainment	Sustain C-RAM Intercept (LPWS) at CONUS Units																											
(6) RAM Warn Full Rate Production (FRP) Decision	6 RAM Warn FRP Decision Review																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	
		Project (Number/Name) 149 / <i>Counter-Rockets, Artillery & Mortar</i>	

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
RAM Warn Production and Fielding	<div style="background-color: blue; color: white; text-align: center; padding: 2px;">RAM Warn Production / Fielding</div> <div style="background-color: red; height: 500px; width: 100%;"></div>																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>	Project (Number/Name) 149 / <i>Counter-Rockets, Artillery & Mortar</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
C-RAM System-of-Systems (SoS) Sustainment	1	2007	4	2020
C-RAM C2 Development	1	2013	4	2020
C-RAM Directed Enhancements - Integ/Test/Fielding	1	2012	4	2017
C-RAM SoS Improvements - Stressing Threat Detection	1	2012	1	2017
Ku MFRFS Decision Point	2	2016	2	2016
C-RAM Intercept (LPWS) Fielding/NET	4	2013	3	2016
5-5 ADA Fielding	1	2014	1	2014
2-44 ADA Fielding	1	2015	1	2015
C-RAM Intercept Operational Assessment (OA)	2	2015	2	2015
C-RAM Intercept Logistics Demonstration	1	2016	2	2016
C-RAM Intercept Materiel Release	1	2016	1	2016
C-RAM Intercept (LPWS) Sustainment	1	2014	4	2020
RAM Warn Full Rate Production (FRP) Decision	3	2014	3	2014
RAM Warn Production and Fielding	3	2013	4	2018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604742A I Constructive Simulation Systems Development							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	19.596	4.394	23.364	-	23.364	15.043	16.041	15.449	11.046	Continuing	Continuing
361: Intelligence Simulation Systems	-	4.548	0.519	5.513	-	5.513	6.114	6.435	6.326	2.497	Continuing	Continuing
362: Jnt Land Component Constructive Trng	-	15.048	3.875	17.851	-	17.851	8.929	9.606	9.123	8.549	Continuing	Continuing

Note

FY16 Budget adjustments received to achieve requirements.

A. Mission Description and Budget Item Justification

This program element funds the development of constructive and wargame simulations used to realistically train commanders and their battle staffs on today's complex battlefield conditions. Project 361 funds the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) that provides Warfighting Commanders at all echelons the ability to train with Intelligence, Surveillance, and Reconnaissance (ISR) products based on realistic ISR assets, people (including the maneuver commander, G-2, G-3, collection manager, analyst/operator) and processes. IEWTPT provides a realistic Intelligence target environment for Multi-Intelligence disciplines. Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), Human Intelligence (HUMINT), Counterintelligence (CI) and Geospatial Intelligence (GEOINT) and must stimulate multiple systems such as: PROPHET, Distributed Common Ground Station-Army (DCGS-A), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Tactical Unmanned Aerial Vehicle (TUAV), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES). IEWTPT is the only Army Simulation System supporting ISR training from the Warfighter to the Military ISR Analyst/System Operator. Project 362, Joint Land Component Constructive Training Capability (JLCCTC) supports Army Title X training worldwide for Army Commanders and their staff at Mission Command Training Centers (MCTC), Training and Doctrine Command (TRADOC) facilities, and other customer locations. JLCCTC trains Commanders and their staff in Decisive Actions to include offensive, defensive, stability, and civil support operations. JLCCTC is a software modeling and simulation capability that contributes to Army Training Mission Area by providing appropriate levels of model and simulation resolution and fidelity to support unit collective and combined arms training. The JLCCTC provides accurate representations of tactically and operationally relevant land warfare operations executed in a contemporary Joint operating environment/context.

FY 2016 funding continues product improvements with annual releases of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) and continues development, integration and test, verification and validation activities of the Joint Land Component Constructive Training Capability (JLCCTC).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604742A / Constructive Simulation Systems Development			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	17.004	4.394	22.097	-	22.097
Current President's Budget	19.596	4.394	23.364	-	23.364
Total Adjustments	2.592	-	1.267	-	1.267
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.000	-			
• SBIR/STTR Transfer	-0.408	-			
• Adjustments to Budget Years	-	-	1.267	-	1.267

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>				Project (Number/Name) 361 / <i>Intelligence Simulation Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
361: <i>Intelligence Simulation Systems</i>	-	4.548	0.519	5.513	-	5.513	6.114	6.435	6.326	2.497	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Intelligence & Electronic Warfare Tactical Proficiency Trainer (IEWTPT), a Non-System Training Device (NSTD), supports training intelligence soldiers by stimulating Military Intelligence (MI) organic or surrogate equipment. It enables sustainment of critical individual and collective tasks/skills and is the core of the United States Army Intelligence Center of Excellence (USAICoEs) and MI holistic training strategy. This includes both stand-alone and network enabled training capabilities. IEWTPT provides a realistic Intelligence target environment for Multi-Intelligence disciplines. Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), Human Intelligence (HUMINT), Counterintelligence (CI) and Geospatial Intelligence (GEOINT) and must stimulate multiple systems such as: PROPHET, Distributed Common Ground System-Army (DCGS-A), Tactical Ground Station (TGS), Joint Surveillance Target Attack Radar System-Common Ground Station (JSTARS-CGS), Tactical Unmanned Aerial Vehicle (TUAV), Tactical Exploitation System/Distributed Tactical Exploitation System (TES/DTES). IEWTPT provides static and dynamic training events (interactive environment for individual, collective, and Live, Virtual, and Constructive integrated mission rehearsals/exercises) in an integrated, playback, and stand alone mode. IEWTPT is composed of four components: Constructive Simulation, Technical Control Cell (TCC), Target Signature Arrays (TSA)/Simulation Interface, and the HUMINT Control Cell (HCC). The IEWTPT TCC provides critical Intel enhancements to a constructive simulation to stimulate go-to-war or surrogate Intelligence, Surveillance and Reconnaissance (ISR) systems where system operators/analysts are able to exploit exercise intelligence data during training, just as they would in a "real world" operation.

FY 2016 funding supports U.S. Army Readiness with the development of interface capabilities for the Intelligence, Surveillance, Reconnaissance (ISR) platform programs/systems of records, and funds the development of web-base capabilities and task analysis for "Cloud" training requirements for both the Human Control Cell (HCC) and Technical Control Cell (TCC).

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

	FY 2014	FY 2015	FY 2016
Title: IEWTPT development, integration and support.	3.881	-	4.684
Description: Continue IEWTPT development, integration and support to the user community.			
FY 2014 Accomplishments: Unified SIGINT Tools in web client. Developed DCGS-A interfaces, source data, and stimulation. Developed DCGS-A HUMINT Sources and Reports modeling. Provided Biometrics and Forensics Correlated Scenario Generation. Developed Infrastructure intel sensor model support.			
FY 2016 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development	Project (Number/Name) 361 / Intelligence Simulation Systems		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Will support V6.0 release for the development of detailed simulation interface capabilities for Intelligence, Surveillance, Reconnaissance (ISR) platform programs/systems in the PEO Intelligence Electronic Warfare & Sensors portfolio to support homestation intelligence training. The main effort will be to develop capabilities in IEWTPT that support the training requirements for the DCGS-A program Processing, Exploitation and Dissemination (PED) mission. Will develop HUMINT-Counter-intelligence and Human Intelligence Automated Reporting and Collection Systems (CHARCS) and Machine Foreign Language Translation, gesture recognition, retinal projection, and machine learning for integration into simulation /user environment. Will finalize PM Prophet SIGINT collection training capabilities for testing, certification and integration into software baseline. Will develop and integrate Aerial ISR training capabilities into program baseline for the Enhanced Medium Altitude Reconnaissance Surveillance System (EMARSS). Will develop initial web-based delivery capability for the Human Control Cell (HCC) and tasks analysis for cloud capabilities to support Technical Control Cell (TCC) distributed training requirement.				
Title: Government Program Management for the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT). Description: Government Program Management for the IEWTPT program.		0.667	0.519	0.829
FY 2014 Accomplishments: Provided for the continuation of program oversight, lifecycle management planning, and Combat Developer support. Enabled the configuration control and oversight of interfaces with complementary programs, coordination of integration activities with external programs and continuous participation in planning, integration, and testing of IEWTPT components in a federation (family of systems) environment. Covered market surveys, technology insertion studies and reviews of deliverables needed to be ready for contract activities supporting the program.				
FY 2015 Plans: Provides for the continuation of program oversight, lifecycle management planning, and Combat Developer support. Enables the configuration control and oversight of interfaces with complementary programs. Allows continuous participation in planning, integration, and testing of IEWTPT components in a federation (family of systems) environment. Covers market surveys, technology insertion studies and reviews of deliverables needed to be ready for contract activities supporting the program				
FY 2016 Plans: Will provide for the continuation of program oversight, lifecycle management planning, and Combat Developer support. Will enable the configuration control and oversight of interfaces with complementary programs. Will allow continuous participation in planning, integration, and testing of IEWTPT components in a federation (family of systems) environment. Will cover technology insertion studies and reviews of deliverables needed to be ready for contract award for the program.				
Accomplishments/Planned Programs Subtotals		4.548	0.519	5.513

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>				Project (Number/Name) 361 / <i>Intelligence Simulation Systems</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Appropriation NA0102: <i>Appropriation NA0102; Training Devices, Nonsystem, Intelligence</i>	-	2.746	3.797	-	3.797	3.883	7.091	4.930	1.846	Continuing	Continuing
• TBWG, OMA 121: <i>TBWG, OMA 121</i>	-	0.234	2.097	-	2.097	2.543	2.613	2.696	2.748	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
A future IEWTPT system contract, will continue the development, testing, version 6.0 information assurance, production, integration, fielding, training, hardware/software updates, and exercise support of the IEWTPT system. Software version releases are planned, as well as engineering for product improvement maintenance releases.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>						Project (Number/Name) 361 / <i>Intelligence Simulation Systems</i>			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PEO STRI : Orlando, FL	7.345	0.667		0.519		0.829		-		0.829	Continuing	Continuing	Continuing
Subtotal			7.345	0.667		0.519		0.829		-		0.829	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HCC Technology	C/CPFF	TBD : TBD	6.600	-		-		1.300	Jun 2016	-		1.300	Continuing	Continuing	Continuing
Eng & Manufacturing Dev.	C/CPFF	General Dynamics C4 Systems : Orlando, FL	51.505	3.881	Aug 2014	-		3.384	Jun 2016	-		3.384	Continuing	Continuing	Continuing
Subtotal			58.105	3.881		-		4.684		-		4.684	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Technical Support	TBD	TBD : TBD	2.743	-		-		-		-		-	-	2.743	2.743
Subtotal			2.743	-		-		-		-		-	-	2.743	2.743
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TEMP Support	Various	Multiple : Various	0.319	-		-		-		-		-	-	0.319	0.319
Test Engineering Support	Various	Multiple : Various	1.313	-		-		-		-		-	-	1.313	1.313
Subtotal			1.632	-		-		-		-		-	-	1.632	1.632

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>					Project (Number/Name) 361 / <i>Intelligence Simulation Systems</i>			
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	69.825	4.548		0.519		5.513		-		5.513	-	-	-
Remarks													

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

Date: February 2015

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604742A / *Constructive Simulation Systems Development*

Project (Number/Name)
361 / *Intelligence Simulation Systems*

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TCC/HCC Development/Integration/Improvements																												
(1) Version 4.0 Security Accred.			▲1																									
(2) Version 4.0 Release				▲2																								
(3) Version 5.0 Security Accred.							▲3																					
(4) Version 5.0 Release								▲4																				
(5) Version 6.0 Security Accred.										▲5																		
(6) Version 6.0 Release											▲6																	
(7) Version 7.0 Security Accred.													▲7															
(8) Version 7.0 Release														▲8														
(9) Version 8.0 Security Accred.																▲9												
(10) Version 8.0 Release																	▲10											
(11) Version 9.0 Security Accred.																					▲11							
(12) Version 9.0 Release																							▲12					

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																									
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development								Project (Number/Name) 361 / Intelligence Simulation Systems																							
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
(1) Version 10.0 Security Accred.																																						1			
(2) Version 10.0 Release																																						2			

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>	Project (Number/Name) 361 / <i>Intelligence Simulation Systems</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TCC/HCC Development/Integration/Improvements	4	2007	4	2020
Version 4.0 Security Accred.	3	2014	3	2014
Version 4.0 Release	4	2014	4	2014
Version 5.0 Security Accred.	3	2015	3	2015
Version 5.0 Release	4	2015	4	2015
Version 6.0 Security Accred.	3	2016	3	2016
Version 6.0 Release	4	2016	4	2016
Version 7.0 Security Accred.	3	2017	3	2017
Version 7.0 Release	4	2017	4	2017
Version 8.0 Security Accred.	3	2018	3	2018
Version 8.0 Release	4	2018	4	2018
Version 9.0 Security Accred.	3	2019	3	2019
Version 9.0 Release	4	2019	4	2019
Version 10.0 Security Accred.	3	2020	3	2020
Version 10.0 Release	4	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development				Project (Number/Name) 362 / Jnt Land Component Constructive Trng			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
362: Jnt Land Component Constructive Trng	-	15.048	3.875	17.851	-	17.851	8.929	9.606	9.123	8.549	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Land Component Constructive Training Capability (JLCCTC) supports Army Title X training worldwide for Army Commanders and their staff at Mission Command Training Centers (MCTC), Training and Doctrine Command (TRADOC) facilities, and other customer locations. JLCCTC trains Commanders and their staff in Decisive Actions to include offensive, defensive, stability, and civil support operations. JLCCTC is a software modeling and simulation capability that contributes to Army Training Mission Area by providing appropriate levels of modeling and simulation resolution and fidelity to support unit collective and combined arms training. JLCCTC provides a composable federation configurable to any combination of models and simulations, as required by training exercise intent/design. JLCCTC provides accurate representations of tactically and operationally relevant land warfare operations executed in a contemporary Joint operating environment/context and in support of Army Training and Readiness.

FY16 funding supports development, integration and test, and verification and validation activities of JLCCTC V5.6/V7.1. Additionally, JLCCTC will be supporting integration activities with Live, Virtual, Constructive-Integrating Architecture (LVC-IA) and continue the Constructive Strategy Implementation (Single Federation) activities.

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

	FY 2014	FY 2015	FY 2016
Title: Improve JLCCTC software models to comply with emerging Common Operating Environment (COE)/Computing Environment (CE) requirements. Description: Improve JLCCTC software models to comply with emerging COE/CE requirements. FY 2016 Plans: Will continue improvements JLCCTC software models for COE compliance.	-	-	1.900
Title: Improve JLCCTC software models to meet emerging Mission Command (MC) stimulation and Information Assurance (IA) requirements. Description: Improve JLCCTC software models to meet emerging Mission Command (MC) stimulation and Information Assurance (IA) requirements. FY 2016 Plans:	-	-	3.551

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>	Project (Number/Name) 362 / <i>Jnt Land Component Constructive Trng</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Will continue improvements of JLCCTC software models to support MC and IA requirements.			FY 2016
Title: Improve JLCCTC software models to meet emerging warfighter requirements for Training Relevance of Commander and staff training (Battalion thru Theater Level). Description: Improve JLCCTC software models to meet emerging warfighter requirements for Training Relevance of Commander and staff training (Battalion thru Theater Level). FY 2016 Plans: Will continue enhancing/improving JLCCTC software models to support Commander and staff training.		-	2.050
Title: Technical Engineering Services/Support for JLCCTC Program Description: Technical Engineering Services/Support for JLCCTC Program FY 2016 Plans: Will continue Engineering and Support for JLCCTC Program.		-	1.300
Title: Engineering and Manufacturing Development (EMD) phase contract activity for JLCCTC Software Models. Description: Continue EMD phase contract activities for JLCCTC Software Models. FY 2014 Accomplishments: Verified and validated JLCCTC software models		1.809	-
Title: Engineering and Manufacturing Development (EMD) phase contract for the Integration of JLCCTC. Description: Continue EMD phase contract activities for the Integration of JLCCTC. FY 2014 Accomplishments: Continued integration of JLCCTC components for interoperability.		2.653	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for User Interface Enhancements. Description: Continue EMD phase contract activities for User Interface Enhancements. FY 2014 Accomplishments: Developed and integrated user interface enhancements for Army training applications.		4.028	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for Constructive Strategy Implementation Description: Constructive Strategy Implementation		-	3.650

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development					Project (Number/Name) 362 / Jnt Land Component Constructive Trng		
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
FY 2016 Plans: Constructive Strategy Implementation												
Title: Government System Test and Evaluation for the Joint Land Component Constructive Training Capability (JLCCTC) Program. Description: Government System Test and Evaluation for the Joint Land Component Constructive Training Capability (JLCCTC). FY 2014 Accomplishments: Develop and evaluate system performance and conduct system test events. FY 2016 Plans: Will develop and evaluate system performance and conduct system test events (Integration and Testing, Value Engineering, Operational Readiness Event).										1.575	-	1.200
Title: Government Program Management for the Joint Land Component Constructive Training Capability (JLCCTC) Program. Description: Government Program Management for JLCCTC. FY 2014 Accomplishments: Government Program Management for JLCCTC. FY 2015 Plans: Government Program Management for JLCCTC. FY 2016 Plans: Government Program Management for JLCCTC.										4.983	3.875	4.200
Accomplishments/Planned Programs Subtotals										15.048	3.875	17.851
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• NSTD Command & Control: OPA, NA0103	18.067	27.427	47.573	-	47.573	43.024	46.882	46.443	49.417	Continuing	Continuing	
• TBWG: OMA, 121	7.237	7.284	10.400	-	10.400	10.668	10.901	11.135	11.298	Continuing	Continuing	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>	Project (Number/Name) 362 / <i>Jnt Land Component Constructive Trng</i>
D. Acquisition Strategy New JLCCTC Indefinite Delivery/Indefinite Quantity (ID/IQ) contract was awarded on 27 March 2013. This contract has a period of performance of 5 years with a total ceiling amount not to exceed \$146M.		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development				Project (Number/Name) 362 / Jnt Land Component Constructive Trng					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI : Orlando, FL	46.205	4.983		3.875		4.200		-		4.200	Continuing	Continuing	Continuing
Subtotal			46.205	4.983		3.875		4.200		-		4.200	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Constructive Strategy Implementation	C/CPFF	Various : Various	0.000	-		-		3.650		-		3.650	Continuing	Continuing	Continuing
Integration of JLCCTC	SS/FFP	Various : Various	55.432	1.419		-		-		-		-	Continuing	Continuing	Continuing
Improve JLCCTC to meet emerging warfighter requirements.	C/CPFF	Lockheed Martin : Orlando, FL	0.000	-		-		2.050	Jan 2016	-		2.050	Continuing	Continuing	Continuing
MC Systems Stimulation and Information Assurance	C/CPFF	Lockheed Martin : Orlando, FL	0.000	-		-		3.551	Mar 2016	-		3.551	Continuing	Continuing	Continuing
COE Compliance	C/CPFF	Lockheed Martin : Orlando, FL	0.000	-		-		1.900	Mar 2016	-		1.900	Continuing	Continuing	Continuing
MRF-W Development of Army Training System	C/CPFF	Various : Various	6.134	4.066		-		-		-		-	Continuing	Continuing	Continuing
Development of logistics model	Various	Tapestry : San Diego, CA	20.615	-		-		-		-		-	-	20.615	20.615
WARSIM Development of Army Training System	SS/CPFF	Lockheed Martin Info Systems : Orlando, FL	122.061	-		-		-		-		-	-	122.061	122.570
Subtotal			204.242	5.485		-		11.151		-		11.151	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>						Project (Number/Name) 362 / <i>Jnt Land Component Constructive Trng</i>					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering & Tech Spt (SE, CM, Lab, Documentation)	Various	Various : Various	8.777	1.335		-		1.300	Jan 2016	-		1.300	Continuing	Continuing	Continuing
Subtotal			8.777	1.335		-		1.300		-		1.300	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System T&E (I&T, VE, ORE)	Various	Various : Various	16.403	3.245		-		1.200	May 2016	-		1.200	Continuing	Continuing	Continuing
Verification, Validation and Accreditation	Various	Various : Various	13.244	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			29.647	3.245		-		1.200		-		1.200	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			288.871	15.048		3.875		17.851		-		17.851	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development								Project (Number/Name) 362 / Jnt Land Component Constructive Trng																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) JLCCTC V5.5 / V7.0										JLCCTC V5.5 / V7.0																											
(2) JLCCTC V5.6 / V7.1														2																							
(3) JLCCTC V8.0																						3															
(4) JLCCTC VR																														4							
JLCCTC Integration into LVC-IA										LVC-IA Integ																											
JLCCTC Constructive Strategy Implementation (Single Federation)														JLCCTC Constructive Strategy Implementation (SF)																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>	Project (Number/Name) 362 / <i>Jnt Land Component Constructive Trng</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JLCCTC V5.5 / V7.0	4	2014	4	2014
JLCCTC V5.6 / V7.1	4	2016	4	2016
JLCCTC V8.0	4	2018	4	2018
JLCCTC VR	4	2020	4	2020
JLCCTC Integration into LVC-IA	1	2014	4	2020
JLCCTC Constructive Strategy Implementation (Single Federation)	2	2015	4	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	6.498	11.079	8.960	-	8.960	11.014	10.740	10.227	10.127	Continuing	Continuing
L59: <i>Diagnost/Expert Sys</i>	-	4.548	7.072	4.699	-	4.699	7.304	6.626	5.894	5.958	Continuing	Continuing
L65: <i>Test Equipment Development</i>	-	1.950	4.007	4.261	-	4.261	3.710	4.114	4.333	4.169	Continuing	Continuing

Note

FY 2016, \$5.222 million reduction to support higher priority projects

A. Mission Description and Budget Item Justification

This program element (PE) provides for development and testing of general-purpose test equipment, state-of-the-art diagnostics and prognostics technologies, and software and systems to support the increasingly complex electronic components of the Army's new and upgraded weapon systems. It focuses on implementation of commercial test and diagnostic technologies across multiple weapon platforms to minimize the cost of troubleshooting and maintenance of Army equipment in the field.

Modular, reconfigurable automatic and semi-automatic systems are being developed under this program to satisfy weapon system test and diagnostics requirements. The Next Generation Automatic Test System (NGATS), currently under development, provides state-of-the-art test and diagnostic capabilities to support current and future weapon systems. It is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure, and it will replace several aging automatic test systems (ATS) that are becoming prohibitively expensive to operate and maintain.

This PE also provides for continued development and improvement of general-purpose test equipment and calibration standards with emphasis on the incorporation of digital electronics and tailoring of configurations to improve deployability, mobility and survivability of the support equipment.

FY 2016 Base funding for this program continues development of the Army's standard NGATS which will improve deployability and mobility of test and diagnostic equipment. The NGATS provides state-of-the-art test and diagnostic capabilities and a means for reducing the Army's test equipment operating and support costs and the costs for supporting a number of the Army's vital warfighting systems. The FY 2016 funding will develop or significantly modify test equipment to satisfy modular force and homeland security support requirements that cannot be accommodated with test equipment currently available in the commercial marketplace such as radio frequency (RF) and electro-optic (EO) testing capability. It will also provide for technology enhancements to the Army's standard at-system tester to meet test and diagnostic requirements of the supported weapon systems, develop/redesign test program sets and hardware for support of legacy and emerging weapon systems, and develop a network centric software framework for NGATS.

The FY 2016 funding request was reduced for \$2.002 million to account for the availability of prior year execution balances.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604746A / Automatic Test Equipment Development			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	6.697	11.084	14.182	-	14.182
Current President's Budget	6.498	11.079	8.960	-	8.960
Total Adjustments	-0.199	-0.005	-5.222	-	-5.222
• Congressional General Reductions	-0.199	-0.005			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-5.222	-	-5.222

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L59 / Diagnost/Expert Sys			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
L59: Diagnost/Expert Sys	-	4.548	7.072	4.699	-	4.699	7.304	6.626	5.894	5.958	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project funds development of and system enhancements for the Next Generation Automatic Test System (NGATS) and the Maintenance Support Device (MSD). The NGATS is a general-purpose automatic test system (ATS) that provides test and diagnostic capabilities required to support current and future weapons and combat support systems and will facilitate retirement of aging and obsolete test equipment that is imposing increasing logistics and operations and support cost burdens. It is the platform for transitioning Agile Rapid Global Combat Support System (ARGCS) technologies into the Army weapon system support structure. The ARGCS initiative was sponsored by the Department of Defense, and all Services are expected to transition demonstrated technologies into their ATS programs. The MSD is the Army's standard at-system tester and requires continuing upgrades to support technology advancements in the supported weapon systems. This project funds development projects to incorporate the most current relevant technology into the next generation MSD, supports capability enhancement of the wireless at-platform test set (WATS), develops capabilities to minimize or eliminate Army dependency on expensive proprietary software to support tactical vehicles, integrates MSD into the Brigade Combat Team information structure as the at-platform data collection device for the Army's condition-based maintenance plus (CBM+) initiative and maintains compatibility with emerging aviation platform hardware bus technology and aviation notebook software interface requirements. This project also provides for continuing efforts in the development and testing of common procedures utilizing existing test program sets and software applications; and market surveys of commercially available test equipment, methods and procedures to determine applicability to Army requirements. The test and diagnostic systems and procedures developed under this project are essential for ensuring the operational readiness, accuracy and effectiveness of the Army's warfighting systems.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: NGATS System Level Calibration/Verification Program									0.600	1.200	-	
Description: Develop and test the NGATS system level calibration/verification program												
FY 2014 Accomplishments: Develop and test the NGATS system level calibration/verification program												
FY 2015 Plans: Continue development and testing of the NGATS system level calibration/verification program												
Title: NGATS Logistics Support Products									0.100	0.750	0.500	
Description: Develop NGATS initial logistics support products (including provisioning, technical manuals and calibration)												
FY 2014 Accomplishments:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development	Project (Number/Name) L59 / Diagnost/Expert Sys		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue development of initial logistics support products. FY 2015 Plans: Continue development of initial logistics support products. FY 2016 Plans: Complete development of initial logistics support products.				
Title: Developmental and Operational Follow-on Testing Description: Complete Increment 1 developmental and operational follow-on testing activities FY 2016 Plans: Complete Increment 1 developmental and operational follow-on testing activities to include assessment/verification of the development of remaining, needed capability of existing low-rate initial production systems to operate with all existing test program sets used with legacy automatic test equipment, along with any necessary follow-on system testing.		-	-	1.000
Title: NGATS Radio Frequency (RF) Test Capability Description: Develop and integrate NGATS RF test capability FY 2014 Accomplishments: Initiate development and integration of NGATS RF test capability FY 2015 Plans: Continue development and integration of NGATS RF test capability FY 2016 Plans: Continue development and integration of NGATS RF test capability		0.500	1.000	0.500
Title: NGATS Increment 2 Description: Develop and test hardware and software for NGATS Increment 2 system FY 2014 Accomplishments: Continue development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, TOW Missile System, Paladin and CROWS II) FY 2015 Plans:		1.868	1.100	0.885

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / <i>Automatic Test Equipment Development</i>	Project (Number/Name) L59 / <i>Diagnost/Expert Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continue development and testing of hardware and software for support of Increment 2 systems (Avenger, Multiple Launch Rocket System, TOW Missile System, Paladin and CROWS II)			
FY 2016 Plans: Continue development and testing of hardware and software for support of Increment 2 systems (Stryker, Common Remotely Operated Weapons Station (CROWS II), Counter RCIED (Radio-Controlled Improvised Explosive Device) Electronic Warfare (CREW) Duke, Precision Fires, and Joint Assault Bridge (JAB)			
Title: NGATS Electro-Optics Subsystem Description: Develop and test hardware and software for NGATS electro-optics (EO) subsystem (to include the capability to support new ground and aerial sensors for unmanned air and ground vehicles) FY 2014 Accomplishments: Continue development and testing of hardware and software for NGATS EO subsystem and for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II and Stryker Remote Weapons Station) FY 2015 Plans: Continue development and testing of hardware and software for NGATS EO subsystem and for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II and Stryker Remote Weapons Station) FY 2016 Plans: Continue development and testing of hardware and software for NGATS EO subsystem and for support of Increment 3 systems (Apache, Kiowa Warrior, CROWS II and Stryker Remote Weapons Station)		1.000	0.500
Title: Additional Software Capabilities Description: Develop software capabilities to incorporate common logistics operating environment (CLOE)/netcentric and embedded diagnostics data collection and analysis for closed loop diagnostic maintenance in support of condition-based maintenance FY 2014 Accomplishments: Continue development of expanded software capabilities FY 2015 Plans: Continue development of a network centric software framework to facilitate message communication, configuration status accounting, and data exchange with other components of the global information grid (GIG). FY 2016 Plans:		0.250	0.250
			0.200

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development	Project (Number/Name) L59 / Diagnost/Expert Sys		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue development of a network centric software framework to facilitate message communication, configuration status accounting, and data exchange with other components of the global information grid (GIG).				
Title: Power and Weight Enhancements Description: Develop power and weight enhancements for NGATS FY 2014 Accomplishments: Complete development of power and weight enhancements.		0.030	-	-
Title: NGATS Performance Enhancement Description: NGATS core instrument/software modifications to increase NGATS performance. FY 2015 Plans: Initiate development of NGATS core instrument/software modifications to increase NGATS performance. FY 2016 Plans: Continue development of NGATS core instrument/software modifications to increase NGATS performance.		-	0.217	0.300
Title: MSD Technology Enhancements Description: Incorporate current relevant technology into the next-generation MSD and support capability enhacement of the wireless at-platform test set (WATS). Develop capabilities to minimize or eliminate Army dependency on proprietary software to support tactical vehicles, integrate MSD into the Brigade Combat Team information structure as the at-platform data collection device for the Army's CBM+ initiative, and maintain compatibility with emerging aviation platform hardware bus technology and aviation notebook software interface requirements. FY 2015 Plans: Continue enhancement of WATS radio technology and common electronics package augmentation to provide at-platform wireless test support for Army vehicle and weapon systems platforms to include CBM+. Devise methods to minimize or eliminate Army dependency on proprietary software to support current and future tactical vehicles. FY 2016 Plans: Complete enhancement of WATS radio technology and common electronics package augmentation to provide at-platform wireless test support for Army vehicle and weapon systems platforms to include CBM+. Devise methods to minimize or eliminate Army dependency on proprietary software to support current and future tactical vehicles.		-	0.805	0.864
Title: Smart TPSs/Enhanced Self Test		-	0.750	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development			Project (Number/Name) L59 / Diagnost/Expert Sys					
B. Accomplishments/Planned Programs (\$ in Millions)											
							FY 2014	FY 2015	FY 2016		
Description: Develop enhanced smart TPS hardware and software and enhanced self test											
FY 2015 Plans: Initiate development of enhanced self test strategy for NGATS.											
Title: Abrams/Bradley Test Program Set (TPS) Design							-	0.500	-		
Description: Design, test and evaluate Abrams/Bradley TPSs											
FY 2015 Plans: Complete design, test and evaluation of Abrams/Bradley TPSs											
Title: Abrams/Bradley EO TPS Development							0.200	-	-		
Description: Develop Abrams/Bradley TPSs for use with NGATS EO asset											
FY 2014 Accomplishments: Continue development of Abrams/Bradley TPSs											
Title: EO TPS Development							-	-	0.200		
Description: Develop EO TPSs for use with NGATS EO asset											
FY 2016 Plans: Initiate development of TPSs.											
Accomplishments/Planned Programs Subtotals							4.548	7.072	4.699		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• ∴ OPA3, SSN MB4000, Integrated Family of Test Equipment (IFTE)	42.460	37.482	34.487	-	34.487	30.511	27.254	26.981	27.540	Continuing	Continuing
Remarks None.											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / <i>Automatic Test Equipment Development</i>	Project (Number/Name) L59 / <i>Diagnost/Expert Sys</i>
<p><u>D. Acquisition Strategy</u></p> <p>This developmental project consists of organic and contractual actions. When the necessary expertise and capability are available within the Department of Defense, services required for the individual development projects are ordered from the government source; otherwise, commercial contracts are used. Equipment required for developmental projects is obtained by contract from the commercial supplier. Developmental efforts for the Next Generation Automatic Test System (NGATS) are being completed under a number of contracts awarded to the prime contractor for the Integrated Family of Test Equipment off-platform testers and other contractors with automatic test equipment (ATE) and test program set development capabilities. Full-rate production of the system was a competitive award. NGATS is following an evolutionary acquisition strategy using incremental development to satisfy Army depot and field testing requirements for new and existing systems. It will replace existing legacy Army ATE (i.e., Base Shop Test Facility (BSTF)(V)3, BSTF(V)5, and Direct Support Electrical System Test Set) as well as Army depot system-specific ATE.</p> <p><u>E. Performance Metrics</u></p> <p>N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development						Project (Number/Name) L59 / Diagnost/Expert Sys			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	Various	Various : Various	0.000	-		-		0.150		-		0.150	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		0.150		-		0.150	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development/ Verification/Validation	Various	Various, : Various	32.360	1.343		2.200		1.101		-		1.101	Continuing	Continuing	Continuing
Hardware/Support Items Development	Various	Various, : Various	58.884	2.368		3.822		1.591		-		1.591	Continuing	Continuing	Continuing
Subtotal			91.244	3.711		6.022		2.692		-		2.692	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Support	Various	Various, : Various	47.891	0.637		0.850		0.657		-		0.657	Continuing	Continuing	Continuing
Other Direct	Various	Various, : Various	3.590	0.200		0.200		0.200		-		0.200	Continuing	Continuing	Continuing
Subtotal			51.481	0.837		1.050		0.857		-		0.857	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	Various	Various, : Various	1.046	-		-		1.000		-		1.000	Continuing	Continuing	Continuing
Subtotal			1.046	-		-		1.000		-		1.000	-	-	-
Remarks															
Test program set (TPS) and contractor developmental test and evaluation are included in the product development cost.															

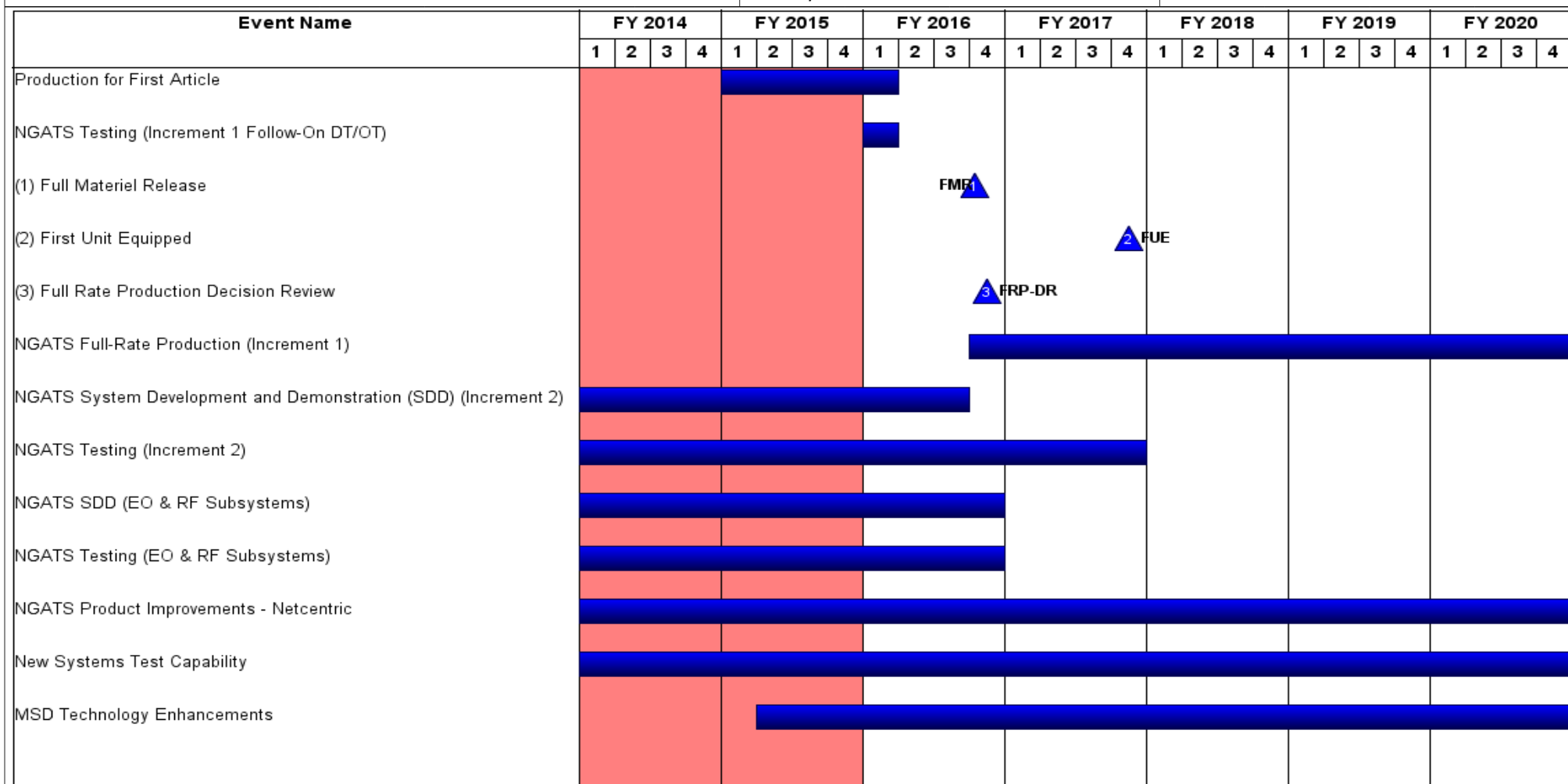
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development					Project (Number/Name) L59 / Diagnost/Expert Sys			
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	143.771	4.548		7.072		4.699		-		4.699	-	-	-
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development	Project (Number/Name) L59 / Diagnost/Expert Sys
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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / <i>Automatic Test Equipment Development</i>	Project (Number/Name) L59 / <i>Diagnost/Expert Sys</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Production for First Article	1	2015	1	2016
NGATS Testing (Increment 1 Follow-On DT/OT)	1	2016	1	2016
Full Materiel Release	4	2016	4	2016
First Unit Equipped	4	2017	4	2017
Full Rate Production Decision Review	4	2016	4	2016
NGATS Full-Rate Production (Increment 1)	4	2016	4	2020
NGATS System Development and Demonstration (SDD) (Increment 2)	4	2009	3	2016
NGATS Testing (Increment 2)	4	2010	4	2017
NGATS SDD (EO & RF Subsystems)	4	2010	4	2016
NGATS Testing (EO & RF Subsystems)	4	2012	4	2016
NGATS Product Improvements - Netcentric	4	2011	4	2020
New Systems Test Capability	2	2011	4	2020
MSD Technology Enhancements	2	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L65 / Test Equipment Development			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
L65: Test Equipment Development	-	1.950	4.007	4.261	-	4.261	3.710	4.114	4.333	4.169	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports development and demonstration of state-of-the-art calibration standards and techniques, and upgrades/improvements to existing Army calibration systems. It provides for feasibility studies, market research, inventory analyses, bid sample testing, and prototyping to support calibration systems and general-purpose test and diagnostic equipment acquisitions. Primary efforts under this project include development of calibration software, development of calibration capability for chemical and biological agent detection systems, improvement of test and measurement equipment performance envelopes via product improvements, and development/evaluation of advance technology and higher reliability calibration systems and general-purpose test, measurement and diagnostic equipment (TMDE). Product improvements are underway to current test and measurement systems to overcome deficiencies and voids in existing organic capabilities and to ensure the operational readiness, accuracy, effectiveness, and safety of Army weapons and combat support systems. These improvements will employ reconfigurable open electronics architecture and computer-based instrumentation wherever feasible and will be focused on reducing the test equipment footprints to improve deployability and mobility in areas of operation.

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

	FY 2014	FY 2015	FY 2016
Title: Calibration Sets (CALSETS) Software Environment and Calibration	0.450	0.960	1.320
Description: Develop and test an Army automated calibration environment and develop calibration procedures. Test efforts in support of DoD Information Assurance Certification and Accreditation Process (DIACAP). FY 2014 Accomplishments: Continue development and evaluation of calibration procedures. Perform testing and evaluation to support calibration software environment. Develop and test DIACAP for calibration instrument controllers. FY 2015 Plans: Continue development and evaluation of calibration procedures. Develop, test and evaluate enhanced calibration software environment. Develop and test DIACAP for calibration instrument controllers. FY 2016 Plans: Develop and evaluate automated calibration procedures. Evaluate feasibility of incorporating commercial procedures and calibration system performance monitoring within the software environment. Test and evaluate prototype calibration procedure development engine. Perform tests to support DIACAP for calibration systems.			
Title: Physical Instruments	0.702	1.357	1.238

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development	Project (Number/Name) L65 / Test Equipment Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
<p>Description: Research, develop, and test physical parameter calibration instrumentation to support areas such as chemical/ biological agent detection systems, night vision testers, small arms gauges, pneumatic pressure systems, temperature, etc.</p> <p>FY 2014 Accomplishments: Continue development and test of hydrocarbon flow calibration and test standards. Develop requirements and prototype testers for small arms gage calibration standards. Continue development and test of chemical agent detectors and protective equipment testers and calibrators.</p> <p>FY 2015 Plans: Complete development and test of hydrocarbon flow calibration and test standards. Continue development, automate, and test prototype small arms gage calibration standards. Complete development and test of chemical agent detectors and protective equipment testers and calibrators. Initiate development of pneumatic standards to support avionic systems.</p> <p>FY 2016 Plans: Continue development and test of prototype small arms gage calibration standards. Initiate development and test of calibration systems for biological agent detectors and protective equipment. Continue development of pneumatic standards to support avionic systems. Perform market research, evaluate commercial equipment, and complete specifications for acquisition.</p>				
<p>Title: Electrical Instruments</p> <p>Description: Research, develop, and test electrical parameter calibration instrumentation to support areas such as deployable recertification set, intrinsic electrical standards, electrical transport standards, etc.</p> <p>FY 2014 Accomplishments: Perform market research and evaluate commercial equipment and develop performance specifications for acquisition. Continue development and testing of direct current (DC) and alternating current (AC) intrinsic voltage system. Develop and test electronic transport standards.</p> <p>FY 2015 Plans: Perform market research and evaluate commercial equipment and develop performance specifications for acquisition. Complete testing of DC intrinsic voltage system and continue testing of AC system. Complete testing of electronic transport standards.</p> <p>FY 2016 Plans: Perform market research and evaluate commercial equipment and develop performance specifications for acquisition. Complete development and test of high voltage multiplier for AC intrinsic voltage system. Develop and test prototype microwave reference standard.</p>		0.637	1.305	1.318
<p>Title: Test Equipment Modernization</p>		0.161	0.385	0.385

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L65 / Test Equipment Development			

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>Description: Perform market research, bid sample testing, and evaluation of commercial equipment and develop performance specifications for acquisition.</p> <p>FY 2014 Accomplishments: Perform market research and evaluation of commercial equipment and develop performance specifications for future general-purpose test equipment acquisitions.</p> <p>FY 2015 Plans: Perform market research and evaluation of commercial equipment and develop performance specifications for future general-purpose test equipment acquisitions.</p> <p>FY 2016 Plans: Perform market research and evaluation of commercial equipment and develop performance specifications for acquisition. Conduct bid sample testing to support acquisition program.</p>			
Accomplishments/Planned Programs Subtotals	1.950	4.007	4.261

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• SSN N10000: Calibration Sets Equipment	5.244	5.726	4.650	-	4.650	5.735	5.542	8.590	4.499	Continuing	Continuing
• SSN N11000: Test Equipment Modernization	17.881	13.061	11.083	-	11.083	18.354	16.816	14.771	15.363	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Projects are focused on use of commercial and nondevelopmental item technologies. When programmatic and engineering expertise and capability are available within the Department of Defense, services required for the individual development projects are acquired from the government source; otherwise, commercial service contracts are used to provide these capabilities. Equipment required for development projects is obtained from the commercial supplier. Candidate commercial equipment and nondevelopmental items are identified and evaluated through market research and government testing and evaluation.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development						Project (Number/Name) L65 / Test Equipment Development			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
In-house Engineering	SS/LH	Civ Labor : various	3.716	0.715		0.744		0.760		-		0.760	Continuing	Continuing	-
Subtotal			3.716	0.715		0.744		0.760		-		0.760	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/GSM-421(V2)	Various	Various : Various	2.346	-		-		-		-		-	Continuing	Continuing	-
CALSETS Software Environment and Calibration	Various	Various : Various	5.607	0.211		0.400		0.590		-		0.590	Continuing	Continuing	-
Physical Instruments	Various	Various : Various	6.155	0.210		0.578		0.556		-		0.556	Continuing	Continuing	-
Electrical Instruments	Various	Various : Various	8.736	0.293		0.552		0.527		-		0.527	Continuing	Continuing	-
Test Equipment Modernization	Various	Various : Various	0.280	0.090		0.160		0.208		-		0.208	Continuing	Continuing	-
Subtotal			23.124	0.804		1.690		1.881		-		1.881	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Engineering	SS/FFP	University of Alabama, Huntsville : Huntsville, AL	1.837	0.140		0.245		0.275		-		0.275	Continuing	Continuing	-
Subtotal			1.837	0.140		0.245		0.275		-		0.275	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L65 / Test Equipment Development					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/GSM-421(V2)	Various	Various : Various	0.620	-		-		-		-		-	Continuing	Continuing	-
CALSETS Software Environment and Calibration	Various	Various : Various	0.500	0.070		0.360		0.430		-		0.430	Continuing	Continuing	-
Physical Instruments	Various	Various : Various	1.375	0.088		0.407		0.407		-		0.407	Continuing	Continuing	-
Electrical Instruments	Various	Various : Various	1.468	0.047		0.351		0.331		-		0.331	Continuing	Continuing	-
Test Equipment Modernization	Various	Various : Various	0.250	0.086		0.210		0.177		-		0.177	Continuing	Continuing	-
Subtotal			4.213	0.291		1.328		1.345		-		1.345	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			32.890	1.950		4.007		4.261		-		4.261	-	-	-
Remarks															

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604746A / Automatic Test Equipment Development

Project (Number/Name)

L65 / Test Equipment Development

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / <i>Automatic Test Equipment Development</i>	Project (Number/Name) L65 / <i>Test Equipment Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Physical Instruments	2	2007	4	2020
CALSETS Software Environment and Calibration	2	2007	4	2020
Electrical Instruments	2	2007	4	2020
Test Equipment Modernization	1	2011	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	12.193	10.022	9.138	-	9.138	11.232	11.412	11.318	16.226	Continuing	Continuing
C74: Devel Simulation Tech	-	0.488	1.087	0.951	-	0.951	1.464	1.433	1.693	2.435	Continuing	Continuing
C77: Army Geospatial Data Master Plan	-	0.596	0.597	0.540	-	0.540	0.661	0.652	0.786	0.800	-	4.632
C78: One Semi-Automated Forces	-	11.109	8.338	7.647	-	7.647	9.107	9.327	8.839	12.991	Continuing	Continuing

Note

Funding realigned for higher Army priorities. The FY 2016 funding request was reduced by \$1.075 million to account for the availability of prior year execution balances.

A. Mission Description and Budget Item Justification

The program element "Distributive Interactive Simulations - Engineering Development" applies to the Army's Advanced Simulation Program, which enables operational readiness and the development of concepts and systems for the Future Force through the application of new simulation technology and techniques. The development and application of simulation technology will provide the means to link electronically a range of various simulation tools in a manner that is transparent to the user. The amalgam of simulations and tools is linked together to enable execution of an event; to verify the scenarios, tactics/techniques and procedures; to train testers on new hardware/software; and to conduct trial test runs before costly live field tests. The tools developed are available for reuse by developers and users of simulations throughout the Army.

Project C74 provides the resources necessary to perform the formally chartered mission of the Army's Simulation-to-C4I* Interoperability Overarching Integrated Product Team (SIMCI OIPT). (*C4I = Command, Control, Communications, Computers and Intelligence.) Project C77, Army Geospatial Data Master Plan, focuses on activities that start with data acquisition from multiple sources and culminate in (1) accurate, robust and timely geospatial data and data management and (2) integration and conversion tools that support multiple battle command, training and mission-rehearsal applications. Project C78 develops the One Semi-Automated Forces (OneSAF) program, which will combine and improve the functionality and behaviors of several current semi-automated forces to provide a single SAF for Army use in simulations.

FY 2016 funding for Project C74 continues management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. Project C77 continues development efforts associated with the Ground-Warfighter Geospatial Data Model(GGDM) and Geospatial Data Standards. Project C78 continues development of software as required to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	12.569	10.027	10.381	-	10.381
Current President's Budget	12.193	10.022	9.138	-	9.138
Total Adjustments	-0.376	-0.005	-1.243	-	-1.243
• Congressional General Reductions	-	-0.005			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.376	-			
• Adjustments to Budget Years	-	-	-1.243	-	-1.243

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>				Project (Number/Name) <i>C74 / Devel Simulation Tech</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
<i>C74: Devel Simulation Tech</i>	-	0.488	1.087	0.951	-	0.951	1.464	1.433	1.693	2.435	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project C74 funds the HQDA-chartered mission of the Simulation-to-Mission Command Interoperability (SIMCI) Overarching Integrated Product Team (OIPT) in support of Army Training and Readiness. The SIMCI OIPT mission is to provide policy recommendations to Army senior leadership to improve organizations by allowing Soldiers to fight in the same manner in which they train. This is accomplished by interoperability between Mission Command (MC) systems and the Modeling and Simulation (M&S) systems the Army uses to stimulate MC systems for training Soldiers and their Leaders. SIMCI also invests in targeted solutions to critical problem areas that exist between MC and Simulations. The SIMCI OIPT, led by Program Executive Office (PEO) Simulation, Training, and Instrumentation (STRI) and PEO Command Control Communications-Tactical (C3T), uses focused collaborative processes among its 30+ Army organizations to identify key/critical interoperability shortfalls and the required materiel solutions.

The SIMCI OIPT provides the following: (1) Advisor to Army Leadership--improve MC and M&S interoperability programs, policies, directives, resourcing, and procedures; (2) Technical Investment--sponsor/support initiatives that seek common solutions to critical interoperability issues surrounding MC and M&S systems; (3) Outreach--conduct & participate in interoperability outreach activities. SIMCI investments consist primarily of cost-sharing initiatives, leveraging initial system solutions of acquisition programs to enhance the interoperability of multiple systems in the Joint Operational Environment. SIMCI investments accelerate implementation within MC and M&S systems, of common data models and information exchanges that are used by other Services and coalition nations, thus enhancing the inherent ability of Army systems to interoperate seamlessly in a Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment.

FY 2016 funding continues management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the areas of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.

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

	FY 2014	FY 2015	FY 2016
Title: Program Management for the SIMCI Overarching Integrated Product Team (OIPT) Projects.	0.488	1.087	0.951
Description: Program Management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products.			
FY 2014 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C74 / <i>Devel Simulation Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Continued management of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the areas of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.</p> <p>FY 2015 Plans: Continues management of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.</p> <p>FY 2016 Plans: Will continue management and support of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the areas of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.</p>			
Accomplishments/Planned Programs Subtotals		0.488	1.087
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy SIMCI OIPT resources are allocated to multiple organizations in both the Mission Command (MC) and Modeling and Simulation (M&S) Communities. The funds are contracted to execute approved functions and to projects that advance the efforts of SIMCI and components-based architecture alignment. Products developed transition to the lead or sponsor's program which then maintains the product for the cost savings of itself and other programs in both Communities.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev	Project (Number/Name) C74 / Devel Simulation Tech
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev				Project (Number/Name) C74 / Devel Simulation Tech					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI : Orlando, FL	9.604	0.069	Oct 2013	0.150	Oct 2014	0.150	Oct 2015	-		0.150	Continuing	Continuing	Continuing
SBIR/STTR	TBD	PEO STRI : Orlando, FL	0.086	-		-		-		-		-	-	0.086	-
Subtotal			9.690	0.069		0.150		0.150		-		0.150	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Transition of simulation initialization capability	Various	TBD : TBD	3.134	-		-		-		-		-	Continuing	Continuing	Continuing
Geospatial Initiative	Various	TBD : TBD	1.388	-		-		-		-		-	Continuing	Continuing	Continuing
Data Model applications and reference implementations	Various	TBD : TBD	2.363	-		-		-		-		-	Continuing	Continuing	Continuing
Implementation of Initialization Products	Various	TBD : TBD	2.255	-		-		-		-		-	Continuing	Continuing	Continuing
Initialization Study Implementation	Various	TBD : TBD	1.038	-		-		-		-		-	Continuing	Continuing	Continuing
Mission Comand systems data mediation/web services	Various	TBD : TBD	2.910	-		-		-		-		-	Continuing	Continuing	Continuing
Expanding MTOE System Architecture (SA) Data	Various	TBD : TBD	1.821	-		-		-		-		-	Continuing	Continuing	Continuing
C2 Adapter Web Services and Tools	Various	TBD : TBD	2.660	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			17.569	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>				Project (Number/Name) C74 / <i>Devel Simulation Tech</i>					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SIMCI Program/OIPT Support	Various	Various : Various	1.851	0.394	Oct 2013	0.912	Dec 2014	0.776	Dec 2015	-		0.776	Continuing	Continuing	Continuing
Army Initialization Program and Technical Work Groups (TWG)	Various	Various : Various	0.581	0.025	Dec 2013	0.025	Dec 2014	0.025	Dec 2015	-		0.025	Continuing	Continuing	Continuing
Subtotal			2.432	0.419		0.937		0.801		-		0.801	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			29.691	0.488		1.087		0.951		-		0.951	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C74 / <i>Devel Simulation Tech</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Geospatial Initiative																												
Implementation of Initialization Products																												
Transition of simulation initialization capability																												
Initialization Study Implementation																												
Data Model applications and reference implementations																												
C2 Adapter Web Services and Tools																												
Quarterly SIMCI OIPT Meeting																												
Annual Project Call																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C74 / <i>Devel Simulation Tech</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Geospatial Initiative	1	2011	4	2014
Implementation of Initialization Products	1	2010	4	2020
Transition of simulation initialization capability	1	2010	4	2020
Initialization Study Implementation	1	2010	4	2020
Data Model applications and reference implementations	1	2010	4	2020
C2 Adapter Web Services and Tools	1	2010	4	2020
Quarterly SIMCI OIPT Meeting	1	2010	4	2020
Annual Project Call	1	2010	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev				Project (Number/Name) C77 / Army Geospatial Data Master Plan			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
C77: Army Geospatial Data Master Plan	-	0.596	0.597	0.540	-	0.540	0.661	0.652	0.786	0.800	-	4.632
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project C77 addresses the implementation and acceleration of objectives of the Army Geospatial Data Integrated Master Plan (AGDIMP), approved by the Chief of Staff, Army in April 2005. The AGDIMP provides the framework for generating, analyzing and distributing geospatial data for battle management operations, training, and mission rehearsal. The AGDIMP also provides the procedures for identifying and refining Army geospatial resource requirements. Geospatial data provide soldiers with the framework and background for displaying the location of friendly and enemy forces and the location of other critical features on the battlefield. Geospatial data -- used in Army command and control systems, course of action analysis, mission rehearsal tools, simulators and simulations -- provide insights on how the physical environment will impact combat operations. This minimizes exposure of soldiers to hostile environments. The AGDIMP describes the operations for a complete, integrated network-centric enterprise for managing and updating geospatial data required for the Army's Future Force. Although this plan encompasses most of the issues of an enterprise solution for geospatial needs and concerns, it does not contain the full level of detail or complexity required to be considered complete. The AGDIMP includes all activities starting with data acquisition from multiple sources (including raw sensor feeds from national sensors to soldier/platform level) and concluding with accurate, robust, and timely geospatial (terrain-related) data management, integration, and conversion tools that support multiple battle command, training, and mission-rehearsal applications. The AGDIMP does not include the algorithms and functions used by the applications themselves to produce finished battle command or intelligence products. The AGDIMP will become part of a much larger effort to integrate geospatial activities across all Services while documenting the complex framework for a "net ready" geospatial information and service architecture, an environment in which the Army's current and future forces must operate to achieve information dominance within the total battle space. This larger effort is currently being developed in conjunction with the Joint Forces Command and the other Services, including Special Operations Command.

FY 2016 funding continues development efforts associated with the Ground-Warfighter Geospatial Data Model(GGDM) and Geospatial Data Standards.

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

	FY 2014	FY 2015	FY 2016
Title: Ground-Warfighter Geospatial Data Model (GGDM) formerly Army Geospatial Data Model (AGDM)	0.288	0.289	0.250
Description: The GGDM incorporates common data elements that conform to standards mandated by the Department of Defense Information Technology Standards Registry (DISR) for the National System for Geospatial Intelligence (NSG). Incorporating common geospatial data standards into the GGDM makes the Programs of Record (POR) consistent with new DISR-mandated geospatial intelligence standards for the NSG.			
FY 2014 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C77 / <i>Army Geospatial Data Master Plan</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Developed GGDM 2.2 reference implementation in commercial and open source database schema required by Army Programs. Developed tools to translate legacy geospatial data into GGDM 2.2 schema.			
FY 2015 Plans: Performs data modeling actions necessary to develop the next version of the GGDM (ver 2.3) including aligning content from Aviation, Human Geography and adding and aligning new content from NGA's 9 domain data stores.			
FY 2016 Plans: Will develop/enhance GGDM tools then perform data translation of legacy geospatial data to the current version of the GGDM. Will perform interoperability experiments with US Army, NGA, USMC and American-British-Canadian-Australian (ABCA) Allies.			
Title: Geospatial Data Standards		0.308	0.308
Description: Army Geospatial Standards including data standards and standards for services to manage process and disseminate and utilize geospatial data.			0.290
FY 2014 Accomplishments: Developed and ensured consistent integration of geospatial enterprise data standards, including standard practices for production and management of geospatial data, into Army Mission Command, Simulation and Training programs, systems and organizations.			
FY 2015 Plans: Develops and ensures consistent integration of geospatial enterprise data standards, including standard practices for production and management of geospatial data, into Army Mission Command, Simulation and Training programs, systems and organizations.			
FY 2016 Plans: Will develop and maintain Geospatial Standards compliance matrix, Std-V1, in alignment with updated NSG standards and next cycle updates of DISR standards and coordinate results with Army CIO/G6 and ASA(ALT) Programs. Will develop enhancements to the Open Geospatial Consortium (OGC) Geopackage Standard to potentially include elevation data and routing data results in Version 2.0 of this standard.			
Accomplishments/Planned Programs Subtotals		0.596	0.597
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C77 / <i>Army Geospatial Data Master Plan</i>
<p><u>D. Acquisition Strategy</u> Resources are allocated to several critical geospatial projects in support of the Army Geospatial Data Integrated Master Plan (AGDIMP) and the Army Geospatial Enterprise (AGE.)</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>						Project (Number/Name) C77 / <i>Army Geospatial Data Master Plan</i>			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Geospatial Model and Data Standards	Various	TBD : TBD	3.582	0.596		0.597		0.540		-		0.540	-	5.315	3.614
Subtotal			3.582	0.596		0.597		0.540		-		0.540	-	5.315	3.614

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.582	0.596	0.597	0.540	-	0.540	-	5.315	3.614

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev								Project (Number/Name) C77 / Army Geospatial Data Master Plan												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground Warfighter Geospatial Data Model																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev	Project (Number/Name) C77 / Army Geospatial Data Master Plan

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Warfighter Geospatial Data Model	1	2010	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev				Project (Number/Name) C78 / One Semi-Automated Forces			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
C78: One Semi-Automated Forces	-	11.109	8.338	7.647	-	7.647	9.107	9.327	8.839	12.991	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

One Semi-Automated Forces (OneSAF) develops and delivers a software application that represents activities of units and forces in simulation in support of Army Training and Readiness. The application is used by Army agencies to support the concept evaluation, experimentation, materiel acquisition and training throughout the communities. The focus of this project is systems/software engineering and design for development and evolution of the architecture and software tools for a universal system of Army computer-generated forces -- OneSAF. OneSAF is a high fidelity brigade-and-below SAF that represents a full range of operations, systems and control processes in support of stand-alone and embedded training and Research, Development and Acquisition (RDA) simulation applications. OneSAF is fully interoperable with the Army's emerging virtual, live, and division-and-above constructive simulations and provides next-generation simulation products. OneSAF replaces a variety of legacy simulations used within the Army to support analytic and training simulation activities.

FY 2016 funding allows for continued development of the software product line by addressing OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the OneSAF Project Office - Training and Doctrine Command (TRADOC). This funding also provides for the management of the infrastructure, equipment, laboratories, and processes needed to develop the required product baseline.

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

	FY 2014	FY 2015	FY 2016
Title: Engineering and Manufacturing Development (EMD) phase contract activities for the One Semi-Automated Forces program.	8.275	4.908	4.997
Description: Continue EMD phase contract activities for the OneSAF program.			
FY 2014 Accomplishments: Continued the development of software capabilities to provide OneSAF Pre-Planned Product Improvements (P3Is) as prioritized and approved by the Training and Doctrine Command (TRADOC) OneSAF Project Office. Continued enhancement of functionality of architectural services, components, the synthetic environment and infrastructure capable of supporting model development. Performed software development, test and release of Version 7.0.			
FY 2015 Plans: Continues the development of software capabilities based on OneSAF P3Is as prioritized and approved by the TRADOC OneSAF Project Office. Continues the software development of functionality that enhances architectural services, components, synthetic environment and infrastructure of the OneSAF product Line and provides for software integration, test and release of Version 8.0 and 8.0 International.			
FY 2016 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev	Project (Number/Name) C78 / One Semi-Automated Forces		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Will continue the development of software capabilities based on OneSAF P3Is as prioritized and approved by the TRADOC OneSAF Project Office. Will continue the software development of functionality that enhances architectural services, components, synthetic environment and infrastructure of the OneSAF Product Line and will provide for software integration, test and release of required software refreshes and Version 9.0.				
Title: Government System Test and Evaluation for the One Semi-Automated Forces (OneSAF) program. Description: Government System Test and Evaluation for the OneSAF program. FY 2014 Accomplishments: Performed software development, test, integration, release and verification for Version 7.0. Continued to provide support to the user community in conducting experiments and validation events as needed for integration into the Joint Land Component Constructive Training Capability (JLCCTC) federation and Live, Virtual and Constructive (LVC) applications. FY 2015 Plans: Provides for the conducting of software, test, integration and release for Version 8.0 and 8.0 international. Provides support to the user community in conducting experiments and validation events as needed for integration into the Home Station Training federation, Network Integration events, and LVC applications. FY 2016 Plans: Will provide for the conducting of software, test, integration and release for Version 9.0. Will provide support to the user community in conducting experiments and validation events as needed for integration into the Home Station Training federation, Network Integration events, and LVC applications.		1.200	1.100	0.850
Title: Government Program Management for the One Semi-Automated Forces (OneSAF) program. Description: Government Program Management for the One Semi-Automated Forces (OneSAF) program. FY 2014 Accomplishments: Government Program Management for the OneSAF program. FY 2015 Plans: Government Program Management for the OneSAF program. FY 2016 Plans: Government Program Management for the OneSAF program.		1.634	2.330	1.800
Accomplishments/Planned Programs Subtotals		11.109	8.338	7.647

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev				Project (Number/Name) C78 / One Semi-Automated Forces			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OMA: OMA, 121014000	5.041	3.518	4.825	-	4.825	4.937	5.102	6.945	7.007	Continuing	Continuing
Remarks											
OMA funds provide for maintenance of existing OneSAF product line to include life cycle software support and OneSAF TRADOC Project Office (TPO).											
D. Acquisition Strategy											
Continue the yearly release of the OneSAF Software (SW) versions containing performance enhancements resulting from the development and integration of both approved Product Improvements and integration of Co-Developer handovers. PM OneSAF continues to manage two Delivery Orders for the Development, Integration, Interoperability, and Support (I2S) of capabilities products, data, and documentation that fully serves the current and evolving needs of the user community.											
The enhancements will be executed within the development line as modifications to the released baseline via Engineering Change Proposals (ECPs); Change Requests (CRs); Pre-Planned Product Improvements (P3I); and correction of deficiencies identified as Problem Test Reports (PTRs) and Deficiency Reports (DRs) by the user community.											
The Development Delivery Order is primarily focused on capability enhancements within the OneSAF Product Line. The key objectives here are to develop the capabilities needed to execute the OneSAF production line and deliver OneSAF SW product line, data, and documentation to meet the needs of the growing user community. These software products will include capabilities supporting the requirements of the OneSAF program; other US Army PEOs and PMs, TRADOC Battle Labs, Research and Development Centers (RDECs) and agencies; other Service and Joint agencies; Foreign Countries; non Department of Defense government organizations and agencies; academic institutions and other Co-Developers.											
The I2S Delivery Order is primarily focused on the Configuration Management and Control of the released OneSAF Product Line and executes the overarching OneSAF integration, interoperability and support efforts required for delivery of OneSAF SW, data and documentation products to the User Community. It also provides the Conceptual Modeling, Architectural and Engineering support to the OneSAF Co-Developers as required to support their OneSAF SW product deliveries; the training products and support required by the OneSAF user community; and integration of capabilities.											
.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>						Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI, Orlando, FL : Various	19.356	1.634	Oct 2013	2.330		1.800		-		1.800	Continuing	Continuing	Continuing
Subtotal			19.356	1.634		2.330		1.800		-		1.800	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Architecture Dev & System Integration	C/CPFF	Science Applications International Corp : Orlando, FL	51.466	-		-		-		-		-	-	51.466	51.466
Model and Tools Development	C/CPFF	Science Applications International Corp : Orlando, FL	27.625	-		-		-		-		-	-	27.625	27.625
Environmental Runtime Component	C/CPFF	Science Applications : Orlando, FL	7.981	-		-		-		-		-	-	7.981	7.981
OneSAF Component Development	C/CPFF	Various : Various	9.648	-		-		-		-		-	-	9.648	9.648
Integrated Environment Dev	C/CPFF	Advanced Systems Technology, Inc : Orlando FL	11.702	-		-		-		-		-	-	11.702	11.702
OneSAF Bridge Contract	C/CPFF	Science Applications International Corp : Orlando, FL	3.797	-		-		-		-		-	-	3.797	3.797
Integration, Interoperability, and Support (I2S)	C/CPFF	Cole Engineering Services, Inc. : Orlando, FL	1.554	1.518	Nov 2013	1.368	Dec 2014	1.850	Nov 2015	-		1.850	Continuing	Continuing	Continuing
Software Development	C/CPFF	Science Applications International Corp : Orlando, FL	11.979	4.549	Dec 2013	1.230	Dec 2014	1.227	Dec 2015	-		1.227	Continuing	Continuing	Continuing
Subtotal			125.752	6.067		2.598		3.077		-		3.077	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>						Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Analysis	Various	Various : Various	6.247	0.150	Dec 2013	0.200	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Domain Analysis	Various	Various : Various	5.495	0.165	Dec 2013	0.100	Oct 2014	0.150	Dec 2015	-		0.150	Continuing	Continuing	Continuing
Integrated Development Environment	Various	Various : Various	3.723	1.528	Oct 2013	1.660	Oct 2014	1.570	Oct 2015	-		1.570	Continuing	Continuing	Continuing
Architecture Engr & Tech Spt	SS/FP	MITRE FFRDC : Ft. Monmouth, NJ	4.384	0.365	Oct 2013	0.350	Oct 2014	0.200	Oct 2015	-		0.200	Continuing	Continuing	Continuing
Subtotal			19.849	2.208		2.310		1.920		-		1.920	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneSAF integration, evaluation and test	Various	Various : Various	9.379	0.950	Dec 2013	0.900	Dec 2014	0.750	Dec 2015	-		0.750	Continuing	Continuing	Continuing
OneSAF Verification, Validation & Accreditation	Various	Various : Various	6.547	0.250	Dec 2013	0.200	Dec 2014	0.100	Dec 2015	-		0.100	Continuing	Continuing	Continuing
Subtotal			15.926	1.200		1.100		0.850		-		0.850	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			180.883	11.109		8.338		7.647		-		7.647	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
P3I Requirements Development	P3I																											
(1) OneSAF Version Release 7.0	▲7.0				▲8.0				▲9				▲10				▲11				▲12							
(2) OneSAF Version Release 8.0																												
(3) OneSAF Version Release 9.0																												
(4) OneSAF Version Release 10.0																												
(5) OneSAF Version Release 11.0																												
(6) OneSAF Version Release 12.0																												
OneSAF Support	Life Cycle Software Support																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
P3I Requirements Development	1	2006	4	2021
OneSAF Version Release 7.0	2	2014	2	2014
OneSAF Version Release 8.0	1	2015	1	2015
OneSAF Version Release 9.0	1	2016	1	2016
OneSAF Version Release 10.0	1	2017	1	2017
OneSAF Version Release 11.0	2	2018	2	2018
OneSAF Version Release 12.0	2	2019	2	2019
OneSAF Support	1	2006	4	2021

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army	Date: February 2015
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	26.720	34.712	21.622	-	21.622	30.692	28.008	32.014	35.056	Continuing	Continuing
571: <i>Close Cbt Tact Trainer</i>	-	0.805	0.815	0.749	-	0.749	1.138	1.090	0.994	0.992	Continuing	Continuing
577: <i>Gaming Technology In Support Of Army Training</i>	-	2.047	1.768	2.999	-	2.999	2.562	2.515	2.351	2.356	Continuing	Continuing
582: <i>Synthetic Envir Core</i>	-	20.169	20.464	16.658	-	16.658	20.680	18.552	20.916	26.118	Continuing	Continuing
585: <i>Aviation Combined Arms Tactical Trainer</i>	-	3.699	11.665	1.216	-	1.216	6.312	5.851	7.753	5.590	Continuing	Continuing

Note

Change Summary Explanation: Synthetic Environment (SE) Core is required to generate Terrain Databases for constructive simulation and gaming requirements in support of Army training. SE Core received a Congressional reduction (-7.7 million) in FY15. FY16 Budget adjustment received to achieve requirements.

A. Mission Description and Budget Item Justification

The Combined Arms Tactical Trainers (CATT) represent a family of combined arms simulation systems designed to support the Army's simulation-based, Combined Arms Training Strategy. CATT enables units, from crew to the battalion task force level, to conduct a wide variety of combat tasks on a realistic, interactive, synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms team in a cost effective manner. The primary CATT system is the Close Combat Tactical Trainer (CCTT) which provides the underlying baseline architecture and After Action Review (AAR) for CATT expansions, Pre-Planned Product Improvements (P3I) and system enhancements. The Reconfigurable Vehicle Simulator (RVS) and the Dismounted Soldier Training System (DSTS) variants support combat convoy operations and Improvised Explosive Devices (IED) tasks. Synthetic Environment (SE) Core provides for the expansion of the synthetic environment baseline to include enhanced interoperability and the products and infrastructure to support current and future combat operations and mission rehearsal required for Unified Land Operations. The first synthetic environments expanded were in the Aviation Combined Arms Tactical Trainer (AVCATT) and the CCTT for both the Active and Reserve components. Gaming Technology provides an application to train and rehearse convoy-operations, platoon level, mounted infantry tactics, dismounted operations, rules-of-engagement training, cross-cultural communications training, IED defeat training, route clearance, ground-air coordination, Unmanned Aerial Vehicle (UAV) integration, and other small unit and individual training and mission rehearsal requirements. Soldiers can train in a common environment on geotypical or geospecific virtual terrain. It is also possible to link Gaming technology to actual communication, command, control, computer, and intelligence (C4I) systems and other CATT simulation systems to increase the utility and realism of the training. By practicing skills in CATT, units are able to effectively prepare for costly live fire and maneuver exercises, as well as training tasks deemed too hazardous to conduct in a live training environment. Fielded in both fixed site and mobile versions, CATT enables both Active and Reserve component units to prepare for real world contingency missions. By being able to use a wide array of training terrain databases and modify the behavior of the computer generated opposing forces, CATT offers an unlimited array of training options to support the Army's many regional combat missions. The combination of tough field and live fire training, and realistic simulation training in CATT, is the formula to prepare Soldiers and their Leaders for the uncertainties they face in combat operations.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army			Date: February 2015			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				
FY 2016 core funding of \$.749 million for CCTT enables gaming technology and visualization for maneuver training, and the P3I for the CCTT, to include virtualization and other Better Buying Power in order to reduce life cycle costs.						
FY 2016 base funding of \$2.999 million for Games for Training will provide for modifications to the Games for Training (GFT) system to ensure compliance with the Live, Virtual, Constructive/Integrated Training Environment (LVC-ITE) in support of Unified Land Operations. It will also integrate new commercial and Government technology products into the current gaming system.						
FY 2016 base funding of \$16.658 million will continue the efforts of providing expanded development of the capability to produce common terrain databases. FY 2016 funds will modify the Terrain Development process to include constructive terrain databases, continue to enhance OneSAF in the SE Core Architecture and generate databases for constructive simulation and gaming. Maintaining OneSAF for virtual simulations enables interoperability with the Live, Virtual, Constructive Integrated Training Environment (LVC ITE) and is a cost avoidance for individual virtual simulators in that they that do not develop and maintain separate Semi-Automated Forces (SAFs). SE Core will continue to upgrade, integrate and refine the Common Virtual Components, and continue to develop common visual models and transportation networks.						
FY 2016 base funding of \$1.216 million will complete the development and testing the Voice Communication System capability. The required software will allow Army Aviators to properly communicate to internal and external entities in support of Aviation Collective Training Tasks.						
B. Program Change Summary (\$ in Millions)		FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget		27.619	42.430	18.267	-	18.267
Current President's Budget		26.720	34.712	21.622	-	21.622
Total Adjustments		-0.899	-7.718	3.355	-	3.355
• Congressional General Reductions		-	-0.018			
• Congressional Directed Reductions		-	-7.700			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.899	-			
• Adjustments to Budget Years		-	-	3.355	-	3.355

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 571 / Close Cbt Tact Trainer			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
571: Close Cbt Tact Trainer	-	0.805	0.815	0.749	-	0.749	1.138	1.090	0.994	0.992	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Close Combat Tactical Trainer (CCTT) immersively and comprehensively trains Armor, Cavalry, Infantry, Mechanized Infantry, and Armored Reconnaissance units from squad through Battalion/Squadron level, to include their staffs. The primary training audience operates from full-crew simulators, reconfigurable command posts, and live battalion command posts to accomplish their combined arms training tasks. CCTT is a ground based, collective training device composed of three systems: the CCTT, the Reconfigurable Vehicle Tactical Trainer (RVTT), and the Dismounted Soldier Training System (DSTS). CCTT is comprised of full fidelity, manned simulators for the M1 Abrams main battle tank, M2 Bradley Fighting Vehicles (BFV) variants, M3 Cavalry Fighting Vehicles (CFV), and the High Mobility, Multipurpose, Wheeled Vehicle (HMMWV). RVTT is a CCTT Reconfigurable Vehicle Simulator (RVS) comprised of full fidelity, manned simulators for the HMMWV and Heavy Expanded Mobility Tactical Truck (HEMTT). DSTS is a virtual trainer providing an ability to immerse the individual soldier into the synthetic virtual environment.												
FY 2016 core funding of \$.749 million for CCTT enables gaming technology and visualization for maneuver training, and the P3I for the CCTT, to include virtualization and other Better Buying Power initiatives in order to reduce life cycle costs.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Government Program Management for the Close Combat Tactical Trainer (CCTT) program.									0.165	0.157	0.159	
Description: Government Program Management for the CCTT program.												
FY 2014 Accomplishments: Supported government program management, engineering, technical, contracting support, and continued operational evaluation support.												
FY 2015 Plans: Supports government program management, engineering, technical, contracting support, and continues operational evaluation support.												
FY 2016 Plans: Will support government program management, engineering, technical, contracting support, and will continue operational evaluation support.												
Title: Engineering and Manufacturing Development (EMD) phase contract activity for CCTT, DSTS and Interoperability between CCTT and DSTS.									0.640	0.658	0.590	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 571 / <i>Close Cbt Tact Trainer</i>				
B. Accomplishments/Planned Programs (\$ in Millions)												
Description: Continue EMD phase contract activities for CCTT and DSTS.										FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: Enabled the integration of gaming technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.												
FY 2015 Plans: Enables the integration of gaming technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.												
FY 2016 Plans: Will enable the integration of gaming technology into CCTT in support of maneuver training for Armor Brigade Combat Teams.												
Accomplishments/Planned Programs Subtotals										0.805	0.815	0.749
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• OPA3, Appropriation NA0170: OPA3, Appropriation NA0170	33.197	13.406	45.210	-	45.210	44.744	46.195	47.571	51.684	Continuing	Continuing	
• OMA, Appropriation 121018000: OMA, Appropriation 121018000	1.478	-	2.687	-	2.687	2.960	3.246	3.660	3.906	Continuing	Continuing	
Remarks The RDT&E efforts are essential to provide enhancements for the hardware and software of the program to meet warfighter mission priorities and validated requirements. These enhancements, after proper testing, will be procured and fielded with the programs procurement funds.												
D. Acquisition Strategy Acquisition Strategy FY 2016 will enable military gaming technology research for maneuver training and Pre-Planned Product Improvements (P3I) using Better Buying Power to reduce life cycle costs and open architecture interoperability across CCTT interfaces to other training capabilities.												
E. Performance Metrics N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 571 / Close Cbt Tact Trainer					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PEO STRI : Orlando, FL	17.260	0.165		0.157		0.159		-		0.159	Continuing	Continuing	Continuing
Subtotal			17.260	0.165		0.157		0.159		-		0.159	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CCTT Post Deployment Software Support	C/T&M	AVT Simulation : Orlando, FL	0.000	0.640	Aug 2014	0.658	Mar 2015	0.590	Mar 2016	-		0.590	-	1.888	-
Subtotal			0.000	0.640		0.658		0.590		-		0.590	-	1.888	-
			Prior Years	FY 2014	FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			17.260	0.805	0.815		0.749		-		0.749	-	-	-	
Remarks															

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PE 0604780A: *Combined Arms Tactical Trainer (CATT) Co...*
Army

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PE 0604780A / Combined Arms Tactical Trainer (CATT) Core

571 / Close Cbt Tact Trainer

PE 0604780A: *Combined Arms Tactical Trainer (CATT) Co...*
Army

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core	Project (Number/Name) 571 / Close Cbt Tact Trainer

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
P3I in Support of Gaming Technology for Maneuver Training	2	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 577 / Gaming Technology In Support Of Army Training			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
577: Gaming Technology In Support Of Army Training	-	2.047	1.768	2.999	-	2.999	2.562	2.515	2.351	2.356	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Games for Training (GFT) Program prepares Soldiers and leaders for full-spectrum military operations in Unified Land Operations (ULO) with robust training and mission rehearsal capabilities. The GFT program satisfies the Active, the National Guard, and the Army Reserves' educational requirements in the Operational, Institutional, and Self-Development Training Domains with a low-overhead, flexible, persistent training capability on geo-specific and geo-typical terrain that is relevant with all military platforms and weapon systems. GFT comprehensively trains Platoon and below formations. GFT trains higher echelon units and staffs without troops.

FY2016 base funding of \$2.999 million will integrate the GFT flagship product into the Live, Virtual, Constructive/Integrated Training Environment (LVC-ITE). It will also integrate new commercial and government technology products into the current gaming system.

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

	FY 2014	FY 2015	FY 2016
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Games for Training (GFT) program.	1.681	1.444	2.669
Description: Continue EMD phase contract activities for the GFT program.			
FY 2014 Accomplishments: Funding provides modifications to the GFT system that ensured compliance with the Live, Virtual Constructive - Integrated Architecture (LVC-IA) in support of Unified Land Operations (ULO).			
FY 2015 Plans: Funding integrates the flagship product into the LVC-IA. It also integrates new commercial and government technology products into the current gaming system.			
FY 2016 Plans: Funding will provide modifications to the GFT system to ensure compliance with the LVC-IA in support of ULO. It will also integrate new commercial and Government technology products into the current Gaming System.			
Title: Government Program Management for the GFT program.	0.366	0.324	0.330
Description: Government Program Management for the GFT program.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army							Date: February 2015				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>			Project (Number/Name) 577 / <i>Gaming Technology In Support Of Army Training</i>				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2014	FY 2015	FY 2016		
<i>FY 2014 Accomplishments:</i> Government program management, engineering, technical, contract and test activities provided fielding, integration of software and web hosted support to Soldier tactical training.											
<i>FY 2015 Plans:</i> Government program management, engineering, technical, contract and test activities provides fielding, integration of software and web hosted support to Soldier tactical training.											
<i>FY 2016 Plans:</i> Government contract and test activities, will provide integration of software, fielding, and web hosted support to U.S. Army Soldier tactical training.											
Accomplishments/Planned Programs Subtotals							2.047	1.768	2.999		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPA 3: OPA 3, Appropriation NA0176 Gaming Technology in Support of Army Training	9.955	10.165	9.793	-	9.793	12.842	13.514	15.789	16.205	Continuing	Continuing
Remarks											
Funding provides modifications to the GFT system to ensure compliance with the LVC-ITE in support of ULO. It will also integrate new commercial and Government technology products into the current Gaming System.											
D. Acquisition Strategy											
A combination of the transition of Government off the shelf and Commercial off the shelf products coupled with competitive contracting using the existing requirements documents and annual concurrency upgrades to models, terrain and software.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core						Project (Number/Name) 577 / Gaming Technology In Support Of Army Training			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	Various	PEO STRI : Orlando, FL	0.937	0.366		0.324		0.330		-		0.330	Continuing	Continuing	Continuing
Subtotal			0.937	0.366		0.324		0.330		-		0.330	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Games for Training	Various	PEO STRI : Orlando, FL	3.574	1.681	Jun 2014	1.444	Jun 2015	2.669	Jun 2016	-		2.669	Continuing	Continuing	Continuing
Subtotal			3.574	1.681		1.444		2.669		-		2.669	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			4.511	2.047		1.768		2.999		-		2.999	-	-	-
Remarks															

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604780A / Combined Arms Tactical
Trainer (CATT) Core

Project (Number/Name)

577 I Gaming Technology In Support Of Army Training

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>	Project (Number/Name) 577 / <i>Gaming Technology In Support Of Army Training</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LVC-ITE and other product integration into GFT	1	2010	4	2020
Flagship Verification Testing	4	2013	4	2020
Software Development and Integration	1	2016	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 582 / Synthetic Envir Core			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
582: Synthetic Envir Core	-	20.169	20.464	16.658	-	16.658	20.680	18.552	20.916	26.118	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
<p>This project supports the Synthetic Environment Core (SE Core) Program. SE Core's mission is to ensure the Army's training systems and simulators are integrated and interoperable in support of U.S. Army Readiness. SE Core provides virtual simulators with visual models (buildings and vehicles), terrain (over which the simulator moves), and entity behaviors (models performing realistic and appropriate actions such as movement and weapon effects) that are relevant and realistic to Unified Land Operations. The result is a "Fair Fight" capability; no simulator or operator will have an inherent advantage over another. Fair Fight allows for air and ground to have coordinated and integrated training events that accurately replicate combat operations. Additionally, SE Core is building the Army's Common Virtual Environment (CVE) that provides the linkage between simulators and establishes a common environment for interoperability, allowing various simulators to be linked together for a train-as-we-fight capability. SE Core is a foundational element in the Integrated Training Environment linking the embedded systems, multi-mode Live, Virtual, Constructive, Gaming (LVCG) training capability with current systems.</p> <p>The SE Core components are Virtual One Semi-Automated Forces (OneSAF) integration; terrain database production; common visual models; virtual systems architecture; a dynamic environment; and mission command development. A major SE Core component is the Standard Terrain Database Generation Capability (STDGC) process used to produce the synthetic terrain used in simulators and simulations. This terrain is a key component for virtual simulators and constructive simulations and will meet the demands of today's and future simulations.</p> <p>FY 2016 base funding of \$16.658 million will continue the efforts of providing expanded development of the capability to produce common terrain databases. FY 2016 funds will modify the Terrain Development process to include constructive terrain databases, continue to enhance OneSAF in the SE Core Architecture and generate databases for constructive simulation and gaming. Maintaining OneSAF for virtual simulations enables interoperability with the Live, Virtual, Constructive Integrated Training Environment (LVC ITE) and is a cost avoidance for individual virtual simulators in that they that do not develop and maintain separate Semi-Automated Forces (SAFs). SE Core will continue to upgrade, integrate and refine the Common Virtual Components, and continue to develop common visual models and transportation networks.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Synthetic Environment Core (SE Core) program.									18.351	16.883	13.017	
Description: Continue EMD phase contract activities for the SE Core program.												
FY 2014 Accomplishments:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core			Project (Number/Name) 582 / Synthetic Envir Core					
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
Provided expansion of the production capability to meet the growing demand for synthetic terrain for training including constructive simulations. Efforts to improve interoperability across simulators and simulations continue. FY 2015 Plans: Provides expansion of the production capability to meet the growing demand for synthetic terrain for training, including constructive simulations and Regionally Aligned Forces (RAF). Efforts to improve interoperability across simulators and simulations continue. FY 2016 Plans: Increment 2 will provide expansion of the production capability to meet the demand for synthetic terrain for training including constructive simulation and gaming. Efforts to improve interoperability across simulators and simulations continue to include transportation networks.											
Title: Government Program Management for the Synthetic Environment Core (SE Core) program. Description: Government Program Management for the SE Core program. FY 2014 Accomplishments: Provided program management, engineering and technical oversight, contract support, and travel for Subject Matter Experts for the development of SE Core. FY 2015 Plans: Provides program management, engineering and technical oversight, contract support, and travel for support of site surveys and Subject Matter Experts for the development of SE Core. FY 2016 Plans: Will provide program management, engineering and technical oversight, contract support, and travel for support of site surveys and Subject Matter Experts for the development of SE Core. Will provide acquisition management for the solicitation and evaluation for a new SE Core contract award.								1.818	3.581	3.641	
Accomplishments/Planned Programs Subtotals								20.169	20.464	16.658	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OMA, Appropriation, 121014000: OMA, Appropriation 121014000, TBWG	9.982	14.512	16.366	-	16.366	7.838	8.973	9.294	9.301	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 582 / <i>Synthetic Envir Core</i>			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
Remarks											
D. Acquisition Strategy											
The government awarded a cost plus fixed fee (CPFF) to Leidos in August 2011 with a period of performance start date of December 2011. Leidos was formerly known as Science Applications International Corporation (SAIC). This contract has a one-year base with four one-year options. The government exercised the first option in December 2012, the second option in December 2013 and the third option in December 2014. The government continues to evaluate the contractor's performance and fully expect to exercise the fourth option in December 2015.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>						Project (Number/Name) 582 / <i>Synthetic Envir Core</i>			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	Various	Various : Various	3.622	-		-		-		-		-	-	3.622	3.622
Government Program Management Support	Various	PEO STRI : Orlando, FL	18.971	1.818		3.581		3.641		-		3.641	Continuing	Continuing	Continuing
Subtotal			22.593	1.818		3.581		3.641		-		3.641	-	-	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development - Architecture and Integration	C/CPFF	SAIC : Orlando, FL	6.946	-		-		-		-		-	-	6.946	6.946
Technology Development -Architecture and Integration	C/CPFF	SAIC : Orlando, FL	50.785	-		-		-		-		-	-	50.785	50.785
Technology Development -Database Virtual Environment Development	C/CPFF	CAE, USA : Orlando, FL	56.179	-		-		-		-		-	-	56.179	56.179
Technology Development-Common Virtual Environment & Management	C/CPFF	SAIC : Orlando, FL	18.192	18.351	Dec 2013	16.883	Dec 2014	13.017	Dec 2015	-		13.017	Continuing	Continuing	Continuing
Subtotal			132.102	18.351		16.883		13.017		-		13.017	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development - Test Support	Various	Test Community : Various	0.125	-		-		-		-		-	-	0.125	0.125
Subtotal			0.125	-		-		-		-		-	-	0.125	0.125

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>					Project (Number/Name) 582 / <i>Synthetic Envir Core</i>				

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks Not Applicable															
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			154.820	20.169		20.464		16.658		-		16.658	-	-	-
Remarks															

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

Date: February 2015

[illegible]

2040 / 5

R-1 Program Element (Number/Name)	Program Element Description	Program Element Type	Program Element Status	Program Element Location	Program Element Contact	Program Element Date	Program Element Notes
1	1.1	1.1.1	1.1.1.1	1.1.1.1.1	1.1.1.1.1.1	1.1.1.1.1.1.1	1.1.1.1.1.1.1.1
2	2.1	2.1.1	2.1.1.1	2.1.1.1.1	2.1.1.1.1.1	2.1.1.1.1.1.1	2.1.1.1.1.1.1.1
3	3.1	3.1.1	3.1.1.1	3.1.1.1.1	3.1.1.1.1.1	3.1.1.1.1.1.1	3.1.1.1.1.1.1.1
4	4.1	4.1.1	4.1.1.1	4.1.1.1.1	4.1.1.1.1.1	4.1.1.1.1.1.1	4.1.1.1.1.1.1.1
5	5.1	5.1.1	5.1.1.1	5.1.1.1.1	5.1.1.1.1.1	5.1.1.1.1.1.1	5.1.1.1.1.1.1.1
6	6.1	6.1.1	6.1.1.1	6.1.1.1.1	6.1.1.1.1.1	6.1.1.1.1.1.1	6.1.1.1.1.1.1.1
7	7.1	7.1.1	7.1.1.1	7.1.1.1.1	7.1.1.1.1.1	7.1.1.1.1.1.1	7.1.1.1.1.1.1.1
8	8.1	8.1.1	8.1.1.1	8.1.1.1.1	8.1.1.1.1.1	8.1.1.1.1.1.1	8.1.1.1.1.1.1.1
9	9.1	9.1.1	9.1.1.1	9.1.1.1.1	9.1.1.1.1.1	9.1.1.1.1.1.1	9.1.1.1.1.1.1.1
10	10.1	10.1.1	10.1.1.1	10.1.1.1.1	10.1.1.1.1.1	10.1.1.1.1.1.1	10.1.1.1.1.1.1.1
11	11.1	11.1.1	11.1.1.1	11.1.1.1.1	11.1.1.1.1.1	11.1.1.1.1.1.1	11.1.1.1.1.1.1.1
12	12.1	12.1.1	12.1.1.1	12.1.1.1.1	12.1.1.1.1.1	12.1.1.1.1.1.1	12.1.1.1.1.1.1.1
13	13.1	13.1.1	13.1.1.1	13.1.1.1.1	13.1.1.1.1.1	13.1.1.1.1.1.1	13.1.1.1.1.1.1.1
14	14.1	14.1.1	14.1.1.1	14.1.1.1.1	14.1.1.1.1.1	14.1.1.1.1.1.1	14.1.1.1.1.1.1.1
15	15.1	15.1.1	15.1.1.1	15.1.1.1.1	15.1.1.1.1.1	15.1.1.1.1.1.1	15.1.1.1.1.1.1.1
16	16.1	16.1.1	16.1.1.1	16.1.1.1.1	16.1.1.1.1.1	16.1.1.1.1.1.1	16.1.1.1.1.1.1.1
17	17.1	17.1.1	17.1.1.1	17.1.1.1.1	17.1.1.1.1.1	17.1.1.1.1.1.1	17.1.1.1.1.1.1.1
18	18.1	18.1.1	18.1.1.1	18.1.1.1.1	18.1.1.1.1.1	18.1.1.1.1.1.1	18.1.1.1.1.1.1.1
19	19.1	19.1.1	19.1.1.1	19.1.1.1.1	19.1.1.1.1.1	19.1.1.1.1.1.1	19.1.1.1.1.1.1.1
20	20.1	20.1.1	20.1.1.1	20.1.1.1.1	20.1.1.1.1.1	20.1.1.1.1.1.1	20.1.1.1.1.1.1.1
21	21.1	21.1.1	21.1.1.1	21.1.1.1.1	21.1.1.1.1.1	21.1.1.1.1.1.1	21.1.1.1.1.1.1.1
22	22.1	22.1.1	22.1.1.1	22.1.1.1.1	22.1.1.1.1.1	22.1.1.1.1.1.1	22.1.1.1.1.1.1.1
23	23.1	23.1.1	23.1.1.1	23.1.1.1.1	23.1.1.1.1.1	23.1.1.1.1.1.1	23.1.1.1.1.1.1.1
24	24.1	24.1.1	24.1.1.1	24.1.1.1.1	24.1.1.1.1.1	24.1.1.1.1.1.1	24.1.1.1.1.1.1.1
25	25.1	25.1.1	25.1.1.1	25.1.1.1.1	25.1.1.1.1.1	25.1.1.1.1.1.1	25.1.1.1.1.1.1.1
26	26.1	26.1.1	26.1.1.1	26.1.1.1.1	26.1.1.1.1.1	26.1.1.1.1.1.1	26.1.1.1.1.1.1.1
27	27.1	27.1.1	27.1.1.1	27.1.1.1.1	27.1.1.1.1.1	27.1.1.1.1.1.1	27.1.1.1.1.1.1.1
28	28.1	28.1.1	28.1.1.1	28.1.1.1.1	28.1.1.1.1.1	28.1.1.1.1.1.1	28.1.1.1.1.1.1.1
29	29.1	29.1.1	29.1.1.1	29.1.1.1.1	29.1.1.1.1.1	29.1.1.1.1.1.1	29.1.1.1.1.1.1.1
30	30.1	30.1.1	30.1.1.1	30.1.1.1.1	30.1.1.1.1.1	30.1.1.1.1.1.1	30.1.1.1.1.1.1.1
31	31.1	31.1.1	31.1.1.1	31.1.1.1.1	31.1.1.1.1.1	31.1.1.1.1.1.1	31.1.1.1.1.1.1.1
32	32.1	32.1.1	32.1.1.1	32.1.1.1.1	32.1.1.1.1.1	32.1.1.1.1.1.1	32.1.1.1.1.1.1.1

PE 0604780A / Combined Arms Tactical Trainer (CATT) Core

Project (Number/Name)	Start Date	End Date	Duration (Days)	Actual Cost	Budgeted Cost	Variance	Cost Index	Performance Index	Cost Variance	Cost Performance	Cost Variance	Cost Performance
101	10/1/2018	10/31/2018	31	100000	100000	0	1.00	1.00	0	1.00	0	1.00
102	11/1/2018	11/30/2018	30	110000	110000	0	1.00	1.00	0	1.00	0	1.00
103	12/1/2018	12/31/2018	31	120000	120000	0	1.00	1.00	0	1.00	0	1.00
104	1/1/2019	1/31/2019	31	130000	130000	0	1.00	1.00	0	1.00	0	1.00
105	2/1/2019	2/28/2019	28	140000	140000	0	1.00	1.00	0	1.00	0	1.00
106	3/1/2019	3/31/2019	31	150000	150000	0	1.00	1.00	0	1.00	0	1.00
107	4/1/2019	4/30/2019	30	160000	160000	0	1.00	1.00	0	1.00	0	1.00
108	5/1/2019	5/31/2019	31	170000	170000	0	1.00	1.00	0	1.00	0	1.00
109	6/1/2019	6/30/2019	30	180000	180000	0	1.00	1.00	0	1.00	0	1.00
110	7/1/2019	7/31/2019	31	190000	190000	0	1.00	1.00	0	1.00	0	1.00
111	8/1/2019	8/31/2019	31	200000	200000	0	1.00	1.00	0	1.00	0	1.00
112	9/1/2019	9/30/2019	30	210000	210000	0	1.00	1.00	0	1.00	0	1.00
113	10/1/2019	10/31/2019	31	220000	220000	0	1.00	1.00	0	1.00	0	1.00
114	11/1/2019	11/30/2019	30	230000	230000	0	1.00	1.00	0	1.00	0	1.00
115	12/1/2019	12/31/2019	31	240000	240000	0	1.00	1.00	0	1.00	0	1.00
116	1/1/2020	1/31/2020	31	250000	250000	0	1.00	1.00	0	1.00	0	1.00
117	2/1/2020	2/28/2020	28	260000	260000	0	1.00	1.00	0	1.00	0	1.00
118	3/1/2020	3/31/2020	31	270000	270000	0	1.00	1.00	0	1.00	0	1.00
119	4/1/2020	4/30/2020	30	280000	280000	0	1.00	1.00	0	1.00	0	1.00
120	5/1/2020	5/31/2020	31	290000	290000	0	1.00	1.00	0	1.00	0	1.00
121	6/1/2020	6/30/2020	30	300000	300000	0	1.00	1.00	0	1.00	0	1.00
122	7/1/2020	7/31/2020	31	310000	310000	0	1.00	1.00	0	1.00	0	1.00
123	8/1/2020	8/31/2020	31	320000	320000	0	1.00	1.00	0	1.00	0	1.00
124	9/1/2020	9/30/2020	30	330000	330000	0	1.00	1.00	0	1.00	0	1.00
125	10/1/2020	10/31/2020	31	340000	340000	0	1.00	1.00	0	1.00	0	1.00
126	11/1/2020	11/30/2020	30	350000	350000	0	1.00	1.00	0	1.00	0	1.00
127	12/1/2020	12/31/2020	31	360000	360000	0	1.00	1.00	0	1.00	0	1.00
128	1/1/2021	1/31/2021	31	370000	370000	0	1.00	1.00	0	1.00	0	1.00
129	2/1/2021	2/28/2021	28	380000	380000	0						

582 / Synthetic Envir Core

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Increment 2	[Redacted]																											
Increment 3	[Redacted]				[Redacted]								[Redacted]															
Program Management	[Redacted]																											
	[Redacted]				[Redacted]																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>	Project (Number/Name) 582 / <i>Synthetic Envir Core</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 2	4	2013	4	2016
Increment 3	1	2017	4	2020
Program Management	4	2013	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core				Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
585: Aviation Combined Arms Tactical Trainer	-	3.699	11.665	1.216	-	1.216	6.312	5.851	7.753	5.590	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Aviation Combined Arms Tactical Trainer (AVCATT) is Army Aviation's only Collective Training Program of Record for Active, Reserve and Army National Guard Aviation Units. AVCATT enables unit collective and combined arms air-ground training for AH-64, UH-60, CH-47, and OH-58 aircrews within the Live, Virtual, Constructive, & Gaming (LVC-G) Integrated Training Environment (ITE). The AVCATT also supports the training of Non-Rated crew members in crew coordination, flight, aerial gunnery, hoist and slingload related tasks via the Non-Rated Crew Member Manned Module (NCM3); which can be linked to AVCATT's UH-60 and CH-47 cockpit configurations to support a unit's specific Mission Training Requirements.

FY 2016 base funding of \$1.216 million will complete the development and testing of the Voice Communication System capability. The required software will allow Army Aviators to properly communicate to internal and external entities in support of Aviation Collective Training Tasks.

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

	FY 2014	FY 2015	FY 2016
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Aviation Combined Arms Tactical Trainer (AVCATT) program.	3.699	11.665	1.216
Description: Continue EMD phase contract activities for the AVCATT program.			
FY 2014 Accomplishments: Designed new capabilities to enhance training when using the AVCATT and NCM3 in combined mode, including improved communications, hoist operations, slingload operations, and visual system realism improvements. Developed aerial gunnery training capabilities in NCM3, per the Capability Production Document requirements.			
Developed, integrated, and tested a persistent dynamic terrain capability in AVCATT which will improve the simulated representation of terrain in the virtual Aviation environment.			
FY 2015 Plans: Continues development and testing for new capabilities to enhance training when using the AVCATT and NCM3 in combined mode, including improved communications, hoist operations, slingload operations, and visual system realism improvements.			
Continues the integration and test phase for a persistent dynamic terrain capability in AVCATT which will improve the simulated representation of terrain in the virtual Aviation environment.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>				Project (Number/Name) 585 / <i>Aviation Combined Arms Tactical Trainer</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
<p>Continues the development, integration, and testing of new capabilities to enhance training when using the AVCATT and NCM3 in a combined mode.</p> <p>Conducts training effectiveness analysis of the AVCATT system in meeting Army Aviation collective training requirements.</p> <p>Designs, develops, and tests new and improved architecture supporting virtual machines in support of reduction in future AVCATT operation and sustainment costs.</p> <p>Designs, develops, and tests new interfaces and protocols for a Voice Communication System Upgrade to remain synchronized with improvements to tactical radios for the AVCATT RWA platforms.</p> <p>FY 2016 Plans: Will complete development and testing for new interfaces and protocols for a Voice Communication System Upgrade to remain synchronized with improvements to tactical radios for the AVCATT RWA platforms.</p>											
Accomplishments/Planned Programs Subtotals								3.699	11.665	1.216	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Other Procurement, Army: OPA3, <i>Appropriation NA0173 Aviation Combined Arms Tactical Trainer</i>	34.913	10.040	30.068	-	30.068	28.360	27.861	28.379	29.203	Continuing	Continuing
• Operations and Maintenance, Army: OMA, <i>Appropriation 121018000 Aviation Combined Arms Tactical Trainer</i>	-	0.150	0.100	-	0.100	0.050	-	-	-	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
: All AVCATT/NCM3 development will utilize small business competitively awarded contract vehicles, Small Business Innovative Research (SBIR) contract vehicles, or agreements with the Army Research Laboratory for University support of research and development.											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core	Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core						Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AVCATT Program Management Support	Various	PEO STRI : Orlando, FL	0.000	0.577		0.789		-		-		-	-	1.366	-
Subtotal			0.000	0.577		0.789		-		-		-	-	1.366	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AVCATT Manned Unmanned Teaming (MUM-T)	C/CPFF	Applied Visual Technologies : Orlando, FL	1.880	-		-		-		-		-	-	1.880	-
AVCATT Visual Display Research	C/CPFF	Batelle Memorial Institute : Columbus, OH	0.318	-		-		-		-		-	-	0.318	-
AVCATT Dynamic Terrain	SS/CPFF	Dignitas Technologies, LLC : Orlando, FL	0.000	0.100	Sep 2014	0.250	Jun 2015	-		-		-	-	0.350	-
AVCATT NCM3 Development	C/CPFF	CymStar : Broken Arrow, Oklahoma	0.000	2.301	Aug 2014	1.200	Mar 2015	-		-		-	-	3.501	-
AVCATT/NCM3 Gunnery KPP	C/CPFF	Applied Visual Technologies : Orlando, FL	0.000	0.721	Apr 2014	3.228	Mar 2015	-		-		-	-	3.949	-
AVCATT Training Effectiveness Analysis	SS/CPFF	University of Central Florida : Orlando	0.000	-		1.182	Mar 2015	-		-		-	-	1.182	-
AVCATT Virtualization	C/CPFF	Applied Visual Technologies : Orlando, FL	0.000	-		2.249	May 2015	-		-		-	-	2.249	-
AVCATT Voice Communication Upgrade	C/CPFF	Applied Visual Technologies : Orlando, FL	0.000	-		2.767	May 2015	1.216	Jan 2016	-		1.216	-	3.983	-
Subtotal			2.198	3.122		10.876		1.216		-		1.216	-	17.412	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army											Date: February 2015				
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core					Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer					
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2.198	3.699		11.665		1.216		-		1.216	-	18.778	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604780A / Combined Arms Tactical Trainer (CATT) Core								Project (Number/Name) 585 / Aviation Combined Arms Tactical Trainer										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AVCATT Manned Unmanned Teaming (MUM-T)																												
AVCATT Visual Display Research																												
AVCATT Dynamic Terrain																												
Non-Rated Crew Member Manned Module (NCM3) Development																												
AVCATT/NCM3 Gunnery KPP																												
AVCATT Training Efeciveness Analysis																												
AVCATT Virtualization																												
AVCATT Voice Communication Upgrade																												
AVCATT/NCM3 EMD																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604780A / <i>Combined Arms Tactical Trainer (CATT) Core</i>	Project (Number/Name) 585 / <i>Aviation Combined Arms Tactical Trainer</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AVCATT Manned Unmanned Teaming (MUM-T)	4	2013	2	2015
AVCATT Visual Display Research	1	2014	4	2015
AVCATT Dynamic Terrain	4	2014	4	2016
Non-Rated Crew Member Manned Module (NCM3) Development	4	2014	4	2016
AVCATT/NCM3 Gunnery KPP	1	2015	4	2016
AVCATT Training Effectiveness Analysis	2	2015	2	2016
AVCATT Virtualization	3	2015	4	2016
AVCATT Voice Communication Upgrade	3	2015	2	2017
AVCATT/NCM3 EMD	2	2017	4	2021

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	91.427	85.246	99.242	-	99.242	122.407	123.702	124.982	126.340	Continuing	Continuing
DY3: NIE Test & Evaluation	-	14.494	24.773	12.215	-	12.215	13.588	11.717	11.739	11.887	Continuing	Continuing
DY4: Network Integration Support	-	10.614	20.408	14.131	-	14.131	15.824	13.860	13.882	14.033	Continuing	Continuing
DY5: Production/Field Coordination for Capability Sets	-	4.059	2.802	4.601	-	4.601	5.584	5.699	5.812	5.926	Continuing	Continuing
DY6: Brigade and Platform Integration Support	-	41.048	23.599	45.504	-	45.504	59.703	63.926	64.194	64.185	Continuing	Continuing
DY7: Army Systems Engineering, Architecture & Analysis	-	14.664	9.638	16.416	-	16.416	19.914	20.490	21.142	21.887	Continuing	Continuing
DZ6: Army Integration Management & Coordination	-	6.548	4.026	6.375	-	6.375	7.794	8.010	8.213	8.422	Continuing	Continuing

Note

FY 2016 funding request was reduced by \$18.854 million to account for the availability of prior year execution balances.

This mission includes the development and management of the Army's System of System Architectures and design, the Network Integration Evaluation (NIE) portion of the Agile Process and the coordination of Capability Set - Synchronized Fielding (CS-SF). This PE is comprised of six projects that align the funding with the planning and execution of NIE Events: DY3, DY4 and DY6; (CS-SF) missions; Production and Fielding Coordination for Capability Sets: DY5; System of System Engineering Architecture: DY7, and Army Integration Management & Coordination: DZ6.

Beginning in FY2014 DU8, DU9, and DV1 were closed and the funding requirements were transferred to DY3, DY4, DY5, DY6, DY7 and DZ6 to better align with the operational mission.

A. Mission Description and Budget Item Justification

The FY 2016 funding supports Army conduct of Network Integration Evaluation (NIE), System of Systems Engineering, and Architecture requirements, Common Operating Environment (COE) and Cyber Integration and Management, and Capability Set Synchronized Fieldings. The specific evaluation requirements will support Network 2020 and Force 2025 objectives and planned end states.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604798A I Brigade Analysis, Integration and Evaluation	
<p>Project DY3; NIE Test & Evaluation, in FY 2016, provides for the planning and conduct of detailed experiments (NIE evaluations), tests and evaluation of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system. It includes all test support activities such as Blade time for Helicopters, Satellite time for the network, med evacuation, and protection for the soldier.</p> <p>Project DY4; Network Integration Support, in FY 2016, provides for Network Integration of all Network Systems Under Evaluation (SUE) (industry and/or government) Hardware/Software into existing Communications Electronics Research, Development and Engineering Center (CERDEC) System Integration Laboratories at Aberdeen Proving Ground (APG) to simulate the Brigade Network for NIE and determine if new capabilities successfully resolve known gaps. It includes the refinement of US Army Training and Doctrine Command (TRADOC) developed requirements and development of the sources sought, Request For Proposal (RFP) and Horseblanket in support of upcoming NIE Events. It also supports the conduct of lab evaluations of industry and government SUEs to ensure the systems fulfill known capability gaps and are integrated into the network prior to going to the field-based evaluation. Provides industry feedback of performance in the Lab and Network. Lab Based risk reduction is also funded by this line to improve Network performance prior and when in the field. It also includes any hardware and Field Service Representative (FSR) support required to support the lab based integration and risk reduction,</p> <p>Project DY5; Production/Fielding Coordination for Capability Sets, in FY 2016, provides for the development and coordination of Programs to produce, integrate, and field the NIE evaluated Brigade improvements to the Brigade Combat Teams (BCTs). This effort does not fund the production, or integration, or fielding of the Capability Sets, but it does fund the coordination of requirements and integration along with scheduling of all activities for the Army through the supporting Program Executive Offices (PEOs), Program Managers (PMs) and Research, Development and Engineering Centers (RDECs).</p> <p>Project DY6; Brigade and Platform Integration Support, in FY 2016, provides for the integration of the lab-developed network solution onto soldier and vehicle systems to ensure an integrated network across the Brigade and battle field and the facility support requirements to complete these efforts. This includes contractor, FSR and Government support to conduct vehicle integration along with integration of the network and vehicles into a Brigade Combat Team (BCT) for the NIE test. This project funds the hardware and FSR support from contractors to support integration and evaluation. This includes the support for the four phases of integration and test evaluation conducted at the NIE. It also includes de-modification of vehicles after completion of the event. Provides industry and Army leadership feedback of performance from the NIE to decide what systems to procure and field as part of the Capability Set.</p> <p>Project DY7; Army System Engineering, Architecture & Analysis, in FY 2016, provides for basis of all Agile Process, COE, and Cyber Planning and implementation. This includes the System of Systems SOS engineering and analysis that creates the Army top level architectures, Basis of Issue Plans (BOIP), and designs that feed the planned I Capability Sets, NIE plans, and Army Program Objective Memorandum (POM).</p> <p>Project DZ6; Army Integration Management & Coordination, in FY 2016, provides for all "shared" functions (Human resources, Budget development and executions, Acquisition, Operations, Program Coordination, Facilities management) and headquarters functions that supports the technical aspects of the Network integration, Platform integration, Brigade Integration and the Production Integration and coordination and synchronized fielding teams.</p> <p>Execution of the above projects is in accordance with the Army Acquisition Executive's NIE and Capability Set (CS) Business Execution Ground Rules dated August, 1, 2012.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	99.947	105.279	118.096	-	118.096
Current President's Budget	91.427	85.246	99.242	-	99.242
Total Adjustments	-8.520	-20.033	-18.854	-	-18.854
• Congressional General Reductions	-	-0.033			
• Congressional Directed Reductions	-	-20.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.200	-			
• SBIR/STTR Transfer	-3.320	-			
• Adjustments to Budget Years	-	-	-18.854	-	-18.854

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DY3: <i>NIE Test & Evaluation</i>	-	14.494	24.773	12.215	-	12.215	13.588	11.717	11.739	11.887	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports test and evaluation portion of Phase V of the Army's Agile Network Integration process in support of the Army's network Endstate and objectives for Network 2020 and Force 2025 and beyond. The project will conduct the actual Network Integration Evaluation at Fort Bliss, TX and White Sands Missile Range, NM which evaluates the integrated soldier and weapon systems operational impact on the brigade to include Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities (DOTMLPF) and perform Net Warrior integration for NIE/Bold Quest (BQ) Army Warfighter Assessment objectives. The results of Phase V will address and answer senior Army leadership's questions about force makeup and effectiveness and provides Army leadership recommendations for improving operational requirements and enhancing technical specifications to achieve network 2020 Endstates and Force 2025 objectives. The Army leadership will use the data from these events to identify which systems to procure and field in future Capability Sets for improved Network and Brigade Capability. This project includes reimbursable government and contractor efforts to develop detailed test scenarios and evaluation criteria for field based evaluations of the Brigade Combat Team, and then conduct the verifications and validation of the Brigade as part of that NIE. As part of the evaluation process, this project includes the development of the data collection plans, the instrumentation of the systems in the Brigade, and also the data collectors and analysis of the test results. This project also includes the development and distribution of the detailed, technical evaluation reports which provides the ability to identify which equipment needs further development, or is ready for integration into a future Capability Set. Lastly, this project includes all the costs for supporting the test, such as, but not limited to; SATCOM satellite time, MEDEVAC support during test, helicopter blade time, petroleum, oil and lubricants (POL) and other test support materials, equipment, personnel and facilities.

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

	FY 2014	FY 2015	FY 2016
Title: NIE Test and Evaluation Costs	8.841	15.112	7.451
Description: These funds provide for planning and conducting detailed experiments, tests and evaluations of potential Network, Software and Hardware systems for procurement and integration into the Army's Warfighter system.			
FY 2014 Accomplishments: Completed NIE 14.2 and NIE 15.1 test planning, instrumentation planning, coordination of requirements, assets planning, range planning and soldier planning in supporting of the execution of System Under Tests (WINT INC2, JBCP, Nett Warrior, HMS MP, and Shadow V2) and the overall verification and validation of Capability Set (CS) 15/16 network architecture at FY 14 NIEs. Planning activities included coordination of requirements with Army Evaluation Command (AEC), Operational Test Center (OTC), White Sands Missile Range (WSMR) in order to develop and procure modeling and simulation tools, instrumentation for data collection, facilities required to store and maintain equipment, facilities required to integrate capabilities, other test equipment, and REDFORCE systems. Activities supporting the execution of the actual experimentation, tests, and evaluation included coordination and procurement of range resources to include range time, range personnel, test engineering support,			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>operators and subject matter experts on systems under evaluation. Costs included management of the test/experiment and support for all experiments and tests. Other costs included distributed networking capability (i.e. Defense Research Engineering (DREN), I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between Aberdeen Proving Grounds (APG), Electronic Proving Grounds (EPG), FT Bliss and White Sands Missile Range. Conducted coordination with AEC on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR).</p> <p>FY 2015 Plans: For baselining events, complete test planning, coordination of requirements, assets planning, range planning, and soldier planning. Conduct test planning and management which includes, conduct coordination of requirements with Army Evaluation Command (AEC), Operational Test Center (OTC), White Sands Missile Range (WSMR). This coordination includes development and procurement of modeling and simulation tools, instrumentation for data collection, facilities required to store and maintain equipment, facilities required to integrate capabilities, other test equipment, and REDFORCE systems. Conduct safety and operational assessments, data collection, data analysis and report development. Conduct experimentation, tests, and evaluation by coordinating and procuring range resources to include range time, range personnel, test engineering support, operators and subject matter experts on systems under evaluation. Includes costs of management of the test/experiment and support all experiments and tests. Includes costs for distributed networking capability (i.e. Defense Research Engineering (DREN), I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between Aberdeen Proving Grounds (APG), Electronic Proving Grounds (EPG), FT Bliss and White Sands Missile Range. Conduct coordination with AEC on the development of System Evaluation Plans (SEP) and Operational Milestone Assessment Reports (OMAR) and maintain all data bases of evaluation analysis. Conduct Red/Blue Force Team Cyber assessments in the lab and in the field.</p> <p>FY 2016 Plans: Complete test planning, coordination of requirements, assets planning, range planning, and soldier planning. Conduct test planning and management which includes, conduct coordination of requirements with Army Evaluation Center (AEC), Operational Test Command (OTC), White Sands Missile Range (WSMR). This coordination includes development and procurement of modeling and simulation tools, instrumentation for data collection, facilities required to store and maintain equipment, facilities required to integrate capabilities, other test equipment, and REDFORCE systems. Conduct safety and operational assessments, data collection, data analysis and report development. Conduct experimentation, tests, and evaluation by coordinating and procuring range resources to include range time, range personnel, test engineering support, operators and subject matter experts on systems under evaluation. Includes costs of management of the test/experiment and support all experiments and tests. Includes costs for distributed networking capability (i.e. Defense Research Engineering (DREN), I/O Range, circuits, etc) and other electronic infrastructure data transfer medias between Aberdeen Proving Ground (APG), Electronic Proving Ground (EPG), FT Bliss and White Sands Missile Range. Conduct coordination with AEC on the development of System Evaluation Plans (SEP) and</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation				Project (Number/Name) DY3 / NIE Test & Evaluation			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016
Operational Milestone Assessment Reports (OMAR) and maintain all data bases of evaluation analysis. Conduct Red/Blue Force Team Cyber assessments in the lab and in the field.											
Title: Other Support Cost									5.653	9.661	4.764
Description: Other Support Cost required for NIE Event.											
FY 2014 Accomplishments: Procured and managed satellite time, POL, security support, facilities, MEDEVAC support, blade time for helicopters, and others services, equipment and maintenance of facilities which ensured the successful evaluations/tests during NIE 14.2 and 15.1.											
FY 2015 Plans: Procure and manage satellite time, POL, security support, facilities, MEDEVAC support, blade time for helicopters, and others services, equipment and maintenance of facilities to ensure a successful evaluation/test											
FY 2016 Plans: Procure and manage satellite time, POL, security support, facilities, MEDEVAC support, blade time for helicopters, and others services, equipment and maintenance of facilities to ensure a successful evaluation/test.											
Accomplishments/Planned Programs Subtotals									14.494	24.773	12.215
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• DY4: DY4 Network Integration Support	10.614	20.408	14.131	-	14.131	15.824	13.860	13.882	14.033	Continuing	Continuing
• DY5: DY5 Production/Fielding Coordination for Capability Sets	4.059	2.802	4.601	-	4.601	5.584	5.699	5.812	5.926	Continuing	Continuing
• DY6: DY6 Brigade and Platform Integration Support	41.048	23.599	45.504	-	45.504	59.703	63.926	64.194	64.185	Continuing	Continuing
• DY7: DY7 Army Systems Engineering, Architecture and Analysis	14.664	9.638	16.416	-	16.416	19.914	20.490	21.142	21.887	Continuing	Continuing
• DZ6: DZ6 Army Integration & Coordination Management	6.548	4.026	6.375	-	6.375	7.794	8.010	8.213	8.422	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>
D. Acquisition Strategy This project includes Army Test Evaluation Center competitive contracts for test support services. Additional competitive contracts are awarded by Defense Information Systems Agency (DISA) for satellite support.		
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>						Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>			

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Support Costs	TBD	Various Note:1 : TBD	0.000	5.653	Nov 2013	9.661	Nov 2014	4.764	Nov 2015	-		4.764	-	20.078	-
Subtotal			0.000	5.653		9.661		4.764		-		4.764	-	20.078	-

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed, Aberdeen Proving Grounds (MD), FT Bliss (TX), White Sands Missile Range (NM).
 - Includes support services from DISA (for satellite time) and other governments agencies

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NIE ATEC Test and Evaluation Costs	TBD	Various Note:1 : TBD	0.000	8.841	Nov 2013	15.112	Nov 2014	7.451	Nov 2015	-		7.451	-	31.404	-
Subtotal			0.000	8.841		15.112		7.451		-		7.451	-	31.404	-

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), Electronic Proving Grounds (AZ), FT Bliss (TX), White Sands Missile Range (NM).
 - Program Test support through ATEC

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	14.494	24.773	12.215	-	12.215	-	51.482	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation								Project (Number/Name) DY3 / NIE Test & Evaluation																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(1) NIE 14.2 DP 2										I	1																										
NIE 14.2 Lab Integration/Testing																																					
NIE 14.2 Candidate Solution Integration										Canc																											
NIE 14.2 LoadEx										Load																											
NIE 14.2 CommEx										CommEx																											
NIE 14.2 Pilot										Pilot																											
NIE 14.2 Event										NIE 14.2 E																											
NIE 14.2 Event Analysis & Summary										NIE 14.2 E																											
NIE 15.1 Planning - Execution																																					
(2) NIE 15.1 Industry Day										I	2																										
(3) NIE 15.1 DP 1										NIE 1:		3																									
(4) NIE 15.1 DP 2										NIE 15.1 D		4																									
NIE 15.1 Lab Integration/Testing										NIE 15.1 L																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																			
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation								Project (Number/Name) DY3 / NIE Test & Evaluation																			
Event Name								FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
								1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 15.1 Candidate Solution Integration								NIE 15.1 C																											
NIE 15.1 LoadEx								NIE 15.1 Load																											
NIE 15.1 CommEx								NIE 15.1 Comr																											
NIE 15.1 Pilot								NIE 15.1 Pilot																											
NIE 15.1 Event								NIE 15.1 Event																											
NIE 15.1 Event Analysis & Summary								NIE 15.1 Event Ana																											
NIE 15.2 Planning - Execution																																			
								NIE 15.2																											
(1) NIE 15.2 Industry Day								NIE 15.2 Ir																											
(2) NIE 15.2 DP 1								NIE 15.2 DP 1																											
(3) NIE 15.2 DP 2								NIE 15.2 DP 2																											
NIE 15.2 Lab Integration/Testing								NIE 15.2 Lab Integr																											
NIE 15.2 Candidate Solution Integration								NIE 15.2 Candidate Sol																											
NIE 15.2 LoadEx								NIE 15.2 LoadEx																											

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

Date: February 2015

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)
DY3 / *NIE Test & Evaluation*

Event Name		FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 15.2 CommEx		NIE 15.2 CommEx																											
NIE 15.2 Pilot		NIE 15.2 Pilot																											
NIE 15.2 Event		NIE 15.2 Event																											
NIE 15.2 Event Analysis & Summary	NIE 15.2 Event Analysis & Summary	NIE 15.2 Event Analysis & Summary																											
NIE 16.1 Planning - Execution	NIE 16.1 Planning - Execution																												
(1) NIE 16.1 Industry Day	NIE 16.1 Industry Day	NIE 16.1 Industry Day																											
NIE 16.1 DP 1		NIE 16.1 DP 1																											
NIE 16.1 DP 2		NIE 16.1 DP 2																											
NIE 16.1 Lab Integration/Testing	NIE 16.1 Lab Integration/Testing	NIE 16.1 Lab Integration/Testing																											
NIE 16.1 Candidate Solution Integration	NIE 16.1 Candidate Solution Integration	NIE 16.1 Candidate Solution Integration																											
NIE 16.1 LoadEx		NIE 16.1 LoadEx																											
NIE 16.1 CommEx		NIE 16.1 CommEx																											
NIE 16.1 Pilot		NIE 16.1 Pilot																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation								Project (Number/Name) DY3 / NIE Test & Evaluation												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 16.1 Event					NIE 16.1 Event																							
NIE 16.1 Event Analysis & Summary					NIE 16.1 Event Analysis & Summary																							
NIE 16.2 Planning - Execution					NIE 16.2 Planning - Execution																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY3 / <i>NIE Test & Evaluation</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 DP 2	1	2014	1	2014
NIE 14.2 Lab Integration/Testing	1	2014	3	2014
NIE 14.2 Candidate Solution Integration	2	2014	2	2014
NIE 14.2 LoadEx	2	2014	3	2014
NIE 14.2 CommEx	3	2014	3	2014
NIE 14.2 Pilot	3	2014	3	2014
NIE 14.2 Event	3	2014	3	2014
NIE 14.2 Event Analysis & Summary	3	2014	3	2014
NIE 15.1 Planning - Execution	3	2013	1	2014
NIE 15.1 Industry Day	1	2014	1	2014
NIE 15.1 DP 1	2	2014	2	2014
NIE 15.1 DP 2	3	2014	3	2014
NIE 15.1 Lab Integration/Testing	3	2014	1	2015
NIE 15.1 Candidate Solution Integration	3	2014	4	2014
NIE 15.1 LoadEx	4	2014	4	2014
NIE 15.1 CommEx	4	2014	1	2015
NIE 15.1 Pilot	1	2015	1	2015
NIE 15.1 Event	1	2015	1	2015
NIE 15.1 Event Analysis & Summary	1	2015	1	2015
NIE 15.2 Planning - Execution	2	2014	3	2015
NIE 15.2 Industry Day	3	2014	3	2014
NIE 15.2 DP 1	4	2014	4	2014

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)

DY3 / *NIE Test & Evaluation*

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 15.2 DP 2	4	2014	4	2014
NIE 15.2 Lab Integration/Testing	1	2015	3	2015
NIE 15.2 Candidate Solution Integration	2	2015	2	2015
NIE 15.2 LoadEx	2	2015	3	2015
NIE 15.2 CommEx	3	2015	3	2015
NIE 15.2 Pilot	3	2015	3	2015
NIE 15.2 Event	3	2015	3	2015
NIE 15.2 Event Analysis & Summary	3	2015	3	2015
NIE 16.1 Planning - Execution	3	2014	1	2016
NIE 16.1 Industry Day	1	2015	1	2015
NIE 16.1 DP 1	2	2015	2	2015
NIE 16.1 DP 2	2	2015	2	2015
NIE 16.1 Lab Integration/Testing	3	2015	1	2016
NIE 16.1 Candidate Solution Integration	4	2015	4	2015
NIE 16.1 LoadEx	4	2015	4	2015
NIE 16.1 CommEx	4	2015	1	2016
NIE 16.1 Pilot	1	2016	1	2016
NIE 16.1 Event	1	2016	1	2016
NIE 16.1 Event Analysis & Summary	1	2016	1	2016
NIE 16.2 Planning - Execution	4	2015	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation				Project (Number/Name) DY4 / Network Integration Support			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DY4: Network Integration Support	-	10.614	20.408	14.131	-	14.131	15.824	13.860	13.882	14.033	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Phases I through IV of the Army's Agile process. Phase I solicits potential solutions from existing Army programs, tech base programs, and industry to deliver capabilities that achieve the Army's Network 2020 Endstates and Objectives and Forces 2025 beyond. It establishes initial objectives, solidifies the architecture baseline and will establish a viable candidate list for Network Integration Evaluation (NIE). During Phase II, the project supports the compilations of potential solutions that could meet the Army's Mission Command gaps and the US Army Training and Doctrine Command (TRADOC) identified gaps which supports the development of integration and testing concepts for the NIE. Phase III includes the coordinated efforts between System of Systems Integration (SOSE&I), Brigade Modernization Command (BMC) at Ft Bliss and the Army Test and Evaluation Command (ATEC) to finalize the brigade architecture "horseblanket", integration and test planning, training requirements and combat mission evaluations. Phase III also includes the initial integration phase where Systems Under Test (SUT) and government/industry System Under Evaluation (SUE) hardware and software are integrated and initially evaluated for follow-on consideration at Aberdeen Proving Ground's (APG) Communications Electronics Research, Development and Engineering Center (CERDEC) labs through the Lab Based Risk Reduction (LBRR) process. This project provides for Network Integration of all SUTs and SUEs (industry and/or government) Hardware/Software into existing CERDEC System Integration Laboratories at APG to risk reduce evaluation architectures, network configurations and identify integration issues prior to NIE. This effort continues into Phase IV as the network matures and becomes functional in the Lab. The results of this detailed lab based testing/evaluations will determine which SUTs and industry/government SUEs will continue in the NIE (Phases IV/V of the Army's Agile Network Integration process) and establishes the initial Network configuration that will be used in NIE. LBRR also reduces risk to NIE execution by testing the Network in the lab, resolving issues found in the Network lab test and optimizing the Networks performance. This is done in a lab environment that facilitates very efficient, cost effective determination of problems, and their subsequent corrections.

Additionally this project will integrate the Network at the CERDEC labs facilitate participation by small businesses and interfaces and integrate with Government Programs of Record with unique military secure interfaces and protocols. Purchase of any additional hardware and support above and beyond the proposed or available support if required for Lab Based Risk Reduction is also funded within this project. For Government SUEs, this project funds integration support at the CERDEC Labs. If the NIE program requires additional prototypes above and beyond the Program of Record for the Lab based Risk Reduction, it will also purchase this equipment. This project also funds keeping the Network baseline up to date so that integration is always into the current baseline network.

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

	FY 2014	FY 2015	FY 2016
Title: NIE Network Integration and Lab Based Risk Reduction	6.260	12.037	8.335
Description: These funds provide for the following: Network Integration of all industry and government SUEs, SUTs, and baseline Hardware/Software into existing CERDEC System Integration Laboratories at Aberdeen Proving Grounds (APG) to simulate the Brigade Network for NIE and determine if SUE's capabilities successfully resolve known gaps.			

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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY4 / <i>Network Integration Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p><i>FY 2014 Accomplishments:</i> The funding provided for the Lab Based Risk Reduction (LBRR) for NIE 14.2 and NIE 15.1 planned evaluation networks. In CERDEC labs, engineers created a representative NIE network architecture incorporating radios, satellite-based systems, handheld devices, mission command applications, routers, software, cables and other network components that were part of the field evaluation. Through a combination of actual and emulated hardware and software they modeled the NIE network to provide a test venue for industry and government organizations to integrate and assess Systems Under Test (SUT), Systems Under Evaluation (SUE), and Demonstrations in a controlled environment prior to full-scale operational field testing. Products delivered included test plans, test execution reports, lab & network configuration diagrams and product evaluation reports that covered areas such as system specifications verification, instrumentation plan verification, Network Integration Requirement Levels (NIRL), Measures of Performance (MOP), communications load plan verification, configuration management, field troubleshooting, recommended routing specifications, and technical performance.</p> <p><i>FY 2015 Plans:</i> The funding provides for the Lab Based Network Analysis and evaluations for NIE 15.2 and NIE 16.1 Brigade Network. In the CERDEC labs, engineers create a representative NIE network architecture incorporating radios, satellite-based systems, handheld devices, mission command applications, routers, software, cables and other network components. Through a combination of actual and emulated hardware and software they model the end-to-end NIE network, allowing industry and government organizations the ability to "plug" their systems into the NIE architecture for early assessment and integration risk mitigation. This effort plans and conducts detailed Network experiments. The lab activity validates the NIE network architecture products and network configurations using a Brigade-scale network consisting of a mixture of live and virtualized hardware and software. Products include; plans/execution/reports of the following: system level specification verification, instrumentation verification, pre-event analysis, Network Integration Requirements Levels, Measures of Performance, communication load plan, automated performance assessment of technical, configuration control, transport and software basis of issue, instrumentation plan, field troubleshooting and reach back support during event execution, routing design for NIE, and technical input to the reports to industry of system performance and issues.</p> <p><i>FY 2016 Plans:</i> The funding provides for the Lab Based Network Analysis and evaluations for NIE 16.2 and 17.1 Brigade Network. In the CERDEC labs, engineers create a representative NIE network architecture incorporating radios, satellite-based systems, handheld devices, mission command applications, routers, software, cables and other network components. Through a combination of actual and emulated hardware and software they model the end-to-end NIE network, allowing industry and government organizations the ability to "plug" their systems into the NIE architecture for early assessment and integration risk mitigation. This effort plans and conducts detailed Network assessments in support of the Army's 2020 and Force 2025 Network goals. The lab activity validates the NIE network architecture products and network configurations using a Brigade-scale network</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
consisting of a mixture of live and virtualized hardware and software. Products include; plans/execution/reports of the following: system level specification verification, instrumentation verification, pre-event analysis, Network Integration Requirements Levels, Measures of Performance, communication load plan, automated performance assessment of technical, configuration control, transport and software basis of issue, instrumentation plan, field troubleshooting and reach back support during event execution, routing design for NIE, and technical input to the reports to industry of system performance and issues.			
Title: NIE and LBRR Requirements Definition Support		2.984	5.737
Description: These funds provide for all government and contract personnel and equipment which work with TRADOC and Army G-3/5/7 to finalize the architecture, requirements, and horseblanket for each NIE.			
FY 2014 Accomplishments: This effort for NIE 14.2 and 15.1 included working with TRADOC and G-3/5/7 directorates and ASA(ALT) PEOs to finalize the operational gaps and to develop sources sought and Requests For Proposals (RFP)s to competitively select industry and government SUEs to resolve these gaps. This also included the development of Scopes of work, evaluation and down-selection criteria and then evaluation of any and all sources sought and RFP proposals to verify that the hardware/software performs to the requirement. This effort included management of the down-selections for each event, development and delivery of the final implementation horseblanket architecture and validation threads for each NIE. It also included all program, information, security, business, schedule, personnel management, network integration, evaluation, and reporting efforts required to support phases 1-3 of the NIE process. This effort also included the management and implementation of phase VI system recommendations across the ASA(ALT) PEO communities.			
FY 2015 Plans: This effort includes working with TRADOC and G-3/5/7 directorates and ASA(ALT) PEOs to finalize the operational gaps and then to develop sources sought to select industry and government SUEs to to meet NIE15.2 and NIE 16.1 objectives. This also includes the development of evaluation and down-selection criteria and then evaluation of any and all sources sought. This effort includes management of the down-selections for each event, development and delivery of the final implementation horseblanket architecture and design for each NIE. It also includes all program, information, security, business, schedule, personnel management, network integration, evaluation, and reporting efforts required to support phases 1-3 of the NIE process. This effort also includes the management and implementation of phase VI system recommendations across the ASA(ALT) PEO communities.			
FY 2016 Plans: This effort includes working with TRADOC and G-3/5/7 directorates and ASA(ALT) PEOs to finalize the operational gaps and develop either sources sought, or government technical call to select industry and government SUEs to participate in NIE 16.2 and NIE 17.1. This also includes the development, evaluation and down-select criteria and evaluation of sources			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation	Project (Number/Name) DY4 / Network Integration Support		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
sought, government technical calls proposals.. This effort includes management of the down-selections for each event, development and delivery of the final implementation horseblanket architecture and design for each NIE. It also includes all program information, security, business, schedule, personnel management, network integration, evaluation, and reporting efforts required to support phases I-III of the Agile process. This effort also includes the management and implementation of phase VI system recommendations across the ASA(ALT) PEO communities.				
Title: NIE SUE Hardware/Software for Lab & FSR Support for Network Integration		0.926	1.781	1.233
Description: The effort includes procurement of Hardware and Software required by the Lab to fully simulate the Brigade Network it includes the FSR Support from Contractors to fully integrate their systems into the Network.				
FY 2014 Accomplishments: Provided funding to support Network integration and evaluation at the CERDEC Lab at APG. This supported semi-annual Network Integration of industry and government technologies which were selected as Systems Under Evaluation (SUE) for participation into the Army's Network Integration Evaluations (NIE) 14.2 & 15.1. These funds covered the selected SUE's participation in the lab integration event and contractor travel cost, shipment of equipment and field service representatives to support Network integration activities, and the purchase of additional prototypes that were required for the CERDEC Lab.				
FY 2015 Plans: Provides funding to support Network integration and evaluation at the CERDEC Lab at APG. This supports semi-annual Network Integration of industry and government technologies which are being selected as Systems Under Evaluation (SUE) for participation into the Army's Network Integration Evaluations (NIE) 15.2 & 16.1. These funds cover the selected SUE's participation in the lab integration event. This includes contractor's costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) required to support Network integration activities, and the purchase of additional prototypes required for the CERDEC Lab when needed to effectively complete detailed evaluations of the complete brigade network architecture.				
FY 2016 Plans: Provides funding to support Network integration and evaluation at the CERDEC Lab at APG. This supports semi-annual Network Integration of industry and/or government technologies which are being selected as Systems Under Evaluation (SUE) for participation into the Army's Network Integration Evaluations (NIE) 16.2 & 17.1. These funds cover the selected SUE's participation in the lab integration event. This includes contractor's costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) required to support Network integration activities, and the purchase of additional prototypes required for the CERDEC Lab when needed to effectively complete detailed evaluations of the complete brigade network architecture.				
Title: Facilities and IT Support		0.444	0.853	0.590

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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Description: Provides funding for infrastructure/facilities and IT support. FY 2014 Accomplishments: FY 2014 Description: Provided funding for infrastructure/facilities. In addition it included the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff. FY 2015 Plans: Provides funding for infrastructure/facilities. In addition it includes the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff. FY 2016 Plans: Provides funding for infrastructure/facilities. In addition it includes the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff.												
Accomplishments/Planned Programs Subtotals										10.614	20.408	14.131
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• DY3: <i>DY3 NIE Test & Evaluation</i>	14.494	24.773	12.215	-	12.215	13.588	11.717	11.739	11.887	Continuing	Continuing	
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>	4.059	2.802	4.601	-	4.601	5.584	5.699	5.812	5.926	Continuing	Continuing	
• DY6: <i>DY6 Brigade and Platform Integration Support</i>	41.048	23.599	45.504	-	45.504	59.703	63.926	64.194	64.185	Continuing	Continuing	
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>	14.664	9.638	16.416	-	16.416	19.914	20.490	21.142	21.887	Continuing	Continuing	
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>	6.548	4.026	6.375	-	6.375	7.794	8.010	8.213	8.422	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
This project does not have any requirement for direct procurement of hardware or software.												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
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E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation				Project (Number/Name) DY4 / Network Integration Support					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NIE Network Integration and Lab Based Risk Reduction	TBD	Various Note: 1 : TBD	0.000	5.596	Nov 2013	12.038	Nov 2014	8.335	Nov 2015	-		8.335	-	25.969	-
Subtotal			0.000	5.596		12.038		8.335		-		8.335	-	25.969	-
Remarks															
Note:1															
- All funding executed from SoSE&I (Warren MI)															
- Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA), FT Bliss (TX), .															
- Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
NIE and LBRR Requirements Definition Support	TBD	Various Note: 1 : TBD	0.000	1.827	Nov 2013	5.737	Nov 2014	3.973	Nov 2015	-		3.973	-	11.537	-
NIE SUE Hardware/ Software for Lab & FSR Support for Network Integration	TBD	Various Note: 1 : TBD	0.000	2.698	Nov 2013	1.781	Nov 2014	1.233	Nov 2015	-		1.233	-	5.712	-
Facilities and IT Support	TBD	Various Note: 1 : TBD	0.000	0.493	Nov 2013	0.852	Nov 2014	0.590	Nov 2015	-		0.590	-	1.935	-
Subtotal			0.000	5.018		8.370		5.796		-		5.796	-	19.184	-
Remarks															
Note: 1															
- All funding executed from SoSE&I (Warren MI)															
- Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA)															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army											Date: February 2015				
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation					Project (Number/Name) DY4 / Network Integration Support					
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	10.614		20.408		14.131		-		14.131	-	45.153	-

Remarks

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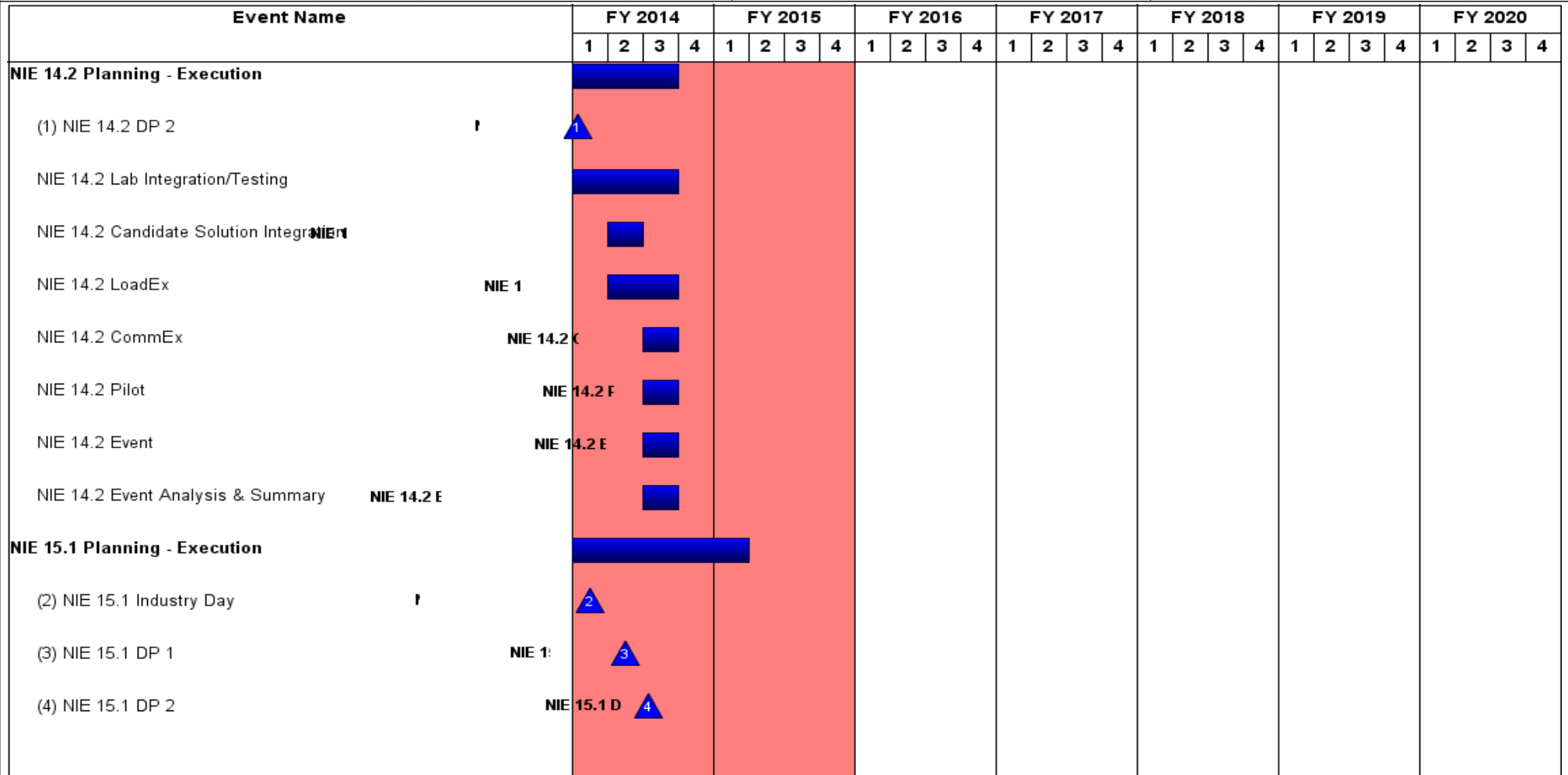
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

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PE 0604798A / *Brigade Analysis, Integration and Evaluation*

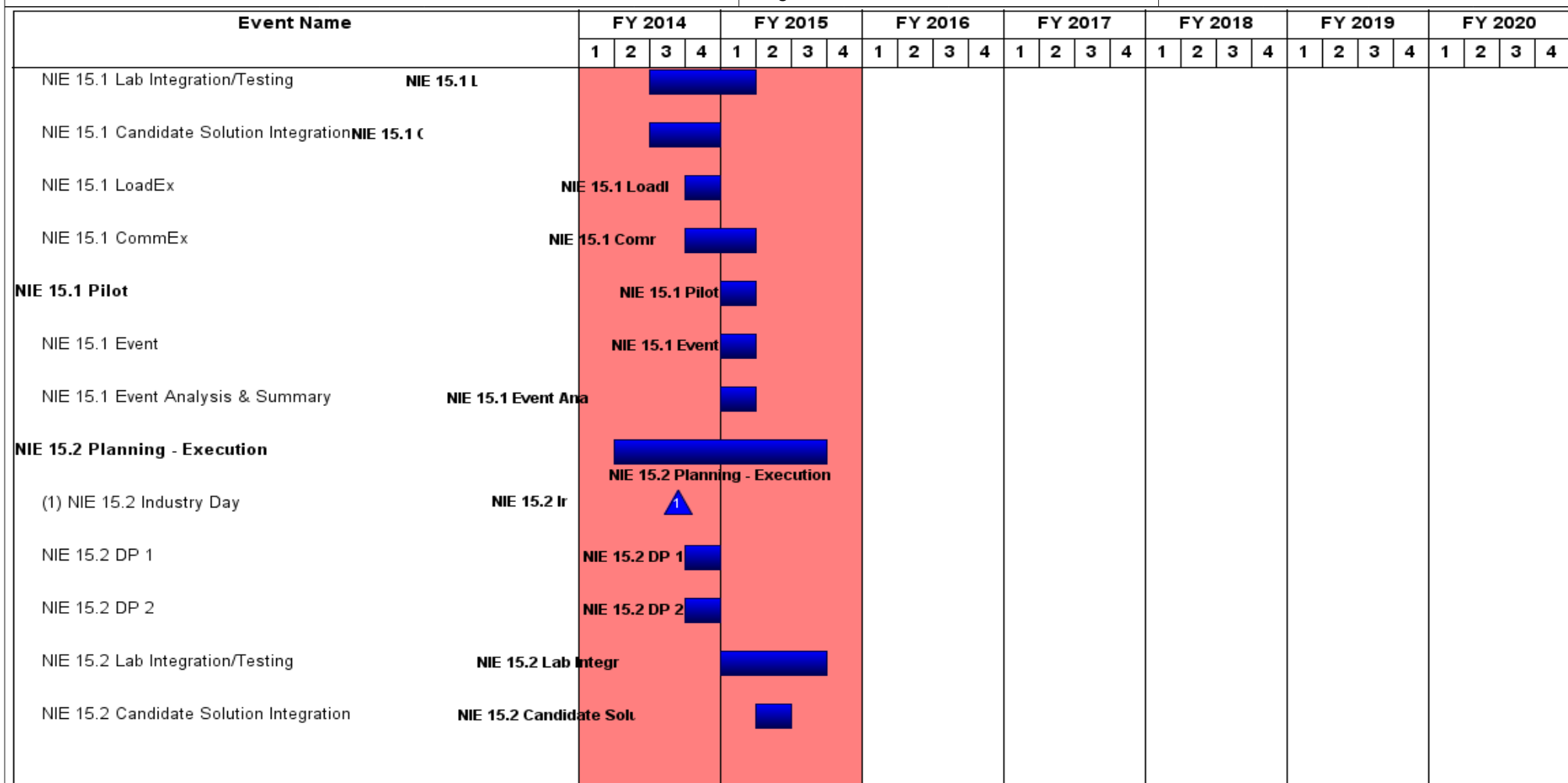
Project (Number/Name)
DY4 / *Network Integration Support*



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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																					
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation								Project (Number/Name) DY4 / Network Integration Support																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 15.2 LoadEx										NIE 15.2 LoadEx																											
NIE 15.2 CommEx										NIE 15.2 CommEx																											
NIE 15.2 Pilot										NIE 15.2 Pilot																											
NIE 15.2 Event										NIE 15.2 Event																											
NIE 15.2 Event Analysis & Summary										NIE 15.2 Event Analysis & Summary																											
NIE 16.1 Planning - Execution																																					
(1) NIE 16.1 Industry Day										NIE 16.1 Industry Day																											
(2) NIE 16.1 DP 1										NIE 16.1 DP 1																											
(3) NIE 16.1 DP 2										NIE 16.1 DP 2																											
NIE 16.1 Lab Integration/Testing										NIE 16.1 Lab Integration/Testing																											
NIE 16.1 Candidate Solution Integration										NIE 16.1 Candidate Solution Integration																											
NIE 16.1 LoadEx										NIE 16.1 LoadEx																											
NIE 16.1 CommEx										NIE 16.1 CommEx																											

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY4 / <i>Network Integration Support</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 16.1 Pilot																												
NIE 16.1 Event																												
NIE 16.1 Event Analysis & Summary																												
NIE 16.2 Planning - Execution																												
NIE 16.2 Industry Day																												
NIE 16.2 DP 1																												
NIE 16.2 DP 2																												
NIE 16.2 Lab Integration/Testing																												
NIE 16.2 Candidate Solution Integration																												
NIE 16.2 ValEx																												
NIE 16.2 CommEx																												
NIE 16.2 Pilot																												
NIE 16.2 Event																												

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

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R-1 Program Element (Number/Name)
PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)
DY4 / *Network Integration Support*

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 16.2 Event Analysis & Summary																												
NIE 17.1 Planning - Execution																												
NIE 17.1 Industry Day																												
NIE 17.1 DP 1																												
NIE 17.1 DP 2																												
NIE 17.1 Lab Integration/Testing																												
NIE 17.1 Candidate Solution Integration																												
NIE 17.1 ValEx																												
NIE 17.1 CommEx																												
NIE 17.1 Pilot																												
NIE 17.1 Event																												
NIE 17.1 Event Analysis & Summary																												

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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 Planning - Execution	2	2013	3	2014
NIE 14.2 DP 2	1	2014	1	2014
NIE 14.2 Lab Integration/Testing	1	2014	3	2014
NIE 14.2 Candidate Solution Integration	2	2014	2	2014
NIE 14.2 LoadEx	2	2014	3	2014
NIE 14.2 CommEx	3	2014	3	2014
NIE 14.2 Pilot	3	2014	3	2014
NIE 14.2 Event	3	2014	3	2014
NIE 14.2 Event Analysis & Summary	3	2014	3	2014
NIE 15.1 Planning - Execution	3	2013	1	2015
NIE 15.1 Industry Day	1	2014	1	2014
NIE 15.1 DP 1	2	2014	2	2014
NIE 15.1 DP 2	3	2014	3	2014
NIE 15.1 Lab Integration/Testing	3	2014	1	2015
NIE 15.1 Candidate Solution Integration	3	2014	4	2014
NIE 15.1 LoadEx	4	2014	4	2014
NIE 15.1 CommEx	4	2014	1	2015
NIE 15.1 Pilot	1	2015	1	2015
NIE 15.1 Event	1	2015	1	2015
NIE 15.1 Event Analysis & Summary	1	2015	1	2015
NIE 15.2 Planning - Execution	2	2014	3	2015
NIE 15.2 Industry Day	3	2014	3	2014

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R-1 Program Element (Number/Name)

PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)

DY4 / *Network Integration Support*

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 15.2 DP 1	4	2014	4	2014
NIE 15.2 DP 2	4	2014	4	2014
NIE 15.2 Lab Integration/Testing	1	2015	3	2015
NIE 15.2 Candidate Solution Integration	2	2015	2	2015
NIE 15.2 LoadEx	2	2015	3	2015
NIE 15.2 CommEx	3	2015	3	2015
NIE 15.2 Pilot	3	2015	3	2015
NIE 15.2 Event	3	2015	3	2015
NIE 15.2 Event Analysis & Summary	3	2015	3	2015
NIE 16.1 Planning - Execution	3	2014	1	2016
NIE 16.1 Industry Day	1	2015	1	2015
NIE 16.1 DP 1	2	2015	2	2015
NIE 16.1 DP 2	2	2015	2	2015
NIE 16.1 Lab Integration/Testing	3	2015	1	2016
NIE 16.1 Candidate Solution Integration	4	2015	4	2015
NIE 16.1 LoadEx	4	2015	4	2015
NIE 16.1 CommEx	4	2015	1	2016
NIE 16.1 Pilot	1	2016	1	2016
NIE 16.1 Event	1	2016	1	2016
NIE 16.1 Event Analysis & Summary	1	2016	1	2016
NIE 16.2 Planning - Execution	4	2015	3	2016
NIE 16.2 Industry Day	4	2014	4	2014
NIE 16.2 DP 1	4	2014	4	2014
NIE 16.2 DP 2	4	2015	4	2015
NIE 16.2 Lab Integration/Testing	1	2016	3	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
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	Start		End	
Events	Quarter	Year	Quarter	Year
NIE 16.2 Candidate Solution Integration	2	2016	2	2016
NIE 16.2 ValEx	2	2016	3	2016
NIE 16.2 CommEx	3	2016	3	2016
NIE 16.2 Pilot	3	2016	3	2016
NIE 16.2 Event	3	2016	3	2016
NIE 16.2 Event Analysis & Summary	3	2016	3	2016
NIE 17.1 Planning - Execution	1	2016	1	2017
NIE 17.1 Industry Day	1	2016	1	2016
NIE 17.1 DP 1	2	2016	2	2016
NIE 17.1 DP 2	2	2016	2	2016
NIE 17.1 Lab Integration/Testing	3	2016	1	2017
NIE 17.1 Candidate Solution Integration	4	2016	4	2016
NIE 17.1 ValEx	4	2016	4	2016
NIE 17.1 CommEx	1	2017	1	2017
NIE 17.1 Pilot	1	2017	1	2017
NIE 17.1 Event	1	2017	1	2017
NIE 17.1 Event Analysis & Summary	1	2017	1	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation				Project (Number/Name) DY5 / Production/Field Coordination for Capability Sets			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DY5: Production/Field Coordination for Capability Sets	-	4.059	2.802	4.601	-	4.601	5.584	5.699	5.812	5.926	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the development of a coordinated plan for the Production (Integrating components onto vehicle systems) and Fielding (logistics and training) of those Brigade components (both hardware/software in A and/or B Kits) and Division/Corps components (used primarily on the Command Post computing environment) that successfully passed the Network Integration Evaluation (NIE) and have been certified as interoperable for fielding through Army Interoperability Certification events and were approved by the Army's Leadership to be incorporated in subsequent Capability Sets (CS). This project request funds for the coordination of the required activity plan with the applicable Program of Records (PEOs/PMs). This project does not fund the actual production, integration, nor fielding costs associated with the Tactical Capability Set. This project includes government and contractor efforts to integrate and validate that the Army is fielding platforms, components and software that are integrated together to provide increased capabilities for the soldier that are supportable and trainable.

This project includes the following efforts: Provides oversight and direct coordination between participating PEOs, PMs, RDECOMs and the Army's Brigade Combat Teams (BCT) receiving the Tactical Capability Set package, throughout all phases of the Vehicle Integration and Synchronized Fielding process. This begins with an assembly of multiple programs of record (PORs) integrated into the Army Network to achieve enhanced network performance IAW the requirements validation, content and execution priorities received from the Army G-3/5/7 (DAMO LM). The Capability Set process development is structured by working with the PORs to define materiel systems Network / Basis of Issue (NBOI)/ Architecture by type of Brigade Combat Team (BCT). Capability Set products that have been Materiel Released/ Type Classified, have production funding and production are aligned by a single Integrated Master Schedule for design integration, testing, production, kitting, platform integration, training and fielding. This project also includes the direct support during each of the unit's "New Equipment Training" and "New Equipment Fielding", along with the preparation for the BCT's rotation through one of the Army's Combat Training Centers, (Joint Readiness Training Center (JRTC) or National Training Center (NTC). Upon completion of the Combat Training Center (CTC) rotation the support teams provide oversight to ensure that all training assets are reset and moved to the follow-on BCT and that all After Action activities are closed out. This project also includes coordination with DA staff for synchronization of NIE with Integration and Interoperability events leading to Army Interoperability Certification and coordinating mission command Army Interoperability Certification (AIC) baseline to support fielding.

The FY 2016 funding is supporting the CS fielding in CY 2016 and also conducting the planning for CS 17. During FY 2016 the Army's current plan is to conduct seven (7) Tactical Capability Set-Sync Fieldings (CS-SF) and two (2) Division Headquarters utilizing five CS-SF teams.

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

	FY 2014	FY 2015	FY 2016
Title: Production/Fielding Coordination for Capability Sets	3.787	2.614	4.292

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Description: These funds provide for the following: Development, coordination and execution of the CS Fielding Plan to take the results of previous NIEs and produce, integrate, and field these Brigade improvements to the BCTs. This effort does not fund the production, or integration, or fielding of the capability set, but it does fund the coordination of this activity for the Army through the supporting Program Managers (PMs), Program Executive Officers (PEOs), and Research, Development, Engineering Command (RDECOMs).</p> <p>FY 2014 Accomplishments: Synchronized and fielded integrated Capability Sets in to six IBCTs, (two at FT Bragg, NC; one at FT Campbell, KY; two at FT Drum, NY; and one at FT Bliss, TX); two SBCTs, (one at JBLM, WA and one at FT Bliss, TX); and two Division Headquarters, (One at FT Bragg, NC, one at FT Bliss TX). Coordinated fielding integration of Program of Record assets in accordance with the defined BCT Reference architecture consisting of multiple systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations, and integrated into multiple gaining Army Units. Synchronized and managed New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS-14 to all gaining units. Completed NET by platforms, by role, by echelon, and by BCT. Began CS-15 NET/NEF requirements definition finalization and development of the NET/NEF integrated master schedule. This included logically scheduling Program of Record unique NET, System of Systems NET (Capability Set holistic classes), and property accountability handoffs as an integrated process which enhanced efficiency of the brigade modernization events. Provided integrated system identification documents to the gaining unit for ease of property transfer in PBUSE updates. Provided integrated management of facilities across all fielding activities to efficiently manage facilities requirements linked to the Integrated Master Schedule for all PMs with garrison support activities. Coordinated standard transfer processes for all PMs which reduced the complexity and administrative burden on the gaining units. Synchronized fielding planning which included synchronized production deliveries, NET, fielding and support (with sponsoring PMs) and all BCTs were executed within the specified ARFORGEN window. Coordinated funding requirements and delivery/production schedules which resulted in all production schedules being able to field selected systems. Completed funding coordination with DA and prioritized requirements at Weapons Systems Reviews (WSR) to support the POM. Aligned funding requirements for PMs to make updates to their PORs as a result of integrating concepts that affect engineering architecture data products, training packages, logistics packages, etc. Coordinated New Equipment Training (NET) and New Equipment Fielding (NEF) for all CS-14 components/products across all receiving Units with minimum disruption to their mission.</p> <p>FY 2015 Plans: Synchronize, integrate and coordinate Capability Set Fielding for CS-16 and detailed planning for CS-17 and high level planning for CS18/19.</p> <ul style="list-style-type: none"> • Synchronized integration of BCT Reference architectures consisting of multiple network systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations; • Integrate designs by platform, by role, by echelon, and by BCT for CS16 including LTI. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> • Begin to finalize CS-16 requirements and develop and coordinate the Integrated Master Schedule (IMS) for CS-16; • Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs for CS16. • Coordinate and deliver prototype and production builds for CS16 • Configuration Management (CM) of Platform Architectural implementations, designs, A-Kits, B-Kits, and the IMS for CS16. • Coordinate fielding integration of Program of Record assets in accordance with the defined BCT Reference architecture consisting of multiple systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at several different locations, integrated into multiple gaining Army Units. • Coordinate a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS-16 to all gaining units. • Complete NET by platforms, by role, by echelon, and by BCT. • Begin CS-17 NET/NEF requirements definition finalization and development of the NET/NEF integrated master schedule. This includes logically scheduling Program of Record unique NET, System of Systems NET (Capability Set holistic classes), and property accountability handoffs as an integrated process to enhance efficiency of the brigade modernization events. • Provides integrated system identification documents to the gaining unit for ease of property transfer in PBUSE. • Provides integrated management of facilities across all fielding activities to efficiently manage facilities requirements linked to the Integrated Master Schedule for all PMs with garrison support activities. • Coordinate standard transfer processes for all PMs to reduce the complexity and administrative burden on the gaining units. • Synchronize fielding planning to include synchronized production deliveries, NET, fielding and support (with sponsoring PMs) to execute within the specified ARFORGEN windows. • Synchronizes, integrates and coordinates execution of Lower Tactical Internet (LTI) on 700+ platforms for each of four (4) BCTs. Coordinates the set up and execution of the 3ea production lines for each LTI installation including coordination of the unit for platforms to maintain efficient through put of systems. • Coordinate funding requirements and delivery/production schedules to ensure production schedules are met to field selected systems. • Complete funding coordination with DA and prioritized requirements at Weapons Systems Reviews (WSR) to support the POM. • Align funding requirements for PMs to make updates to their PORs as a result of integrating concepts that affect engineering architecture data products, training packages, logistics packages, etc. <p>FY 2016 Plans: Synchronize, integrate and coordinate Tactical Capability Set Fielding for CS-16 and detailed planning for CS-17 and high level planning for CS18/19.</p> <ul style="list-style-type: none"> • Synchronized integration of BCT Reference architectures consisting of multiple network systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations; 					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> • Integrate designs by platform, by role, by echelon, and by BCT for CS16 including LTI. • Begin to finalize CS-16 requirements and develop and coordinate the Integrated Master Schedule (IMS) for CS-16; • Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs for CS16. • Coordinate and deliver prototype and production builds for CS16 • Configuration Management (CM) of Platform Architectural implementations, designs, A-Kits, B-Kits, and the IMS for CS16. • Coordinate fielding integration of Program of Record assets in accordance with the defined BCT Reference architecture consisting of multiple systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at several different locations, integrated into multiple gaining Army Units. • Coordinate a synchronized New Equipment Training /New Equipment Fielding (NET/NEF) Integrated Master Schedule (IMS) for fielding of CS-16 to all gaining units. • Complete NET by platforms, by role, by echelon, and by BCT. • Begin CS-17 NET/NEF requirements definition finalization and development of the NET/NEF integrated master schedule. This includes logically scheduling Program of Record unique NET, System of Systems NET (Capability Set holistic classes), and property accountability handoffs as an integrated process to enhance efficiency of the brigade modernization events. • Provides integrated system identification documents to the gaining unit for ease of property transfer in PBUSE. • Provides integrated management of facilities across all fielding activities to efficiently manage facilities requirements linked to the Integrated Master Schedule for all PMs with garrison support activities. • Coordinate standard transfer processes for all PMs to reduce the complexity and administrative burden on the gaining units. • Synchronize fielding planning to include synchronized production deliveries, NET, fielding and support (with sponsoring PMs) to execute within the specified ARFORGEN windows. • Synchronizes, integrates and coordinates execution of Lower Tactical Internet (LTI) on 700+ platforms for each of four (4) BCTs. Coordinates the set up and execution of the 3ea production lines for each LTI installation including coordination of the unit for platforms to maintain efficient through put of systems. • Coordinate funding requirements and delivery/production schedules to ensure production schedules are met to field selected systems. • Complete funding coordination with DA and prioritized requirements at Weapons Systems Reviews (WSR) to support the POM. • Align funding requirements for PMs to make updates to their PORs as a result of integrating concepts that affect engineering architecture data products, training packages, logistics packages, etc. 					
Title: Facilities and IT Support Description: Provides funding for infrastructure/facilities and IT support. FY 2014 Accomplishments:			0.272	0.188	0.309

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
<p>Provided funding for infrastructure/facilities. In addition it included the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff.</p> <p>FY 2015 Plans: Provides funding for infrastructure/facilities. In addition it includes the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff.</p> <p>FY 2016 Plans: Provides funding for infrastructure/facilities. In addition it includes the cost for IT support from Network connectivity for purchasing/leasing hardware, software, computers, communications equipment and services for the government staff.</p>											
Accomplishments/Planned Programs Subtotals								4.059	2.802	4.601	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• DY3: <i>DY3 NIE Test & Evaluation</i>	14.494	24.773	12.215	-	12.215	13.588	11.717	11.739	11.887	Continuing	Continuing
• DY4: <i>DY4 Network Integration Support</i>	10.614	20.408	14.131	-	14.131	15.824	13.860	13.882	14.033	Continuing	Continuing
• DY6: <i>DY6 Brigade and Platform Integration Support</i>	41.048	23.599	45.504	-	45.504	59.703	63.926	64.194	64.185	Continuing	Continuing
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>	14.664	9.638	16.416	-	16.416	19.914	20.490	21.142	21.887	Continuing	Continuing
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>	6.548	4.026	6.375	-	6.375	7.794	8.010	8.213	8.422	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
This project does not have any requirement for direct procurement of hardware or software.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>					

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Production/Fielding Coordination for Capability Sets	TBD	Various Note: 1 : TBD	0.000	3.787	Nov 2013	2.614	Nov 2014	4.292	Nov 2015	-		4.292	-	10.693	-
Subtotal			0.000	3.787		2.614		4.292		-		4.292	-	10.693	-

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at, TACOM (Warren MI).
 - Program Integration support through various PMs, PEOs, RDECOM.

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Facilities and IT Support	TBD	Various Note:1 : TBD	0.000	0.272	Nov 2013	0.188	Nov 2014	0.309	Nov 2015	-		0.309	-	0.769	-
Subtotal			0.000	0.272		0.188		0.309		-		0.309	-	0.769	-

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at, TACOM (Warren MI).

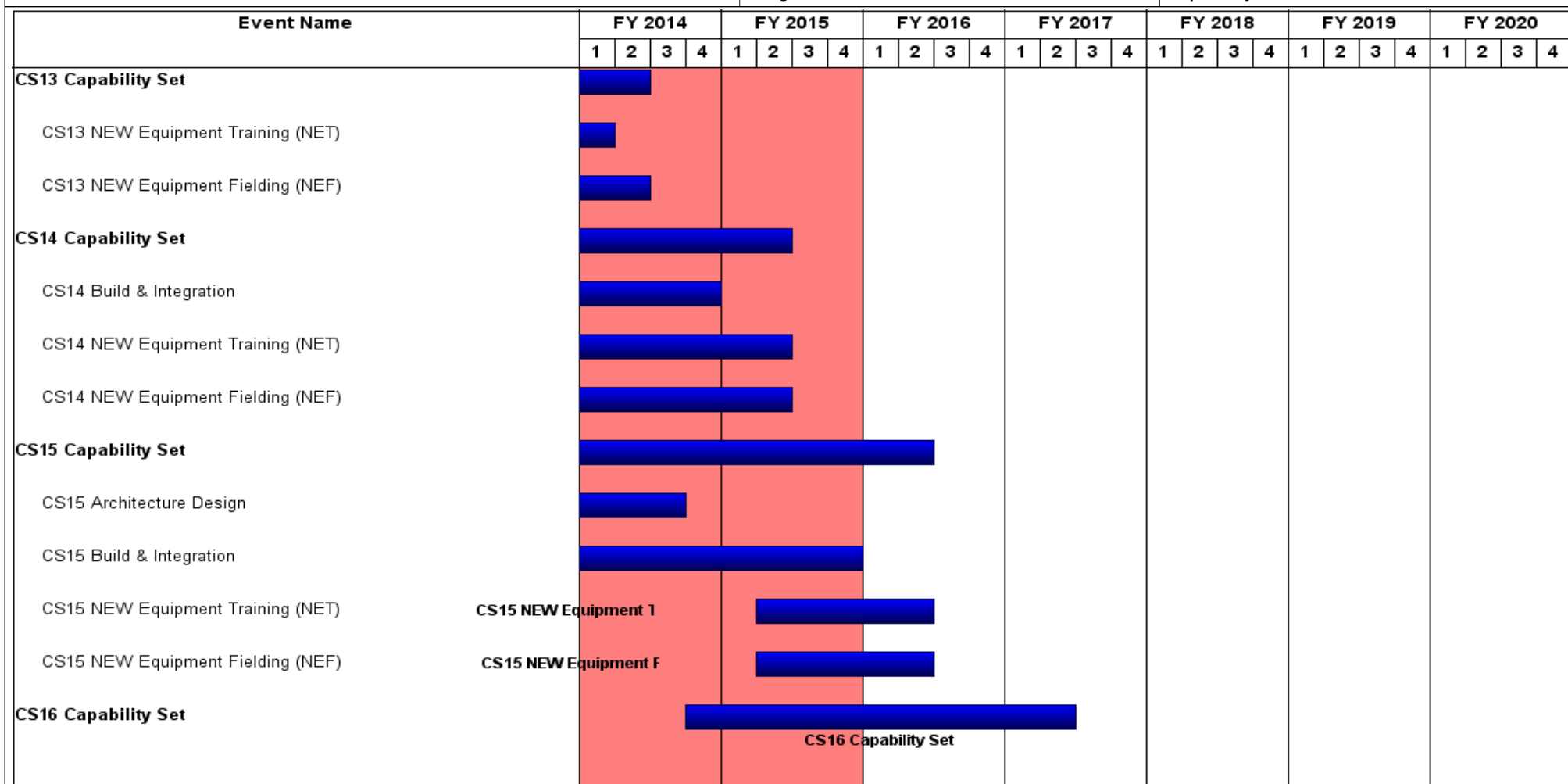
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	4.059	2.802	4.601	-	4.601	-	11.462	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>
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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)
DY5 / *Production/Field Coordination for Capability Sets*

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CS16 Architecture Design																												
CS16 Build & Integration																												
CS16 NEW Equipment Training (NET)																												
CS16 NEW Equipment Fielding (NEF)																												
CS17 Capability Set																												
CS17 Architecture Design																												
CS17 Build & Integration																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY5 / <i>Production/Field Coordination for Capability Sets</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CS13 Capability Set	2	2012	2	2014
CS13 NEW Equipment Training (NET)	1	2013	1	2014
CS13 NEW Equipment Fielding (NEF)	2	2013	2	2014
CS14 Capability Set	2	2012	2	2015
CS14 Build & Integration	3	2012	4	2014
CS14 NEW Equipment Training (NET)	1	2014	2	2015
CS14 NEW Equipment Fielding (NEF)	1	2014	2	2015
CS15 Capability Set	3	2013	2	2016
CS15 Architecture Design	3	2013	3	2014
CS15 Build & Integration	4	2013	4	2015
CS15 NEW Equipment Training (NET)	2	2015	2	2016
CS15 NEW Equipment Fielding (NEF)	2	2015	2	2016
CS16 Capability Set	4	2014	2	2017
CS16 Architecture Design	4	2014	2	2015
CS16 Build & Integration	1	2015	4	2016
CS16 NEW Equipment Training (NET)	2	2016	1	2017
CS16 NEW Equipment Fielding (NEF)	3	2016	2	2017
CS17 Capability Set	2	2015	2	2018
CS17 Architecture Design	2	2015	3	2016
CS17 Build & Integration	3	2015	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DY6: <i>Brigade and Platform Integration Support</i>	-	41.048	23.599	45.504	-	45.504	59.703	63.926	64.194	64.185	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Phase IV through Phase VI of the Army's Agile Acquisition Process and provides management and oversight for the coordinated Army effort to deliver and maintain Mission Command Baselines as interoperable System of Systems (SoS) capabilities through the synchronization, coordination and facilitation of system deliveries to interoperability certification events.

Based on developed baseline Brigade level architectures, SoS Engineering & Integration (SoSE&I) will assess against approved Department of the Army (DA) objectives and baseline Brigade Combat Team (BCT) architectures to plan for and integrate approved network hardware and software systems onto the Soldier and vehicle systems that comprise the integrated BCT network. Work encompasses design and engineering of hardware and cable interfaces (e.g., A-kits) that enable integration of network hardware onto vehicle platforms; development of network data products required to support evaluations of the network; verification of integrated BCT network performance in garrison and field environments; field support to network hardware and software systems that deploy to the field and participate in operational evaluations conducted throughout the BCT battlespace; and, following the operational evaluation, restoration of selected platforms to their baseline configurations. This project includes government and contractor efforts to validate that the Army is properly integrating and fielding trainable, maintainable, interoperable, and sustainable network systems and components that will provide increased warfighting capabilities for the Soldier. This project includes:

- Integration of lab-developed network solutions onto Soldier and vehicle systems;
- Design, and fabrication of mounting brackets, cables, and kits required to enable vehicle platforms to employ new network hardware and software systems;
- Installation and checkout of network hardware and software systems prior to turning the equipment over to the soldiers who will employ these systems during the Network Integration Evaluation (NIE);
- Funding for Field Service Representative (FSR) support for selected Systems Under Evaluation (SUEs) participating in Phase V of the Army's Agile Process;
- Validation of critical operational threads that demonstrate the stability and continuity of the tactical network exercised during the NIE;
- Planning, coordination, and execution of hardware and software system support during the operational phase of the NIE;
- De-modification of vehicles at completion of the event;
- Documentation of interface kits, performance trends, and Integrated Logistics Support (ILS) data to facilitate hand-off of high-payoff systems to designated Programs of Record (POR);
- Feedback to industry on the performance of their technologies, systems, and concept relative to known operational gaps;
- Maintenance of the infrastructure needed by SOSI to support NIE operations at Ft Bliss, TX and White Sands Missile Range, NM.
- System of Systems (SoS) and specialty engineering support needed to build upon NIE-provided documentation and execute design integration, production planning and testing of Tactical Capability Sets (TCSs) which consolidate high-payoff capabilities in integrated fielding packages; and,
- Planning, management, and execution of TCS design requirements to synchronize manufacturing development, production, and synchronized fielding to designated BCTs.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: Platform Integration Support			15.271	8.780	16.929
Description: These funds provide for integration of network solutions onto Soldier and vehicle systems to enable an integrated network across the brigade battlespace.					
FY 2014 Accomplishments: This effort supported all activities associated with vehicle and platform integration for NIE 14.2 and NIE 15.1. The work began with the selection of network hardware and software systems at Decision Point (DP) 2 of the Army's Agile Process and the execution of NIE 14.2 and 15.1 activities to support CS-15 and CS-16 requirements; and the development of the implementation architecture for CS-15. Funds provided the following: - Vehicle Integration (VI) planning and scheduling, - - Golden vehicle design; - Vehicle Integration execution; - Network validation; - Field support; - Recovery from NIE field operations; SoSE&I worked with its User counterparts to finalize the BCT architecture that executed NIE 14.2 and NIE 15.1, and then it: - Developed Basis of Issue Plans (BOIPs) for each participating network hardware and software system; Developed engineering designs for complete hardware kits (e.g., the brackets, mounting trays, cables, and other components that comprise an "A-Kit") needed to integrate each unique network hardware system onto each type of host platform that participated in the NIE; Fabricated unique hardware components needed to support vehicle integration efforts; Integrated and verified the performance of each unique platform network configuration; Supported installation and integration of instrumentation kits needed to collect data from designated network systems and verified that the instrumentation did not impact the performance of the network system; Supported the conduct of safety certification and release efforts for each unique vehicle configuration; Performed SoS checkouts to ensure all SoSE&I-installed network hardware and software systems operated with each other, legacy systems, and other POR systems participating in the NIE; Provided troubleshooting support for network validation exercises and selected network systems during the operational phase of the NIE; Coordinated with Test and User agencies to develop de-installation and de-modification plans to remove selected equipment (e.g., hardware and/or instrumentation that would not be used in future NIEs; systems directed to be returned to system owners; and systems that Users determined would be installed on other formations in future NIEs) from BCT platforms;					

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Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p>Executed the de-installation of selected systems following each NIE;</p> <p>Completed documentation and transfer of interface designs, training support requirements, performance trends, ILS requirements, and lessons learned to CS systems engineering teams;</p> <ul style="list-style-type: none"> - CS-15 planning, and design analysis; - Documentation and handoff of critical information to support implementation of CS-15 efforts; - Developed and derived CS14 Implementation Architecture; <p>Provided Systems Engineering (SE) to mature the network interface designs developed during the NIE and enable expedited CS fielding;</p> <p>Synchronized integration of a BCT Reference architecture consisting of multiple network systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations;</p> <p>Coordinated a synchronized Integrated Master Schedule (IMS) for fielding of CS-14 to all gaining units.</p> <p>Integrated designs by platform, by role, by echelon, and by BCT.</p> <p>Began to finalize CS-15 requirements;</p> <p>Coordinated A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs.</p> <p>Coordinated and delivered prototype and production builds</p> <p>Completed configuration Management (CM) of Platform Architectural implementations, designs, A-Kits, and B-Kits.</p> <p>Conducted Systems Engineering (SE) to include: design maturation, decomposition of reference architecture into platform specific implementations network architecture, prototype/production build, integrated testing, configuration of integrated baseline and an integrated schedule for component management.</p> <p>FY 2015 Plans:</p> <p>This effort supports all activities associated with vehicle and platform integration. The work begins with the selection of network hardware and software systems at Decision Point (DP) 2 of the Army's Agile Process and includes execution of CS-14 synchronized fielding; execution of NIE 15.2 and 16.1 activities that support future (CS-16 and CS-17) requirements; and detailed planning for CS-16 activities.</p> <ul style="list-style-type: none"> • Coordination and planning of hardware and software system deliveries to SOSI activities at Fort Bliss, TX; • Vehicle Integration (VI) planning and scheduling; • VI execution; • Network validation; • Field support; • Recovery from NIE field operations; • Develop and deliver CS-15 Implementation Architecture; • Documentation and handoff of critical information to support implementation of CS-15 efforts; 					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> • CS-16 planning and design analysis; • Synchronized fielding of CS-15 systems. <p>Vehicle integration: Leveraging the work performed during FY2014 and using brigade architectures that represent an evolving network modernization strategy:</p> <ul style="list-style-type: none"> • Develop Basis of Issue Plans (BOIPs) for each participating network hardware and software system; • Identify the type (or types) of vehicle platforms that will host each network system; • Identify and document vehicle size, weight, power, and electromagnetic constraints • Given vehicle size, weight, power, and electromagnetic constraints, develop engineering designs for the complete hardware kits (e.g., the brackets, mounting trays, cables, and other components that comprise an "A-Kit") needed to integrate each unique network hardware system onto each type of host platform that will participate in the NIE; • Fabricate unique hardware components needed to support vehicle integration efforts; • Integrate and verify the performance of each unique network system (e.g., B-kit) on its host vehicle - as specified by the BOIP; • Support installation and integration of instrumentation kits needed to collect data from designated network systems and verify that the instrumentation does not impact the performance of the network system; • Support the conduct of safety certification and release efforts for each unique vehicle configuration; • Perform SoS checkouts to ensure all SOSI-installed network hardware and software systems operate with each other, legacy systems, and other POR systems participating in the NIE; • Provide troubleshooting support for network validation exercises and selected network systems during the operational phase of the NIE; • De-installation of selected systems following each NIE; • Documentation and transfer of interface designs, training support requirements, performance trends, ILS requirements, and lessons learned to CS systems engineering teams; • Systems Engineering (SE) to mature the network interface designs developed during the NIE and enable expedited CS fielding; • Synchronized integration of a BCT Reference architecture consisting of multiple network systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations; • Coordinate a synchronized Integrated Master Schedule (IMS) for fielding of CS-14 to all gaining units. • Integrate designs by platform, by role, by echelon, and by BCT. • Begin to finalize CS-16 requirements and develop and IMS for CS-16; • Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs. • Coordinate and deliver prototype and production builds • Configuration Management (CM) of Platform Architectural implementations, designs, A-Kits, B-Kits, and the IMS. 					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> • Systems Engineering (SE) to include: design maturation, decomposition of reference architecture into platform specific implementations network architecture, prototype/production build, integrated testing, configuration of integrated baseline and an integrated schedule for component management • Synchronize acquisition strategy and planning to include: synchronized production deliveries, fielding and support (with sponsoring PMS) to maintain the ARFORGEN Cycle. <p>FY 2016 Plans: This effort supports all activities associated with vehicle and platform integration. The work begins with the selection of network hardware and software systems at Decision Point (DP) 2 of the Army's Agile Process and includes execution of CS-14 synchronized fielding; execution of NIE 15.2 and 16.1 activities that support future (CS-16 and CS-17) requirements; and implementation architecture for CS-16 activities.</p> <ul style="list-style-type: none"> • Coordination and planning of hardware and software system deliveries to SoSE&I activities at Fort Bliss, TX; • Vehicle Integration (VI) planning and scheduling; • VI execution; • Network validation; • Field support; • Recovery from NIE field operations; • Develop and deliver CS-15 Implementation Architecture; • Documentation and handoff of critical information to support implementation of CS-15 efforts; • CS-16 planning and design analysis; • Synchronized fielding of CS-15 systems. <p>Vehicle integration: Leveraging the work performed during FY2014 and using brigade architectures that represent an evolving network modernization strategy:</p> <ul style="list-style-type: none"> • Develop Basis of Issue Plans (BOIPs) for each participating network hardware and software system; • Identify the type (or types) of vehicle platforms that will host each network system; • Identify and document vehicle size, weight, power, and electromagnetic constraints • Given vehicle size, weight, power, and electromagnetic constraints, develop engineering designs for the complete hardware kits (e.g., the brackets, mounting trays, cables, and other components that comprise an "A-Kit") needed to integrate each unique network hardware system onto each type of host platform that will participate in the NIE; • Fabricate unique hardware components needed to support vehicle integration efforts; • Integrate and verify the performance of each unique network system (e.g., B-kit) on its host vehicle - as specified by the BOIP; • Support installation and integration of instrumentation kits needed to collect data from designated network systems and verify that the instrumentation does not impact the performance of the network system; • Support the conduct of safety certification and release efforts for each unique vehicle configuration; 					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> • Perform SoS checkouts to ensure all SoSE&I-installed network hardware and software systems operate with each other, legacy systems, and other POR systems participating in the NIE; • Provide troubleshooting support for network validation exercises and selected network systems during the operational phase of the NIE; • De-installation of selected systems following each NIE; • Documentation and transfer of interface designs, training support requirements, performance trends, ILS requirements, and lessons learned to CS systems engineering teams; • Systems Engineering (SE) to mature the network interface designs developed during the NIE and enable expedited CS fielding; • Synchronized integration of a BCT Reference architecture consisting of multiple network systems, on multiple configurations of STRYKER, MRAPS, HMMWV and Heavy Armor vehicle platforms, at multiple locations; • Coordinate a synchronized Integrated Master Schedule (IMS) for fielding of CS-14 to all gaining units. • Integrate designs by platform, by role, by echelon, and by BCT. • Begin to finalize CS-16 requirements and develop and IMS for CS-16; • Coordinate A-Kit design, development and production and B-Kit's Integration Kit (IK) design, between system and platforms PEOs and PMs. • Coordinate and deliver prototype and production builds • Configuration Management (CM) of Platform Architectural implementations, designs, A-Kits, B-Kits, and the IMS. • Systems Engineering (SE) to include: design maturation, decomposition of reference architecture into platform specific implementations network architecture, prototype/production build, integrated testing, configuration of integrated baseline and an integrated schedule for component management • Synchronize acquisition strategy and planning to include: synchronized production deliveries, fielding and support (with sponsoring PMs) to maintain the ARFORGEN Cycle. 					
Title: Brigade Integration Support Description: These funds provide for the testing and verification of network components integrated with the BCT's vehicle and soldier systems that participate in NIEs. FY 2014 Accomplishments: Brigade Integration: Once VI was completed for NIE 14.2 and 15.1, SoSE&I conducted a Network Validation Exercise (VALEX) to demonstrate network stability, connectivity, and performance in controlled conditions. VALEX consists of four phases: Load, Established, Integrate and Validate Threads. During the Load phase, network systems and SoS engineers installed network software, firmware, and Operating Systems (OSs), set Internal Protocol (IP) addresses and configured all network systems on all NIE-unique platforms (Note: Program of Record (POR) and Legacy engineers and FSRs performed the same tasks on their platforms that participated in an NIE; PORs are NOT			11.136	6.402	12.345

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p>funded by SoSE&I to perform these functions). Once all software and data products were loaded, SoSE&I and supporting network engineers and FSRs performed test/fix/test processes at the network system and component level.</p> <p>During the Establish phase, SoSE&I engineers and FSRs worked with Legacy and POR network support personnel to verify network hardware and software performance at the platform level. This work troubleshoots any issues associated with network system configurations and ensures that each NIE platform has the ability to perform in a role within the tactical network.</p> <p>In the Integrate phase, this project enabled SoSE&I engineers and FSRs work with Legacy and POR network personnel to verify network hardware and software performance at the SoS platform level – from the small unit (e.g., company, troop, or battery) up to the brigade. This work troubleshoots any issues associated with network SoS configurations and ensures that each networked tactical units interact with each other as expected. Activities during the Integrate Phase included training of the Soldiers who will be using the new BCT network during the NIE</p> <p>The Validate phase executed operational threads designed to demonstrate the BCT network's ability to provide specific capabilities to the BCT commander.</p> <p>Throughout VALEX planning and execution, SoSE&I coordinated with the Army Test and Evaluation Command (ATEC) and Brigade Modernization Command (BMC) which ensured that network instrumentation, training, and operational requirements were coordinated.</p> <p>FY 2015 Plans:</p> <p>Integration: Once VI for NIE 15.2 and 16.1 is complete, SoSE&I conducts a Network Validation Exercise (VALEX) to demonstrate network stability, connectivity, and performance in controlled conditions. VALEX consists of four phases: Load, Established, Integrate and Validate Threads.</p> <ul style="list-style-type: none"> • During the Load phase, network systems and SoSE&I engineers install network software, firmware, and Operating Systems (OSs), set Internal Protocol (IP) addresses and configure all network systems on all NIE-unique platforms (Note: Program of Record (POR) and Legacy engineers and FSRs perform the same tasks on any of their platforms that will participate in an NIE; PORs are NOT funded by SoSE&I to perform these functions). Once all software and data products are loaded, SoSE&I and supporting network engineers and FSRs perform test/fix/test processes at the network system and component level. • During the Establish phase, this effort resources SoSE&I engineers and FSRs to work with Legacy and POR network support personnel to verify network hardware and software performance at the platform level. This work troubleshoots any issues associated with network system configurations and ensures that each NIE platform has the ability to perform its role within the tactical network. • In the Integrate phase, this project enables SoSE&I engineers and FSRs to work with Legacy and POR network personnel to verify network hardware and software performance at the SoS platform level – from the small unit (e.g., company, troop, or battery) up to the brigade. This work troubleshoots any issues associated with network SoS configurations and ensures that each networked tactical units interact with each other as expected. Activities during the Integrate Phase include training of the Soldiers who will be using the new BCT network during the NIE 					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> The Validate phase executes operational threads designed to demonstrate the BCT network's ability to provide specific capabilities to the BCT commander. Throughout VALEX planning and execution, SoSE&I coordinates with the Army Test and Evaluation Command (ATEC) and Brigade Modernization Command (BMC) to ensure network instrumentation, training, and operational requirements are coordinated. <p>FY 2016 Plans:</p> <p>Brigade Integration: Once Vehicle Integration (VI) for NIE 16.2 and 17.1 is complete; SOSE&I will conduct a Network Validation Exercise (VALEX) to demonstrate network stability, connectivity, and performance in controlled conditions. VALEX consists of four phases: Load, Established, Integrate and Validate Threads.</p> <ul style="list-style-type: none"> During the Load phase, network systems and SoS engineers install network software, firmware, and Operating Systems (OSs), set Internal Protocol (IP) addresses and configure all network systems on all NIE-unique platforms (Note: Program of Record (POR) and Legacy engineers and FSRs perform the same tasks on any of their platforms that will participate in an NIE; PORs are NOT funded by SOSE&I to perform these functions). Once all software and data products are loaded, SOSE&I and supporting network engineers and FSRs perform test/fix/test processes at the network system and component level. During the Establish phase, this effort resources SOSE&I engineers and FSRs to work with Legacy and POR network support personnel to verify network hardware and software performance at the platform level. This work troubleshoots any issues associated with network system configurations and ensures that each NIE platform has the ability to perform its role within the tactical network. In the Integrate phase, this project enables SOSE&I engineers and FSRs to work with Legacy and POR network personnel to verify network hardware and software performance at the SoS platform level – from the small unit (e.g., company, troop, or battery) up to the brigade. This work troubleshoots any issues associated with network SoS configurations and ensures that each networked tactical units interact with each other as expected. Activities during the Integrate Phase include training of the Soldiers who will be using the new BCT network during the NIE The Validate phase executes operational threads designed to demonstrate the BCT network's ability to provide specific capabilities to the BCT commander. Throughout VALEX planning and execution, SOSE&I coordinates with the Army Test and Evaluation Command (ATEC) and Brigade Modernization Command (BMC) to ensure network instrumentation, training, and operational requirements are coordinated. 					
<p>Title: Network Integration Support</p> <p>Description: These funds provide for the field setup, validation, verification and correction of the network for the NIE.</p> <p>FY 2014 Accomplishments:</p> <p>Network Integration-funded Data Product build effort supported all transport layer communication devices. This effort included:</p>			5.374	3.090	5.957

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Development of the NIE network's Lightweight Data Interchange Format (LDIF) file; All NETOPS synchronization and coordination activities; Government Subject Matter Experts (SME) who assist in the integration of specialized communication hardware in BCT Command and Control (C2) centers; • Contractor FSRs and network Subject Matter Experts (SMEs) who helped SoSE&I ensure the network was operational during VALEX, BCT Communications Exercises (COMMEXs), NIE Pilot Testing, and NIE execution.</p> <p>FY 2015 Plans: Network Integration funds Data Product builds for all transport layer communication devices. This effort includes: • Development of the NIE network's Lightweight Data Interchange Format (LDIF) file; • All NETOPS synchronization and coordination activities; • Government Subject Matter Experts (SME) who assist in the integration of specialized communication hardware in BCT Command and Control (C2) centers; • Contractor FSRs and network Subject Matter Experts (SMEs) who help SoSE&I ensure the network is operational during VALEX, BCT Communications Exercises (COMMEXs), NIE Pilot Testing, and NIE execution.</p> <p>FY 2016 Plans: Network Integration funds Data Product builds for all transport layer communication devices. This effort includes: • Development of the NIE network's Lightweight Data Interchange Format (LDIF) file; • All NETOPS synchronization and coordination activities; • Government Subject Matter Experts (SME) who assist in the integration of specialized communication hardware in BCT Command and Control (C2) centers; • Contractor FSRs and network Subject Matter Experts (SMEs) who help SOSI ensure the network is operational during VALEX, BCT Communications Exercises (COMMEXs), NIE Pilot Testing, and NIE execution.</p>			
<p>Title: NIE Infrastructure</p> <p>Description: Provides for Infrastructure (facilities) at FT Bliss TX and WSMR.</p> <p>FY 2014 Accomplishments: These funds provided for setting up, utilities, furniture, equipment and maintenance (of equipment and facilities) used by SOS at Fort Bliss TX, (FBTX) and White Sands Missile Range NM (WSMR) during the planning and execution of NIE 14.2 and 15.1. Included lease and support maintenance contracts for Government Service Administration (GSA) vehicles that supported the NIE mission at FBTX/WSMR; it also funded activities to divest SoSE&I facility holdings at WSMR.</p> <p>FY 2015 Plans:</p>		1.054	0.606
			1.169

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities) used by SoSE&I at Fort Bliss TX, (FBTX) during the planning and execution of NIE 15.2 and 16.1. Includes lease and support maintenance contracts for Government Service Administration (GSA) vehicles that support the NIE mission at FBTX/WSMR; it does not include funding of any facilities at WSMR</p> <p>FY 2016 Plans: Provides for setup, utilities, furniture, equipment and maintenance (of all equipment and facilities) used by SoSE&I at Fort Bliss TX, (FBTX) during the planning and execution of NIE 16.2 and 17.1. Includes lease and support maintenance contracts for Government Service Administration (GSA) vehicles that support the NIE mission at FBTX/WSMR; it does not include funding of any facilities at WSMR.</p>			
<p>Title: Network Integration Evaluation SUE support (NIE)</p> <p>Description: These funds provide for selected SUEs participation in NIE during Phase V of the Army's Agile process.</p> <p>FY 2014 Accomplishments: Provided funding to support integration and evaluation that supported semi-annual events of industry and government technologies which were being selected as SUEs for participation in NIE 14.2 & 15.1. These funds covered the NIE participant's (emerging and existing technologies, and contractors) costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) integration A-kit development, and the purchase of additional prototypes as needed to effectively complete detailed evaluations of the complete network architecture. Included costs for development of integration hardware and software (A-KIT design support) in preparation for the NIE, the selected units participate in the NIE VALEX at FBTX. After hand-off of vehicles, the participating test units deployed to the tactical training/evaluation areas on FBTX and WSMR to complete the NIE event (4 weeks). This efforts also supported any unique SUE support requirements (such as escort personnel, transportation, or facilities).</p> <p>FY 2015 Plans: Provides funding to support integration and evaluation, to support semi-annual events of industry and government technologies which are being selected as SUEs for participation in NIE 15.2 & 16.1. These funds cover the NIE participant's (Emerging and existing technologies, and contractors) costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) integration A-kit development, and the purchase of additional prototypes when needed to effectively complete detailed evaluations of the complete network architecture. Includes costs for development of integration hardware and software (A-KIT design support). In preparation for the NIE, the selected units participate in the NIE VALEX at FBTX. After hand-off of vehicles, the participating test units deploy to the tactical training/evaluation areas on FBTX and WSMR to complete the NIE event (4 weeks). This effort also supports any unique SUE support requirements (such as escort personnel, transportation, or facilities).</p> <p>FY 2016 Plans:</p>		0.945	1.048

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Provides funding to support integration and evaluation, to support semi-annual events of industry and/or government technologies which are being selected as SUEs for participation in NIE 16.2 & 17.1 to achieve Army's Network 2020 and Force 2025 goals. These funds cover the NIE participant's (Emerging and existing technologies, and contractors) costs for travel, and shipment of equipment, Contractor Field Service Representatives (CFSRs) integration A-kit development, and the purchase of additional prototypes when needed to effectively complete detailed evaluations of the complete network architecture. Includes costs for development of integration hardware and software (A-KIT design support). In preparation for the NIE, the selected units participate in the NIE VALEX at FBTX. After hand-off of vehicles, the participating test units deploy to the tactical training/evaluation areas on FBTX and WSMR to complete the NIE event (4 weeks). This effort also supports any unique SUE support requirements (such as escort personnel, transportation, or facilities).					
Title: Platform/BDE Integration Management Support			7.268	4.178	8.056
Description: These funds provide for all SoSE&I government and contractor personnel providing direct management, systems engineering, and specialty engineering support to the Platform and Brigade Integration efforts at Ft Bliss in support of the NIE.					
FY 2014 Accomplishments: This effort included all program, information, security, business, and personnel management efforts required to support the Network Integration teams. It included: <ul style="list-style-type: none"> • Program management • Schedule development and management; • Contracting and financial management; • Cost analysis; • Personnel management; • Operations; • Security management; • NIE event management; • Information Assurance; • Information management; • Database and IT support; • Facilities and infrastructure management; and, • Knowledge management. In addition to people, costs included all IT support for Network connectivity i.e., purchasing/leasing hardware, software, computers, communications equipment and services.					
FY 2015 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>This effort includes all program, information, security, business, and personnel management efforts required to support the Network Integration teams. It includes:</p> <ul style="list-style-type: none"> • Program management • Schedule development and management; • Contracting and financial management; • Cost analysis; • Personnel management; • Operations; • Security management; • NIE event management; • Information Assurance; • Information management; • Database and IT support; • Facilities and infrastructure management; and, • Knowledge management. <p>In addition to people, costs include all IT support for Network connectivity i.e., purchasing/leasing hardware, software, computers, communications equipment and services.</p> <p>FY 2016 Plans:</p> <p>This effort includes all program, information, security, business, and personnel management efforts required to support the Network Integration teams. It includes:</p> <ul style="list-style-type: none"> • Program management • Schedule development and management; • Contracting and financial management; • Cost analysis; • Personnel management; • Operations; • Security management; • NIE event management; • Information Assurance; • Information management; • Database and IT support; • Facilities and infrastructure management; and, • Knowledge management. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
In addition to people, costs include all IT support for Network connectivity i.e., purchasing/leasing hardware, software, computers, communications equipment and services.												
Accomplishments/Planned Programs Subtotals										41.048	23.599	45.504
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• DY3: <i>DY3 NIE Test & Evaluation</i>	14.494	24.773	12.215	-	12.215	13.588	11.717	11.739	11.887	Continuing	Continuing	
• DY4: <i>DY4 Network Integration Support</i>	10.614	20.408	14.131	-	14.131	15.824	13.860	13.882	14.033	Continuing	Continuing	
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>	4.059	2.802	4.601	-	4.601	5.584	5.699	5.812	5.926	Continuing	Continuing	
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>	14.664	9.638	16.416	-	16.416	19.914	20.490	2.142	21.887	Continuing	Continuing	
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>	6.548	4.026	6.375	-	6.375	7.794	8.010	8.213	8.422	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
This project does not have any requirement for direct procurement of hardware or software.												
E. Performance Metrics												
N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Platform Integration Support	TBD	Various Note: 1 : TBD	0.000	8.990	Nov 2013	8.780	Nov 2014	16.929	Nov 2015	-		16.929	-	34.699	-
Brigade Integration Support	TBD	Various Note: 1 : TBD	0.000	8.349	Nov 2013	6.402	Nov 2014	12.345	Nov 2015	-		12.345	-	27.096	-
Network Integration Support	TBD	Various Note: 1 : TBD	0.000	8.185	Nov 2013	3.090	Nov 2014	5.958	Nov 2015	-		5.958	-	17.233	-
Network Integration Evaluation SUE support (NIE)	TBD	Various Note: 1 : TBD	0.000	11.531	Nov 2013	0.976	Nov 2014	1.882		-		1.882	-	14.389	-
Platform/BDE Integration Management Support	TBD	Various Note: 1 : TBD	0.000	1.658	Nov 2013	2.663	Nov 2014	5.134		-		5.134	-	9.455	-
Subtotal			0.000	38.713		21.911		42.248		-		42.248	-	102.872	-

Remarks

Note: 1

- All funding executed from SoSE&I (Warren MI)
- Program Activities performed at TACOM (Warren MI), FT Bliss (TX), White Sands Missile Range (NM).
- Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Infrastructure Support	TBD	Various Note: 1 : TBD	0.000	2.335	Nov 2013	1.688	Nov 2014	3.256		-		3.256	-	7.279	-
Subtotal			0.000	2.335		1.688		3.256		-		3.256	-	7.279	-

Remarks

Note: 1

- All funding executed from SoSE&I (Warren MI)
- Program Activities performed at FT Bliss (TX), White Sands Missile Range (NM).
- Program Integration support through various PMs, PEOs, RDECOM, and a multitude of small support and industry contractors.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army										Date: February 2015			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>					Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>			
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	41.048		23.599		45.504		-		45.504	-	110.151	-
Remarks													

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)

DY6 / *Brigade and Platform Integration Support*

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 14.2 Planning - Execution																												
(1) NIE 14.2 DP 2																												
NIE 14.2 Lab Integration/Testing																												
NIE 14.2 Candidate Solution Integration																												
NIE 14.2 LoadEx																												
NIE 14.2 CommEx																												
NIE 14.2 Pilot																												
NIE 14.2 Event																												
NIE 14.2 Event Analysis & Summary																												
NIE 15.1 Planning - Execution																												
(2) NIE 15.1 Industry Day																												
(3) NIE 15.1 DP 1																												
NIE 15.1 DP 2																												

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604798A / Brigade Analysis,
Integration and Evaluation

Project (Number/Name)

DY6 / Brigade and Platform Integration
Support

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 15.1 Lab Integration/Testing																												
NIE 15.1 Candidate Solution Integration																												
NIE 15.1 LoadEx																												
NIE 15.1 CommEx																												
NIE 15.1 Pilot																												
NIE 15.1 Event																												
NIE 15.1 Event Analysis & Summary																												
NIE 15.2 Planning - Execution																												
(1) NIE 15.2 Industry Day																												
(2) NIE 15.2 DP 1																												
(3) NIE 15.2 DP 2																												
NIE 15.2 Lab Integration/Testing																												
NIE 15.2 Candidate Solution Integration																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																			Date: February 2015										
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation										Project (Number/Name) DY6 / Brigade and Platform Integration Support									
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
NIE 15.2 LoadEx					NIE 15.2 LoadEx																								
NIE 15.2 CommEx					NIE 15.2 CommEx																								
NIE 15.2 Pilot					NIE 15.2 Pilot																								
NIE 15.2 Event					NIE 15.2 Event																								
NIE 15.2 Event Analysis & Summary					NIE 15.2 Event Analysis & Summary																								
NIE 16.1 Planning - Execution					NIE 16.1 Planning - Execution																								
(1) NIE 16.1 Industry Day					NIE 16.1 Industry Day																								
(2) NIE 16.1 DP 1					NIE 16.1 DP 1																								
(3) NIE 16.1 DP 2					NIE 16.1 DP 2																								
NIE 16.1 Lab Integration/Testing					NIE 16.1 Lab Integration/Testing																								
NIE 16.1 Candidate Solution Integration					NIE 16.1 Candidate Solution Integration																								
NIE 16.1 LoadEx					NIE 16.1 LoadEx																								
NIE 16.1 CommEx					NIE 16.1 CommEx																								

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																		Date: February 2015																			
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation										Project (Number/Name) DY6 / Brigade and Platform Integration Support																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 16.1 Pilot														NIE 16.1 Pilot																							
NIE 16.1 Event														NIE 16.1 Event																							
NIE 16.1 Event Analysis & Summary														NIE 16.1 Event Analysis & Summary																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY6 / <i>Brigade and Platform Integration Support</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 Planning - Execution	2	2013	3	2014
NIE 14.2 DP 2	1	2014	1	2014
NIE 14.2 Lab Integration/Testing	1	2014	3	2014
NIE 14.2 Candidate Solution Integration	2	2014	3	2014
NIE 14.2 LoadEx	2	2014	3	2014
NIE 14.2 CommEx	3	2014	3	2014
NIE 14.2 Pilot	3	2014	3	2014
NIE 14.2 Event	3	2014	3	2014
NIE 14.2 Event Analysis & Summary	3	2014	3	2014
NIE 15.1 Planning - Execution	3	2013	1	2015
NIE 15.1 Industry Day	1	2014	1	2014
NIE 15.1 DP 1	2	2014	2	2014
NIE 15.1 DP 2	3	2014	3	2014
NIE 15.1 Lab Integration/Testing	3	2014	1	2015
NIE 15.1 Candidate Solution Integration	3	2014	4	2014
NIE 15.1 LoadEx	4	2014	4	2014
NIE 15.1 CommEx	4	2014	4	2014
NIE 15.1 Pilot	1	2015	1	2015
NIE 15.1 Event	1	2015	1	2015
NIE 15.1 Event Analysis & Summary	1	2015	1	2015
NIE 15.2 Planning - Execution	2	2014	3	2015
NIE 15.2 Industry Day	3	2014	3	2014

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)

DY6 / *Brigade and Platform Integration Support*

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 15.2 DP 1	4	2014	4	2014
NIE 15.2 DP 2	4	2014	4	2014
NIE 15.2 Lab Integration/Testing	1	2015	3	2015
NIE 15.2 Candidate Solution Integration	2	2015	2	2015
NIE 15.2 LoadEx	2	2015	3	2015
NIE 15.2 CommEx	3	2015	3	2015
NIE 15.2 Pilot	3	2015	3	2015
NIE 15.2 Event	3	2015	3	2015
NIE 15.2 Event Analysis & Summary	3	2015	3	2015
NIE 16.1 Planning - Execution	3	2014	1	2016
NIE 16.1 Industry Day	1	2015	1	2015
NIE 16.1 DP 1	2	2015	2	2015
NIE 16.1 DP 2	2	2015	2	2015
NIE 16.1 Lab Integration/Testing	3	2015	1	2016
NIE 16.1 Candidate Solution Integration	4	2015	4	2015
NIE 16.1 LoadEx	4	2015	4	2015
NIE 16.1 CommEx	4	2015	1	2016
NIE 16.1 Pilot	1	2016	1	2016
NIE 16.1 Event	1	2016	1	2016
NIE 16.1 Event Analysis & Summary	1	2016	1	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation				Project (Number/Name) DY7 / Army Systems Engineering, Architecture & Analysis			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DY7: Army Systems Engineering, Architecture & Analysis	-	14.664	9.638	16.416	-	16.416	19.914	20.490	21.142	21.887	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides the Army's leadership and materiel developers with the necessary Capability Set (CS) modernization planning, critical path analysis, risk analysis and mitigation planning, system of systems engineering (SOSE), technical analysis and architectural products to inform the Army's materiel portfolio (5 and 30 year plans). This project explicitly includes critical Common Operating Environment (COE) and Cyber Security engineering, architecture and governance development tasks necessary to develop effective, affordable and secure network capabilities to meet Network 2020 and Force 2025 initiatives. This project captures and manages at the CS level, senior stakeholder guidance (i.e. TRADOC, G3/5/7, G2, and CIO/G6) to shape future Network Capability Sets (i.e. enterprise scope), Operational Capability Sets (OCS) and Institutional Capability Sets (ICS)(per the approved CIO/G6 LandWarNet 2020 and beyond strategy) and corresponding post/camp/station modernization and integrated base defense (IBD) requirements. This project defines and executes its mission in the context of a SoS Engineering Management Plan (SoSEMP), that provides comprehensive engineering, analysis and architecture processes across early CS requirements and roadmap development; engineering and analysis tasks; lab and field risk reduction efforts; NIE SoS scope CS evaluation; and unit-specific architectural planning support to boots-on-the-ground synchronized fielding execution. These SoSEMP processes deliver authoritative products at a CS/SoS and platform level that informs and captures senior leadership decisions, supporting critical path execution of CS modernization efforts, including Force 2025 initiatives. This project includes support to other DOD and international agencies for joint programs and collaboration efforts with NIE and Force Basing/Tactical Capability Set portfolio integration. The Government effort includes costs for salaries, travel, overtime, training, supplies, facilities, and IT support.

This project establishes the capability to develop and deliver authoritative system of system engineering, analysis and architecture products, through focused analysis & trades, against defined and managed CS goals and roadmap. These products provide timely and relevant information to inform decision makers in the Army's modernization prioritization challenges. These products are unique in that they encompass a cross-PEO, cross-portfolio perspective of modernization initiatives through the POM years, affording analysis activities at senior leadership levels for informing WSR/POM priorities, as well as more strategic challenges such as Force 2025 objectives. The products focus on critical path SoS dependencies necessary to define, evaluate and field CS capabilities, per ARFORGEN. These products are developed in tight coordination with a wide spectrum of stakeholder organizations, from G3 and TRADOC, to PEO/PMO leadership, to gaining units during synchronized fielding. The primary level of effort in this project is in the validation of its products with stakeholder SME, to assure they are relevant, validated and authoritative for supporting CS design and decision challenges. To aid senior leadership and engineering activities in comprehending the complexities of the cross-PEO/cross-portfolio/POM scope modernization planning challenges, this project provides for Formation-level Reference Architectures (OV-1's), with included NCS SoS Specification and all Army formations, that form the basis for representing and communicating the Army's programmed plan to HQDA customers and Program Executive Officers/ Program Managers (PEOs/PMs). The LWN NCS SoS Reference Architecture is composed of the NCS Institutional Capability Set SoS Reference Architecture and the NCS Operational Capability Set SoS Reference Architecture. The Institutional Capability Set is composed of the Enterprise Component and Installation Component. Communications and computing for Base Camps and Brigade Combat Teams are also included in the NCS Operational Capability Set. It enables analyses and trades

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>
<p>that use the reference architecture design data to inform implementation architectures and support informed systems acquisition decisions across the life cycle. These products are derived directly from an Integrated Basis of Issue Feeder Data (IBOIFD) product, that aggregates POR BOI feeder data, and becomes the managed fielding baseline plan for network procurement decisions, directly feeding unit-specific TOE/MTOE fielding baselines. This data provides for single authority within ASA(ALT) for System of Systems Implementation Architecture oversight to inform and manage governance and approvals of emerging SoS designs, defining necessary compliance guidance for SoS scope initiatives and concerns (i.e. COE and Cyber).</p> <p>This project explicitly addresses the orchestration, management, and oversight Common Operation Environment (COE), an Army Priority 1 initiative. It includes development of vision, strategy, and plans for migrating solutions to a common infrastructure; increase the Army's cyber security posture; decrease life cycle costs; improve and simplify interoperability and integration; and leverage industry and government developed solutions.</p> <p>This project provides ASA(ALT) Cyber Focal for all Cyber requirements. Synchronization and analysis of integrated capabilities, resources and requirements to enhance cyber security and resiliency across the materiel development and cyber operational communities. Lead ASA(ALT) implementation of Cyber requirements through analysis and decomposition of requirements, alignment with the appropriate programs, and synchronization of an integrated execution/acquisition approach. Provides governance and standards to enable the advancement of decisive cyber operations. Leads cross-portfolio resource planning and facilitates the materiel development and cyber operational communities through agile acquisition strategies. Manages ASA(ALT) mission assurance and compliance; Governance; Cyber Security; Cyber Architecture; and Defense Industrial Base (DIB) Cyber Security Office.</p>		
B. Accomplishments/Planned Programs (\$ in Millions)		
Title: Army System of System Engineering and Analysis		FY 2014
Description: To develop Operational (Brigade) Reference and Implementation Architectures, to support NIE, to develop Capability Sets, to develop Network Capability Sets (NCS), to develop Integrated Base Defense (IBD), and to support Army POM and 30 year plans. This effort begins with TRADOC's and CIO/G-6's operational and technical architecture requirements.		FY 2015
FY 2014 Accomplishments: These funds provided the following: Synchronized enduring System-of-Systems (SoS) engineering and analysis to develop and deliver the following products: - Delivered supported architectural products for the CS17-21 WSR process - Delivered TCS15 and TCS 16 Reference Architecture to include networked vehicle diagram allowing PEOs/PMs to execute the fielding of CS 15/16 capabilities - Analyzed and integrated stakeholder strategies and roadmaps to identify acquisition modernization priorities that support engineering design of Reference Architectures for POM year Capability Sets - Supported development of the material solutions strategy Army Campaign Plan - Delivered IBCT and SBCT Analysis for TCS 15-19 - Refined AIC Mission threads for COE V1 - Developed and maintained ongoing analyses to shape evolving Army portfolio priorities		FY 2016
		10.368
		6.814
		9.553

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation	Project (Number/Name) DY7 / Army Systems Engineering, Architecture & Analysis	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>-Developed and Delivered the LandWarNet (LWN) Network Capability Set (NCS) System of Systems (SoS) Reference Architecture (RA) and Specification (Spec)</p> <p>- Developed and Delivered the LWN NCS Institutional Capability Set SoS RA and Spec</p> <p>- Developed the LWN NCS Installation and Enterprise Component SoS RA and Spec (as components of the Institutional CS)</p> <p>- Developed and delivered Integrated Base Defense FY17 OCONUS Base Camps Reference Architecture</p> <p>- Developed and delivered Integrated Base Defense FY17 CONUS Installations Reference Architecture.</p> <p>FY 2015 Plans:</p> <p>These funds provide the following:</p> <p>Synchronizing ongoing System-of-Systems (SoS) engineering, analysis, and architecture to develop and distribute the following products to Program Executive Offices (PEOs), Program of Records (PORs), Program Managers (PMs) and Science & Technology (S&T) in order for them to design, develop, evaluate and field integrated and interoperable Tactical Capability Sets (TCS), including support products for developing Weapons System Review (WSR) packages for WSR 18-22:</p> <p>- CS23: Refined "Requirements"; Gaps and POR Identification</p> <p>- CS22: Refined Gaps and Objectives identification which will support the development of the Sources Sought (SS) and Tech Call Memo (TC); Basis of Issue (BOI), Platform Interconnect Diagram (PID), and the Transport Design (TD) for NIE 19.1 (Experimental Event)</p> <p>- CS21: Based upon NIE18.1 Horse Blanket, Refined Gaps and create Specifications, which will support the development of the (Tech Evaluation Criteria, and Scope of Work) for competitive Request for Proposal (RFP) and Tech Call Memo (TC) for NIE 19.2</p> <p>- CS20: Refined Basis of Issue (BOI) for the development of NIE 18.2. (Baseline Event)</p> <p>- CS19: Finalize Basis of Issue (BOI) for Production funding for the Tactical Capability Set 19,</p> <p>Synchronizing ongoing System-of-Systems (SoS) engineering, analysis, and architecture to develop and distribute the following products to HQDA customers, Program Executive Offices (PEOs), Program of Records (PORs), Program Managers (PMs), and Science & Technology (S&T) in order for them to develop their program plans for CIO/G-6 and the Installation (II) PEG for POM 18-22:</p> <p>- LandWarNet (LWN) Network Capability Set (NCS) System of Systems (SoS) Reference Architecture (RA) (with included NCS SoS Specification)</p> <p>- LWN NCS Institutional Capability Set SoS Reference Architecture</p> <p>- LWN NCS Operational Capability Set SoS Reference Architecture.</p> <p>- Enterprise Component of the LWN NCS Institutional CS SoS RA</p> <p>- Installation Component of the LWN NCS Institutional CS SoS RA</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p>Synchronizing ongoing System-of-Systems (SoS) engineering, analysis, and architecture to develop and distribute the following products to HQDA customers, Program Executive Offices (PEOs), Program of Records (PORs), Program Managers (PMs), and Science & Technology (S&T) in order for them to develop their program plans, including support products for Integrated Weapon Systems Review (I-WSR) FY18-22:</p> <ul style="list-style-type: none"> - Integrated Base Defense FY19 (Annual) OCONUS Base Camps Reference Architecture <p>System-of-Systems (SoS) engineering, analysis, and architecture to develop and distribute the following products to ASA(ALT) System of System Integration (SoSI) for the execution of NIEs and the fielding of Tactical Capability Sets to the Warfighter:</p> <ul style="list-style-type: none"> - CCI OCONUS Base Camps Reference Architecture - IBD CONUS Installations Reference Architecture - IBD OCONUS Base Camps Reference Architecture - Integration and Coordination of Installation, Enterprise, ICS, OCS and NCS Reference Architectures - SV1 SoS Overviews - SV2 Transport overlay - Analyze and integrate stakeholder strategies and roadmaps to identify acquisition modernization priorities that support engineering design of Reference Architectures for POM year Capability Sets - Support development of the material solutions strategy Army Campaign Plan - Develop and maintain analyses that shape evolving Army portfolio priorities. <p>FY 2016 Plans:</p> <p>These funds provide the following:</p> <ul style="list-style-type: none"> - Develop the acquisition Capability Set Modernization Matrix (CMM) for capturing, validating and managing CS2020 and CS2025 acquisition and stakeholder modernization objectives and goals, as an authoritative CS acquisition baseline document for informing CS prioritization, evaluation and fielding decisions. Integrate CMM data in the ASA(ALT) IMS. - Develop CS roadmaps, integral to ASA(ALT) IMS data, capturing critical path analysis to identify analysis/design, decision and POR delivery and fielding requirements for risk reduction, evaluation and fielding CS baselines per ARFORGEN. Provide specific and integrated roadmap products to manage co-evolution, programmatic coordination, integration and evaluation (i.e. NIE) of critical Network, COE, Cyber and evolving F2025 requirements supporting CS modernization. Develop and manage risk mitigation plans as identified as necessary to assure critical path execution. -Coordinate with PEO/POR, ARSTAFF, TRADOC stakeholders to capture and maintain an Integrated CS BOI Feeder Data (IBOIFD) baseline for all xBCT CS baselines in ARFORGEN, to define and analyze CS configuration baselines for planning and executing analysis tasks, decision challenges, evaluation (i.e. LBRR/NIE) and synchronized fielding requirements, and for informing WSR and POM procurement decisions. 					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<ul style="list-style-type: none"> - Identify and perform necessary analysis and design tasks (e.g. NCR, AMF studies) to inform CS design, decisions and evaluation guidance. Publish analysis in CS design guidance books as authoritative guidance to POR's for achieving CS SoS cross-PEO modernization objectives (e.g. Assured Position-Navigation-Timing, Tactical PKI). - Deliver senior leader level reference CS architecture products for communicating SoS acquisition objectives (i.e. Network, COE, Cyber, F2025), and informing decision activities driving CS modernization activities, for all relevant BCT types per ARFORGEN and evolving F2025 objectives, including dependencies on S&T, JIIM, generating force and enterprise scope IT/IS network assets. - Develop engineering-level formation/SoS, platform, COE and Cyber architectures to support analysis, T&E and Synchronized Fielding planning and execution activities, derived from and informing authoritative IBOIFD. Integrate architecture and IBOIFD data within authoritative TRADOC ARCADIE environment for assuring baseline product releases are managed in support of stakeholder needs. 					
Title: Common Operating Environment (COE) Description: Provide Engineering, Orchestration, Oversight and Governance for the Army SoS Common Operating Environment (COE); provide integrated, cross-portfolio system engineering, architecture products and cost benefit analysis and synchronized Acquisition planning for COE crossing multiple PEOs and Computing Environments (CEs); provide SoS requirements decomposition; conduct COE related Verification & Validation (V&V) planning and testing; and serve as the DA Staff advocate for COE and Cross Cutting Capabilities (CCCs). Serve as the Trail Boss for ASA (ALT) I2E.. FY 2014 Accomplishments: Funding provided technical support to oversee the execution of the COE Implementation plan, COE Orchestration, Governance, Cross-Cutting Capabilities Definition, an Implementation Plan Update, Software Build (SWB)/COE Configuration Control Board (CCB) and Test Support transition, Integrated Master Schedule, Coordination with Army Staff, Technical Reference Model, Metrics for assessing compliance, Technical Advisory Board (TAB), Chief Engineer (CE) compliance, COE assessment criteria, System software configuration baseline data collection, System software configuration baseline updates, Control Point/Interface Definition and Agreements, Transport Convergence, Network Synchronization Working Group organizing the SoS Engineering trade space for Platforms, Standards for the Platforms (VICTORY & FACE), Size Weight and Power (SWAP) working group, Software Blocking (SW), , Candidate Assessment for NIEs 14.2 and 15.1, and Technologies assessment, Systems Engineering Plan (SEP) policy, Reliability policy technical support, Standards & Specification adoption across ASA(ALT) and OSD/Joint, Development Planning model. It also provided for the development and execution of COE integration policies and procedures and the development of backwards capability testing, integration checklists and their verification. It provided for the development and effective utilization of emulator and integration tools, for COE/CE architecture validation, design baseline validation, and the verification of COE reference architecture compliance. It provided for the verification of COE critical enabler implementation,			3.177	2.088	3.072

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
conducting risk assessments and analysis, accreditation and certification process refinement, and verification of technical test harness and tool development. It provided for the accreditation, certification and refinement of test plans and events.					
FY 2015 Plans: The funds provide: Technical support to oversee the execution of the COE Implementation plan, COE Orchestration, Governance, Cross-Cutting Capabilities Definition, Implementation Plan Updates, Software Build (SWB)/COE Configuration Control Board (CCB) and Test Support transition, Integrated Master Schedule, Government oversight of the Army's Strategic Software Improvement Program (ASSIP), Coordination with Army Staff, Technical Reference Model, Metrics for assessing compliance, Technical Advisory Board (TAB), Chief Engineer (CE) compliance, COE assessment criteria, Assess systems during the System Under Evaluation (SUE) Technical Interface Meeting (TIM), System software configuration baseline data collection, System software configuration baseline updates, Control Point/Interface Definition and Agreements, Afghan Mission Network, Ops/ Intel Convergence, Transport Convergence, Network Synchronization Working Group , Joint Interoperability & Mission Thread Architecture Office of Secretary Defense (OSD) Director Defense Research and Engineering (DDR&E), Integrated Base Defense, Basing and Basing Computing/Communications Analysis, Host Based Security System (HBSS), Global Network Enterprise Construct (GNEC) Implementation Plan, Radio Procurement Requests, SoS Engineering Construct for the Network, Organizing the SoS Engineering trade space for Platforms, Standards for the Platforms (VICTORY & FACE), Size Weight and Power (SWAP) working group, Software Blocking (SW), NIE Gaps, Candidate Assessment for NIEs 15.2 and 16.1, and Technologies assessment, Systems Engineering Plan (SEP) policy, Program Protection Plan (PPP) reviews, Reliability policy technical support, Standards & Speciation adoption across ASA(ALT), (OSD/Joint), Development Planning model, IBD, Basing Pilot). It also provides for the development and execution of COE integration policies and procedures, the development and implementation of backwards capability testing, integration checklists and their verification, test hardware development and implementation support. The development and effective utilization of emulator and integration tools. Provides for COE/CE architecture validation, design baseline validation, and the verification of COE reference architecture compliance. The verification of COE critical enabler implementation, conducting risk assessments and analysis, accreditation and certification process refinement, and verification of technical test harness and tool development.					
FY 2016 Plans: The funds provide the following: --Orchestration and COE Governance Execution: The funds provide Implementation Management, development and maintenance of the COE Integrated Master Schedule, oversight of Computing Environment (CE) Working Groups conducting cross-Computing Environment coordination and conflict resolution efforts, and ASA (ALT) support for the Army Staff Network Synchronization efforts. The funds support COE STRATCOM development and industry engagement, including business case development and COE Contracting strategies. The funds support authoring the annual AAE Systems of Systems directive which guides the evolution the Army SW Baseline, reliability policy technical support, and Standards & Specification adoption across ASA(ALT),					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army			Date: February 2015		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p>(OSD/Joint), Development Planning model. The funds guide COE/CE architecture validation management, engineering plan review, design baseline validation, and the verification of COE reference architecture compliance.</p> <p>--Requirements and Engineering: The funds provide COE Technical Baseline Development that provides a Technical Roadmap to the Programs of Record (POR) for future capability development and software integration within the COE. Funds provide development of COE Engineering Change Proposals and vetting. Funds provide Systems of Systems engineering and analysis to synchronize POR migration to COE, oversee COE Common Software Foundation Development, Cross-Cutting Capabilities engineering and prioritization, Implementation Plan Updates, building and publishing the COE Technical Reference Model, compliance assessment metrics development, Technical Advisory Board (TAB) management, Resource Working Group (RWG) management and cross-CE and PEO Systems of Systems engineering support, Transport Convergence, and SoS COE Architecture and Data Models.</p> <p>--Technical Management: The funds provide technical support to oversee the execution of the COE Implementation Plan and DA COE EXORD compliance and execution, including cost analysis, tasking management, Modular Open System Architecture Guidance development and implementation, verification of COE critical enabler implementation, and risk assessments and analysis. Funds provide COE CBA to support the JCIDS process.</p> <p>--Testing, Certification and Fielding Preparation: The funds support for integration, validation, and verification of PORs in preparation for certification testing. Funds provide support to multi-level COE Baseline testing, System software configuration baseline data collection, System software configuration baseline updates, Control Point/Interface Definition and Agreements, and COE assessment criteria development and implementation. Funds provide SoS COE Standards for the Platforms (VICTORY & FACE), support for the Size Weight and Power (SWAP) working group, Software Blocking (SW), Software Version COE Configuration Control Board (CCB), Test Support transition and NIE Gaps and Technologies assessment. The funds provide accreditation and certification process refinement, verification of technical test harness and tool development, and accreditation, certification, and refinement of test plans and events. It also provides for the development and execution of COE integration policies and procedures, infrastructure qualification, the development and implementation of backwards capability testing, integration checklists and their verification, test hardware development and control point testing implementation support, and the development and effective utilization of emulator and integration tools.</p>					
<p>Title: ASA(ALT) Cyber Focal</p> <p>Description: These funds support critical ASA(ALT) Cyber Focal staff synchronization, analysis and integration of Cyber functions and products.</p> <p>FY 2016 Plans: These funds provide for the following: - Cyber Programs: Support Cyber materiel development processes by continually researching innovative acquisition process as well as utilizing science and technology resources to take advantage of the available technology. Streamlined and rapid</p>			-	-	2.782

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation	Project (Number/Name) DY7 / Army Systems Engineering, Architecture & Analysis		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Cyber materiel development processes support the Army Cyber mission forces as well as Army life-cycled managed systems and networks against emerging/evolving Cyber threats. - Mission Assurance and Compliance: Continue to improve the vulnerability management system, ensuring standardized compliance processes that provide flexibility to Program Managers and Commanders, allowing them to make decisions based on the vulnerability, risk and operational importance of the system or network; this provides Army Mission Assurance and Compliance processes and methodologies that are tailored to the system, network, and operations. - CIO Governance: Continue to manage the acquisition domain portfolio and business systems for ASA(ALT). Provide acquisition domain strategy, system binning requests, system assertions, system compliance reviews, problem statement review, CIO policy, system architecture, E2E process, policy and governance, data center consolidation, data management, CIO operations management, policy and governance and integration of Cyber and CIO resources. - Cyber security: Assist in the improvement of the system and network accreditation processes for life-cycle managed systems, that streamline the processes for quicker accreditation; this allows systems and networks to move through the development, testing and fielding processes, supporting rapid fielding of cyber capabilities and resilient systems to Warfighters. - Cyber Architecture: Provide cyber architecture subject matter expertise and cross PEO architecture integration, including systems engineering analysis and requirements decomposition of cyber requirements, and product support for Capability Set Fielding and Engineering and Integration architecture efforts.				
Title: Facilities and IT Support Description: Provides funding for infrastructure/facilities and IT support. FY 2014 Accomplishments: Provided funding for infrastructure/facilities. It included the cost for government IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services. FY 2015 Plans: Provides funding for infrastructure/facilities. It includes the cost for government IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services. FY 2016 Plans: Provides funding for infrastructure/facilities. It includes the cost for government IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.		1.119	0.736	1.009
Accomplishments/Planned Programs Subtotals		14.664	9.638	16.416

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• DY3: <i>DY3 NIE Test & Evaluation</i>	14.494	24.773	12.215	-	12.215	13.588	11.717	11.739	11.887	Continuing	Continuing
• DY4: <i>DY4 Network Integration Support</i>	10.614	20.408	14.131	-	14.131	15.824	13.860	13.882	14.033	Continuing	Continuing
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>	4.059	2.802	4.601	-	4.601	5.584	5.699	5.812	5.926	Continuing	Continuing
• DY6: <i>DY6 Brigade and Platform Integration Support</i>	4.108	23.559	45.504	-	45.504	59.703	69.926	64.194	64.185	Continuing	Continuing
• DZ6: <i>DZ6 Army Integration & Coordination Management</i>	6.548	4.026	6.375	-	6.375	7.794	8.010	8.213	8.422	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
This project does not have any requirement for direct procurement of hardware or software.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation				Project (Number/Name) DY7 / Army Systems Engineering, Architecture & Analysis					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Army System of System Engineering and Analysis	TBD	Various Note: 1 : TBD	0.000	10.368	Nov 2013	6.814	Nov 2014	9.553	Nov 2015	-		9.553	-	26.735	-
Common Operating Environment (COE)	TBD	Various Note: 1 : TBD	0.000	3.177	Nov 2013	2.088	Nov 2014	3.072		-		3.072	-	8.337	-
ASA(ALT) Cyber	TBD	TBD : Various: Note 1	0.000	-		-		2.782	Nov 2015	-		2.782	-	2.782	-
Subtotal			0.000	13.545		8.902		15.407		-		15.407	-	37.854	-
Remarks Note: 1 - All funding executed from SoSE&I (Warren MI) - Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Facility and IT Support	TBD	Various: Note: 1 : TBD	0.000	1.119	Nov 2014	0.736	Nov 2014	1.009	Nov 2015	-		1.009	-	2.864	-
Subtotal			0.000	1.119		0.736		1.009		-		1.009	-	2.864	-
Remarks Note:1 - All funding executed from SoSE&I (Warren MI) - Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)															
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	14.664		9.638		16.416		-		16.416	-	40.718	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																		Date: February 2015											
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>										Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>									
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Provide engineering, analytical and architectural oversight																													
CS15 - Develop and Deliver CS 15 ABCT Reference Architecture																													
Continue development of IBD CONUS Installations refer. arch. for FY15																													
Continue development of IBD OCONUS Base Camps refer. archt. for FY15																													
Develop and deliver CCI OCONUS Base Camp refer. Arch.for FY16 & FY17																													
CS15 - Develop and Deliver CS15 IBCT Reference Architecture																													
Develop initial ref. arch. for IBD OCONUS Installations for FY18 fielding																													
Dev. & deliver CCI CONUS Installation refer. Arch. for FY17 & FY18 fielding																													
Dev. initial IBD Movement Corridor reference architecture for FY18 fielding																													
Dev. initial CCI OCONUS Installation refer. Arch. for FY18 fielding																													
CS16 - Develop and Deliver CS16 IBCT Reference Architecture																													
CS16 - Develop and Deliver CS16 ABCT Reference Architecture																													
CS16 - Develop and Deliver CS16 SBCT Reference Architecture																													

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>								Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Develop and deliver Finalized BOI, PID, and TD for NIE 15.2 Horse B																												
Develop and deliver Tech Eval Criteria, Refined GAPs and Scope of V																												
Develop and deliver WSR package to PORs & PMs for WSR 18-22 fo																												
Develop and deliver Final BOI, PID, TD, DFD and NDB for CS17 Field																												
Develop and deliver BOI, PID & TD for NIE16.2 Horse Blanket																												
Develop and deliver Refined GAPs and Objectives for NIE16.1's Sourc																												
Develop and deliver engineering-level formation/SoS, platform, COE a																												
Review, update and deliver the Common Operating Environment (COE																												
Develop and deliver Capability Set Modernization Matrix for CS2020 &																												
Develop and deliver effective emulator and integration tools																												
Develop and deliver CS roadmaps, integral to ASA(ALT) IMS data																												
Develop and deliver Capabilities Definition, Implementation Plan Upda																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DY7 / <i>Army Systems Engineering, Architecture & Analysis</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Provide engineering, analytical and architectural oversight	1	2013	1	2015
CS15 - Develop and Deliver CS 15 ABCT Reference Architecture	3	2013	2	2014
Continue development of IBD CONUS Installations refer. arch. for FY16 & 17	3	2013	4	2014
Continue development of IBD OCONUS Base Camps refer. archt. for FY15-17 fielding	3	2013	4	2014
Develop and deliver CCI OCONUS Base Camp refer. Arch.for FY16 & FY17 fielding	3	2013	4	2014
CS15 - Develop and Deliver CS15 IBCT Reference Architecture	4	2013	3	2014
Develop initial ref. arch. for IBD OCONUS Installations for FY18 fielding	1	2014	4	2014
Dev. & deliver CCI CONUS Installation refer. Arch. for FY17 & FY18 fielding	1	2014	4	2014
Dev. initial IBD Movement Corridor reference architecture for FY18 fielding	1	2014	4	2014
Dev. initial CCI OCONUS Installation refer. Arch. for FY18 fielding	1	2014	4	2014
CS16 - Develop and Deliver CS16 IBCT Reference Architecture	3	2014	3	2015
CS16 - Develop and Deliver CS16 ABCT Reference Architecture	4	2014	3	2015
CS16 - Develop and Deliver CS16 SBCT Reference Architecture	4	2014	3	2015
Develop and deliver Finalized BOI, PID, and TD for NIE 15.2 Horse Blanket	4	2014	1	2015
Develop and deliver Tech Eval Criteria, Refined GAPs and Scope of Work for NIE16	4	2014	1	2016
Develop and deliver WSR package to PORs & PMs for WSR 18-22 for CS19-CS23	3	2015	4	2015
Develop and deliver Final BOI, PID, TD, DFD and NDB for CS17 Fielding	4	2015	1	2016
Develop and deliver BOI, PID & TD for NIE16.2 Horse Blanket	4	2015	1	2016
Develop and deliver Refined GAPs and Objectives for NIE16.1's Sources Sought	1	2016	1	2016
Develop and deliver engineering-level formation/SoS, platform, COE and Cyber arc	1	2016	4	2016
Review, update and deliver the Common Operating Environment (COE) Assessment Cri	1	2016	2	2016
Develop and deliver Capability Set Modernization Matrix for CS2020 & CS2025	4	2015	3	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation		Project (Number/Name) DY7 / Army Systems Engineering, Architecture & Analysis	
	Start		End	
Events	Quarter	Year	Quarter	Year
Develop and deliver effective emulator and integration tools	4	2015	4	2016
Develop and deliver CS roadmaps, integral to ASA(ALT) IMS data	2	2016	3	2016
Develop and deliver Capabilities Definition, Implementation Plan Updates,	3	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DZ6: <i>Army Integration Management & Coordination</i>	-	6.548	4.026	6.375	-	6.375	7.794	8.010	8.213	8.422	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the management and coordination of all six Phases of the Army's Agile Network Integration process along with the Army System of System engineering and analysis architecture development for the Army. The project funds the "shared" resources that support the technical and management (i.e. headquarters, resource management, acquisition, affordability, human resources, operations, etc.) aspects of the Army's Network Integration process and coordination of Production Integration and Fielding of the Capability Sets (CS). Effectively utilizing "shared" resources reduces overall cost to the program. The personnel funded by this project provides direct support to four directorates under ASA(ALT) SoSE&I; Engineering and Integration (E&I), Common Operating Environment (COE), Cyber Focal, and Capability Package.

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

	FY 2014	FY 2015	FY 2016
Title: SoSE&I Program Management and Integration	5.717	3.515	5.566
Description: This effort funds for all "shared" resources that supports the Brigade Analysis, Integration and Evaluation program.			
FY 2014 Accomplishments: This effort included program, information, security, business, and personnel management efforts required to support the SoSI integration teams. It included the following types of activities: Program management, contracting, financial management, cost analysis, personnel management, operations, security management, information management, facilities and infrastructure management, Pentagon liaison, knowledge management.			
FY 2015 Plans: This effort includes program, information, security, business, and personnel management efforts required to support the ASA(ALT) System of System Engineering and Integration Directorate. This includes; support of the system of system engineering process, the ASSALT integrated master schedule development and implementation, support of the Lab Based Risk Reduction and network integration effort, support of the NIE, and support of synchronized fielding. It includes the following types of activities: Program management, contracting, financial management, cost analysis, personnel management, operations, security management, information management, facilities and infrastructure management, Pentagon liaison, knowledge management.			
FY 2016 Plans: This effort includes program, information, security, business, and personnel management efforts required to support the ASA(ALT) System of System Engineering and Integration Directorate. This includes; support of the system of system engineering process, the ASSALT integrated master schedule development and implementation, support of the Lab Based Risk Reduction and network			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army									Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>				
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
integration effort, support of the NIE, and support of synchronized fielding. It includes the following types of activities: Program management, contracting, financial management, cost analysis, personnel management, operations, security management, information management, facilities and infrastructure management, Pentagon liaison, knowledge management.												
Title: Facilities and IT Support									0.831	0.511	0.809	
Description: Provides funding for infrastructure/facilities and IT support.												
FY 2014 Accomplishments: Provided funding for infrastructure/facilities, and government personnel IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.												
FY 2015 Plans: Provides funding for infrastructure / facilities, and government personnel IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.												
FY 2016 Plans: Provides funding for infrastructure / facilities, and government personnel IT support from Network connectivity to purchasing/leasing hardware, software, computers, communications equipment and services.												
Accomplishments/Planned Programs Subtotals									6.548	4.026	6.375	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• DY3: <i>DY3 NIE Test & Evaluation</i>	14.494	24.773	12.215	-	12.215	13.588	11.717	11.739	11.887	Continuing	Continuing	
• DY4: <i>DY4 Network Integration Support</i>	10.614	20.408	14.131	-	14.131	15.824	13.860	13.882	14.033	Continuing	Continuing	
• DY5: <i>DY5 Production/Fielding Coordination for Capability Sets</i>	4.059	2.802	4.601	-	4.601	5.584	5.699	5.812	5.926	Continuing	Continuing	
• DY6: <i>DY6 Brigade and Platform Integration Support</i>	41.048	23.599	45.504	-	45.504	59.703	63.926	64.194	64.185	Continuing	Continuing	
• DY7: <i>DY7 Army Systems Engineering, Architecture and Analysis</i>	14.664	9.638	16.416	-	16.416	19.914	20.490	21.142	21.887	Continuing	Continuing	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>
<u>D. Acquisition Strategy</u> This project includes the purchase of IT hardware, software and service support; general office and operational supplies.		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>				Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>					

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SoSE&I Program Management and Integration	TBD	Various Note: 1 : TBD	0.000	5.717	Nov 2013	3.515	Nov 2014	5.566	Nov 2015	-		5.566	-	14.798	-
Subtotal			0.000	5.717		3.515		5.566		-		5.566	-	14.798	-

Remarks
 Note: 1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC).

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Facilities and IT Support	TBD	Various Note: 1 : TBD	0.000	0.831	Nov 2013	0.511	Nov 2014	0.809	Nov 2015	-		0.809	-	2.151	-
Subtotal			0.000	0.831		0.511		0.809		-		0.809	-	2.151	-

Remarks
 Note:1
 - All funding executed from SoSE&I (Warren MI)
 - Program Activities performed at Aberdeen Proving Ground (MD), TACOM (Warren MI), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), FT Bliss (TX), White Sands Missile Range (NM).

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	6.548	4.026	6.375	-	6.375	-	16.949	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>
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Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 14.2 Planning - Execution																												
(1) NIE 14.2 DP 2																												
NIE 14.2 Lab Integration/Testing																												
NIE 14.2 Candidate Solution Integration																												
NIE 14.2 LoadEx																												
NIE 14.2 CommEx																												
NIE 14.2 Pilot																												
NIE 14.2 Event																												
NIE 14.2 Event Analysis & Summary																												
NIE 15.1 Planning - Execution																												
(2) NIE 15.1 Industry Day																												
(3) NIE 15.1 DP 1																												
(4) NIE 15.1 DP 2																												

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604798A / Brigade Analysis,
Integration and Evaluation

Project (Number/Name)

DZ6 / Army Integration Management &
Coordination

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 15.1 Lab Integration/Testing																												
NIE 15.1 Candidate Solution Integration																												
NIE 15.1 LoadEx																												
NIE 15.1 CommEx																												
NIE 15.1 Pilot																												
NIE 15.1 Event																												
NIE 15.1 Event Analysis & Summary																												
NIE 15.2 Planning - Execution																												
(1) NIE 15.2 Industry Day																												
(2) NIE 15.2 DP 1																												
(3) NIE 15.2 DP 2																												
NIE 15.2 Lab Integration/Testing																												
NIE 15.2 Candidate Solution Integration																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																			
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation								Project (Number/Name) DZ6 / Army Integration Management & Coordination																			
Event Name								FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
								1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 15.2 LoadEx								NIE 15.2 LoadEx																											
NIE 15.2 CommEx								NIE 15.2 CommEx																											
NIE 15.2 Pilot								NIE 15.2 Pilot																											
NIE 15.2 Event								NIE 15.2 Event																											
NIE 15.2 Event Analysis & Summary								NIE 15.2 Event Analysis & Summary																											
NIE 16.1 Planning - Execution								NIE 16.1 Planning - Execution																											
(1) NIE 16.1 Industry Day								NIE 16.1 Industry Day																											
(2) NIE 16.1 DP 1								NIE 16.1 DP 1																											
NIE 16.1 DP 2								NIE 16.1 DP 2																											
NIE 16.1 Lab Integration/Testing								NIE 16.1 Lab Integration/Testing																											
NIE 16.1 Candidate Solution Integration								NIE 16.1 Candidate Solution Integration																											
NIE 16.1 LoadEx								NIE 16.1 LoadEx																											
NIE 16.1 CommEx								NIE 16.1 CommEx																											

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

Date: February 2015

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)
DZ6 / *Army Integration Management & Coordination*

Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIE 16.1 Pilot																												
NIE 16.1 Event																												
NIE 16.2 Planning - Execution																												
NIE 16.2 Industry Day																												
NIE 16.2 DP 1																												
NIE 16.2 DP 2																												
NIE 16.2 Lab Integration/Testing																												
NIE 16.2 Candidate Solution Integration																												
NIE 16.2 ValEx																												
NIE 16.2 CommEx																												
NIE 16.2 Pilot																												
NIE 16.2 Event																												
NIE 16.2 Event Analysis & Summary																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army										Date: February 2015																						
Appropriation/Budget Activity					R-1 Program Element (Number/Name)										Project (Number/Name)																	
2040 / 5					PE 0604798A / Brigade Analysis, Integration and Evaluation										DZ6 / Army Integration Management & Coordination																	
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
NIE 17.1 Planning - Execution	NIE 17.1 Planning - Execution																															
NIE 17.1 Industry Day					NIE 17.1 Industry Day																											
NIE 17.1 DP 1									NIE 17.1 DP 1																							
NIE 17.1 DP 2									NIE 17.1 DP 2																							
NIE 17.1 Lab Integration/Testing					NIE 17.1 Lab Integration/Testing																											
NIE 17.1 Candidate Solution Integration					NIE 17.1 Candidate Solution Integration																											
NIE 17.1 ValEx									NIE 17.1 ValEx																							
NIE 17.1 CommEx									NIE 17.1 CommEx																							
NIE 17.1 Pilot									NIE 17.1 Pilot																							
NIE 17.1 Event									NIE 17.1 Event																							
NIE 17.1 Event Analysis & Summary					NIE 17.1 Event Analysis & Summary																											
CS14 Capability Set																																
NIE 16.1 Event Analysis & Summary	NIE 16.1 Event Analysis & Summary																															

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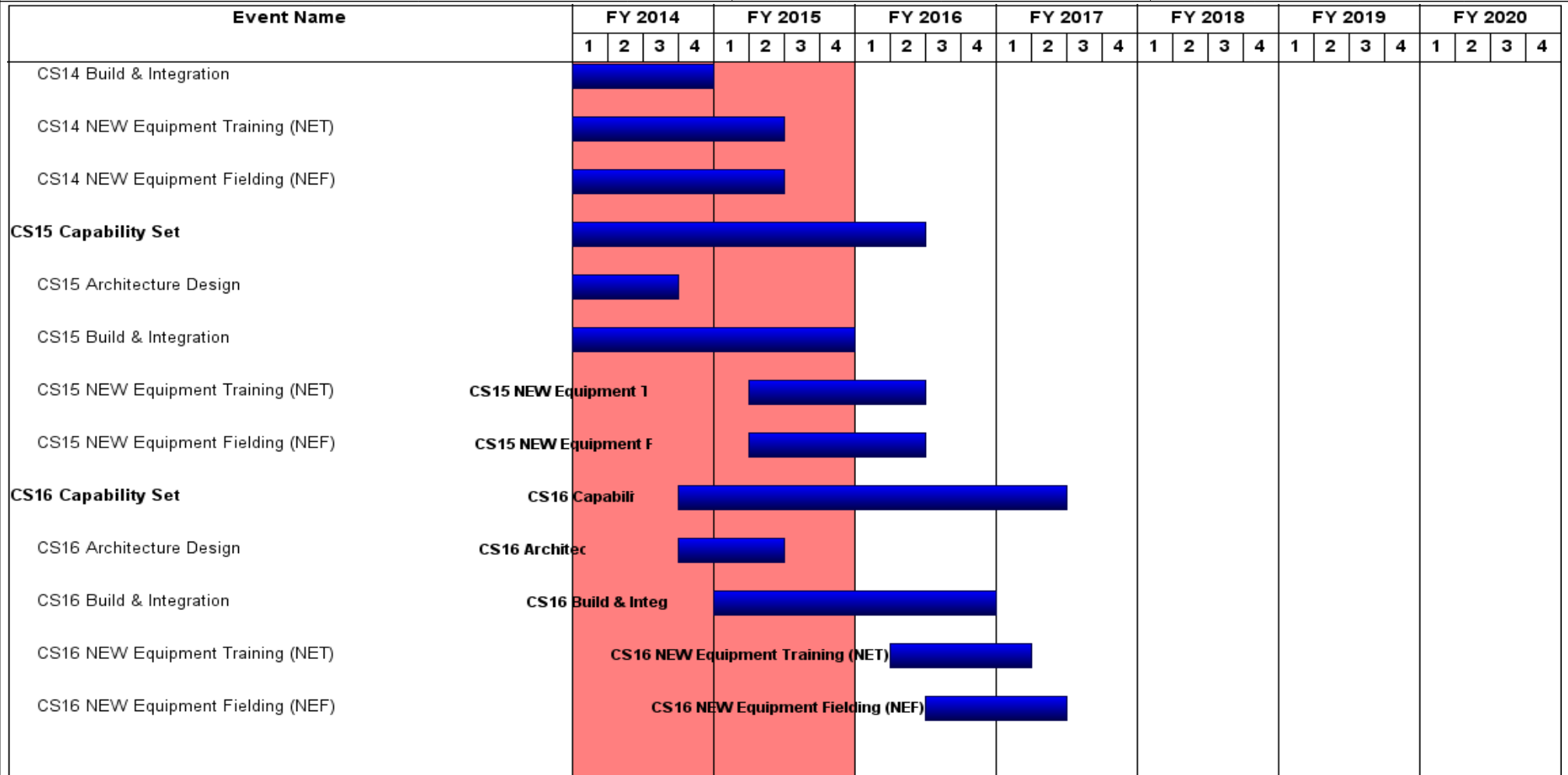
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army

Date: February 2015

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604798A / *Brigade Analysis, Integration and Evaluation*

Project (Number/Name)
DZ6 / *Army Integration Management & Coordination*



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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																								Date: February 2015															
Appropriation/Budget Activity 2040 / 5												R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation												Project (Number/Name) DZ6 / Army Integration Management & Coordination															
Event Name												FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
												1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CS17 Capability Set												CS17 Capability Set																											
CS17 Architecture Design												CS17 Architecture Desi																											
CS17 Build & Integration												CS17 Build & Integration																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>	Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 14.2 Planning - Execution	2	2013	3	2014
NIE 14.2 DP 2	1	2014	1	2014
NIE 14.2 Lab Integration/Testing	1	2014	3	2014
NIE 14.2 Candidate Solution Integration	2	2014	2	2014
NIE 14.2 LoadEx	2	2014	3	2014
NIE 14.2 CommEx	3	2014	3	2014
NIE 14.2 Pilot	3	2014	3	2014
NIE 14.2 Event	3	2014	3	2014
NIE 14.2 Event Analysis & Summary	3	2014	3	2014
NIE 15.1 Planning - Execution	3	2013	1	2015
NIE 15.1 Industry Day	1	2014	1	2014
NIE 15.1 DP 1	2	2014	2	2014
NIE 15.1 DP 2	3	2014	3	2014
NIE 15.1 Lab Integration/Testing	3	2014	1	2015
NIE 15.1 Candidate Solution Integration	3	2014	4	2014
NIE 15.1 LoadEx	4	2014	4	2014
NIE 15.1 CommEx	4	2014	1	2015
NIE 15.1 Pilot	1	2015	1	2015
NIE 15.1 Event	1	2015	1	2015
NIE 15.1 Event Analysis & Summary	1	2015	1	2015
NIE 15.2 Planning - Execution	2	2014	3	2015
NIE 15.2 Industry Day	3	2014	3	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604798A / <i>Brigade Analysis, Integration and Evaluation</i>		Project (Number/Name) DZ6 / <i>Army Integration Management & Coordination</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
NIE 15.2 DP 1	4	2014	4	2014	
NIE 15.2 DP 2	4	2014	4	2014	
NIE 15.2 Lab Integration/Testing	1	2015	3	2015	
NIE 15.2 Candidate Solution Integration	2	2015	2	2015	
NIE 15.2 LoadEx	2	2015	3	2015	
NIE 15.2 CommEx	3	2015	3	2015	
NIE 15.2 Pilot	3	2015	3	2015	
NIE 15.2 Event	3	2015	3	2015	
NIE 15.2 Event Analysis & Summary	3	2015	3	2015	
NIE 16.1 Planning - Execution	3	2014	1	2016	
NIE 16.1 Industry Day	1	2015	1	2015	
NIE 16.1 DP 1	2	2015	2	2015	
NIE 16.1 DP 2	2	2015	2	2015	
NIE 16.1 Lab Integration/Testing	3	2015	3	2015	
NIE 16.1 Candidate Solution Integration	4	2015	4	2015	
NIE 16.1 LoadEx	4	2015	4	2015	
NIE 16.1 CommEx	4	2015	1	2016	
NIE 16.1 Pilot	1	2016	1	2016	
NIE 16.1 Event	1	2016	1	2016	
NIE 16.2 Planning - Execution	4	2015	3	2016	
NIE 16.2 Industry Day	4	2015	4	2015	
NIE 16.2 DP 1	4	2015	4	2015	
NIE 16.2 DP 2	4	2015	4	2015	
NIE 16.2 Lab Integration/Testing	1	2016	3	2016	
NIE 16.2 Candidate Solution Integration	2	2016	2	2016	

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

Date: February 2015

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604798A / Brigade Analysis,
Integration and Evaluation

Project (Number/Name)

DZ6 / Army Integration Management &
Coordination

Events	Start		End	
	Quarter	Year	Quarter	Year
NIE 16.2 ValEx	2	2016	3	2016
NIE 16.2 CommEx	3	2016	3	2016
NIE 16.2 Pilot	3	2016	3	2016
NIE 16.2 Event	3	2015	3	2016
NIE 16.2 Event Analysis & Summary	3	2016	3	2016
NIE 17.1 Planning - Execution	1	2016	1	2017
NIE 17.1 Industry Day	1	2016	1	2016
NIE 17.1 DP 1	2	2016	2	2016
NIE 17.1 DP 2	2	2016	2	2016
NIE 17.1 Lab Integration/Testing	3	2016	1	2017
NIE 17.1 Candidate Solution Integration	4	2016	4	2016
NIE 17.1 ValEx	4	2016	4	2016
NIE 17.1 CommEx	1	2017	1	2017
NIE 17.1 Pilot	1	2017	1	2017
NIE 17.1 Event	1	2017	1	2017
NIE 17.1 Event Analysis & Summary	1	2017	1	2017
CS14 Capability Set	4	2012	2	2015
NIE 16.1 Event Analysis & Summary	1	2016	1	2016
CS14 Build & Integration	3	2012	4	2014
CS14 NEW Equipment Training (NET)	1	2014	2	2015
CS14 NEW Equipment Fielding (NEF)	1	2014	2	2015
CS15 Capability Set	3	2013	2	2016
CS15 Architecture Design	3	2013	3	2014
CS15 Build & Integration	4	2013	4	2015
CS15 NEW Equipment Training (NET)	2	2015	2	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / Brigade Analysis, Integration and Evaluation		Project (Number/Name) DZ6 / Army Integration Management & Coordination	
	Start		End	
Events	Quarter	Year	Quarter	Year
CS15 NEW Equipment Fielding (NEF)	2	2015	2	2016
CS16 Capability Set	4	2014	2	2017
CS16 Architecture Design	4	2014	2	2015
CS16 Build & Integration	1	2015	4	2016
CS16 NEW Equipment Training (NET)	2	2016	1	2017
CS16 NEW Equipment Fielding (NEF)	3	2016	2	2017
CS17 Capability Set	2	2015	2	2018
CS17 Architecture Design	2	2015	3	2016
CS17 Build & Integration	3	2015	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	16.770	14.998	21.379	-	21.379	27.816	43.997	54.917	65.857	-	245.734
613: MORTAR SYSTEMS	-	-	-	-	-	-	-	7.302	15.930	17.000	-	40.232
EC1: 40mm Hi Vel and Low Vel Thermal Training Cartridge	-	-	6.960	7.257	-	7.257	-	-	-	-	-	14.217
EC4: Non-Standard Simulator Munitions	-	-	0.885	0.993	-	0.993	1.291	1.588	1.985	2.085	-	8.827
EL9: Ammunitions Logistics Prototyping	-	-	-	2.599	-	2.599	3.509	2.644	1.942	2.339	-	13.033
EP2: Individual Assault Munition (IAM)	-	-	-	-	-	-	-	-	-	10.980	-	10.980
EP3: Reduced Range Small Caliber Training Ammunition	-	-	-	-	-	-	-	6.000	6.800	12.000	-	24.800
EP4: One-Way Lumiscence (OWL) for Small Caliber Ammo	-	-	-	-	-	-	-	3.200	2.900	5.800	-	11.900
EP5: Adv Armor-Piercing (ADVAP) for Small Caliber Ammo	-	-	-	-	-	-	10.600	9.500	13.900	7.200	-	41.200
EP6: Lightweight Cartridge Case for Small Caliber Ammo	-	-	-	-	-	-	4.000	4.400	4.000	2.000	-	14.400
EP7: Tunable Pyrotechnic Aircraft Countermeasure Flares	-	-	-	1.000	-	1.000	1.450	4.400	2.000	-	-	8.850
S36: Precision Guidance Kit	-	16.770	7.153	9.530	-	9.530	6.966	4.963	5.460	6.453	-	57.295
Note FY 2016: New start for Projects EL9 and EP7; Budget rephasing for project S36.												
A. Mission Description and Budget Item Justification This program element funds multiple efforts for engineering development of weapons and munitions systems.												

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>		R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>
<p>Project S36: This program funds engineering development of precision guidance systems applicable to Indirect Fire artillery weapon systems. The Precision Guidance Kit (PGK) is a Global Positioning System guidance kit with fuzing functions. PGK provides near precision accuracy and effectiveness for 155mm High Explosive artillery projectiles. PGK will improve the accuracy of existing artillery ammunition by correcting the trajectory of projectiles to their designated target location. Precision guidance systems will effectively reduce target delivery error reducing the number of rounds required to conduct a fire mission.</p> <p>Project EC1: The Target Practice Day/ Night/ Thermal (TP D/N/T) cartridges are 40mm grenade training cartridges. The low velocity variant is for training with the M203/ M320 grenade launchers and the high velocity variant is for training with the Mk19 grenade machine gun. Both of these cartridges will provide the War Fighter with a non dud producing, environmentally friendly training cartridge which provides a visual and thermal impact signature that can be seen day or night, by the unaided eye or through night vision devices and thermal weapon sights. The program will carry competitive prototypes for each cartridge variant through the Engineering and Manufacturing Development (EMD) phase.</p> <p>Project EC4: Army's Combat Training Centers are currently using non-standard munitions to replicate both conventional and asymmetric warfare battlefield effects. These modified commercial-off-the-shelf products have not been type classified, material released, and are not sustainable; because of these issues, risk assessment, and risk mitigation lies with the individual Training Center. Standardization of these munitions will reduce training costs, eliminate redundancies between systems, and mitigate safety risks associated with realistic scenario based training.</p> <p>Project EL9: This project supports the future force by improving the distribution, management, reliability and survivability of ammunition through the advanced development, integration, and demonstration of logistics system enablers. These enablers will improve the efficiency and effectiveness of ammunition operations, to include retrograde, while reducing the logistics footprint on the battlefield. Technology areas addressed include handling, distribution, and management (strategic and tactical), prognostics, diagnostics, and asset visibility, explosives safety, and adaptive and environmentally friendly packaging and palletization. The efficient deployment and sustainment of reliable ammunition is vital to success on the battlefield. This project enhances the operational effectiveness of the ammunition logistics system to ensure the distribution of reliable ammunition to the warfighter.</p> <p>Project EP7: This project will support Integrated System Design (ISD) and System Capability and Manufacturing Process Demonstrations (SC&MPD) on current pyrotechnic munitions and tunable pyrotechnic aircraft counter measures and decoys. The project will also support ISD & SC& MPD on new expendable countermeasure munitions that will protect Army aircraft from advanced and current guided missile threats. Activities include modeling and simulation, flight testing, qualification testing, engineering to reduce size and weight, environmental considerations, safety enhancements, manufacturing enhancements, qualification of other service and foreign munitions that could meet current requirements, product improvements, insertion of new technologies to increase performance, and enhancement of current flare solutions for new and existing aircraft. Systems include impulse cartridges, pen flares, hand held signals, trip flares, simulators, marine markers, smoke pots, smoke grenades, rail road flares and other type of emergency/distress devices, aircraft expendables (to include Radio Frequency (RF) expendables), and primers used in munitions systems.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Army				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604802A / Weapons and Munitions - Eng Dev			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	15.712	15.006	3.488	-	3.488
Current President's Budget	16.770	14.998	21.379	-	21.379
Total Adjustments	1.058	-0.008	17.891	-	17.891
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.576	-			
• SBIR/STTR Transfer	-0.531	-			
• Adjustments to Budget Years	0.013	-	17.987	-	17.987
• Budget Adjustments	-	-0.008	-0.096	-	-0.096

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>				Project (Number/Name) 613 / <i>MORTAR SYSTEMS</i>			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
613: <i>MORTAR SYSTEMS</i>	-	-	-	-	-	-	-	7.302	15.930	17.000	-	40.232
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
<p>A. Mission Description and Budget Item Justification</p> <p>Accelerated Precision Mortar Initiative (APMI), XM395 is a GPS guided 120mm mortar cartridge that will be compatible with all Army 120mm mortar systems in Afghanistan. The requirement for precision mortar capability resulted from an urgent operational need for highly transportable, all weather, rapidly responsive, precise, indirect fires to support widely dispersed combat outposts and operations at the lowest tactical echelons to meet an Operational Needs Statement (ONS) from Afghanistan. APMI will provide a precision 120mm mortar capability that has accuracy within 10 meter Circular Error Probable (CEP).</p> <p>Mortar Anti-Personnel Anti-Materiel (MAPAM), XM1061 is a 60mm enhanced fragmentation mortar program that provides 81mm effectiveness in a 60mm configuration. FY 2010 Congressional funds provide support for analysis of XM1143 81mm MAPAM and finalizing the design, testing, and qualification of XM1061. The program is in the final stages of development and Type Classification will commence in March 2011.</p> <p>B. Accomplishments/Planned Programs (\$ in Millions) N/A</p> <p>C. Other Program Funding Summary (\$ in Millions) N/A</p> <p>Remarks</p> <p>D. Acquisition Strategy N/A</p> <p>E. Performance Metrics N/A</p>												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) 613 / MORTAR SYSTEMS			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
APMI Phase II Contract	C/CPIF	ATK : Plymouth, MN	0.001	-		-		-		-		-		-	0.001	-
Subtotal			0.001	-		-		-		-		-		-	0.001	-
Project Cost Totals			0.001	-		-		-		-		-		-	0.001	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																				Date: February 2015																	
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>										Project (Number/Name) 613 / <i>MORTAR SYSTEMS</i>																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
APMI																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) 613 / <i>MORTAR SYSTEMS</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
APMI	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EC1 / 40mm Hi Vel and Low Vel Thermal Training Cartridge			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EC1: 40mm Hi Vel and Low Vel Thermal Training Cartridge	-	-	6.960	7.257	-	7.257	-	-	-	-	-	14.217
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note In FY 2015 program activities transferred from PE 643639 Project 694.												
A. Mission Description and Budget Item Justification The Target Practice Day Night Thermal (TP-DNT) cartridges are 40mm grenade training cartridges. The low velocity variant is for training with the M203/M320 grenade launchers; the high velocity variant is for training with the Mk19 grenade machine gun. Both cartridges will provide the Warfighter with a non-dud producing, environmentally friendly training cartridge that provides a visual impact signature seen day or night, by the naked eye, through night vision devices, and thermal weapon sights. These cartridges will replace the 40mm Target Practice, M918/M385A1 (Mixed Belt) cartridges and the 40mm M781 cartridges. It is expected that the unit price for high velocity cartridges will be lower than the Mixed Belt cartridges. Funding for FY 2015 activities transitions from PE 0603639/Project 694.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Target Practice Day Night Thermal Cartridges									-	6.960	7.257	
Description: The Target Practice Day Night Thermal (TP-DNT) Cartridges are 40mm grenade training cartridges												
FY 2015 Plans: FY 2015 activities include EMD contracts award for both the HV and LV variants.												
FY 2016 Plans: FY 2016 developmental engineering test activities for both HV and LV variants..												
Accomplishments/Planned Programs Subtotals									-	6.960	7.257	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• 40mm Hi Vel and Low Vel Thermal Trg: 40mm Hi Vel and Low Vel Thermal Trg PE 603639 Project 694	5.655	-	-	-	-	-	-	-	-	-	5.655	
• Target Pracice Day Night Thermal: Target Practice Day Night	-	1.972	-	-	-	110.400	116.828	103.329	99.941	-	432.470	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EC1 / 40mm Hi Vel and Low Vel Thermal Training Cartridge			
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
Thermal Cartridges Procurement (SSNs: E05610, E05611)											
Remarks Production dollars will be used to procure 40mm training cartridges. If not 40mm DNT cartridges, 40mm mixed belt cartridges will be procured.											
D. Acquisition Strategy The TP-DNT cartridges will be developed through a competitive Engineering and Manufacturing Development (EMD) program. The EMD phase will develop both High Velocity (HV) and Low Velocity (LV) variants that will most likely utilize the same critical technologies, making concurrent acquisitions a logical approach to reduce overall acquisition costs. As part of the EMD source selection, a Bid Sample shoot-off competition is underway to evaluate potential designs. Within funding constraints, multiple contractor designs will be awarded EMD contracts with intent to down select to one contractor for the HV variant and one contractor for the LV variant. Following the down select, begin Low Rate Initial Production (LRIP) and two production year options. Milestone C scheduled for 3Q FY 2017.											
E. Performance Metrics N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EC1 / 40mm Hi Vel and Low Vel Thermal Training Cartridge			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor 1 Low Velocity	C/FFP	TBD : TBD	0.000	-		1.414		-		-		-	-	1.414	-
Contractor 2 Low Velocity	C/FFP	TBD : TBD	0.000	-		1.415		-		-		-	-	1.415	-
Contractor 1 High Velocity	C/FFP	TBD : TBD	0.000	-		1.414		-		-		-	-	1.414	-
Contractor 2 High Velocity	C/FFP	TBD : TBD	0.000	-		1.415		-		-		-	-	1.415	-
PM MAS labor and travel	MIPR	PICATINNY ARSENAL : NJ	0.000	-		0.180		0.555		-		0.555	-	0.735	-
Subtotal			0.000	-		5.838		0.555		-		0.555	-	6.393	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ARDEC	MIPR	PICATINNY ARSENAL : NJ	0.000	-		0.552		2.178		-		2.178	-	2.730	-
Subtotal			0.000	-		0.552		2.178		-		2.178	-	2.730	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Yuma Proving Ground (YPG)	MIPR	Yuma : AZ	0.000	-		0.400		1.030		-		1.030	-	1.430	-
Aberdeen Test and Evaluation Center (ATEC)	MIPR	Aberdeen : MD	0.000	-		0.100		3.287		-		3.287	-	3.387	-
Dahlgren NSWC	MIPR	Dahlgren : VA	0.000	-		0.070		0.207		-		0.207	-	0.277	-
Subtotal			0.000	-		0.570		4.524		-		4.524	-	5.094	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		6.960		7.257		-		7.257	-	14.217	-

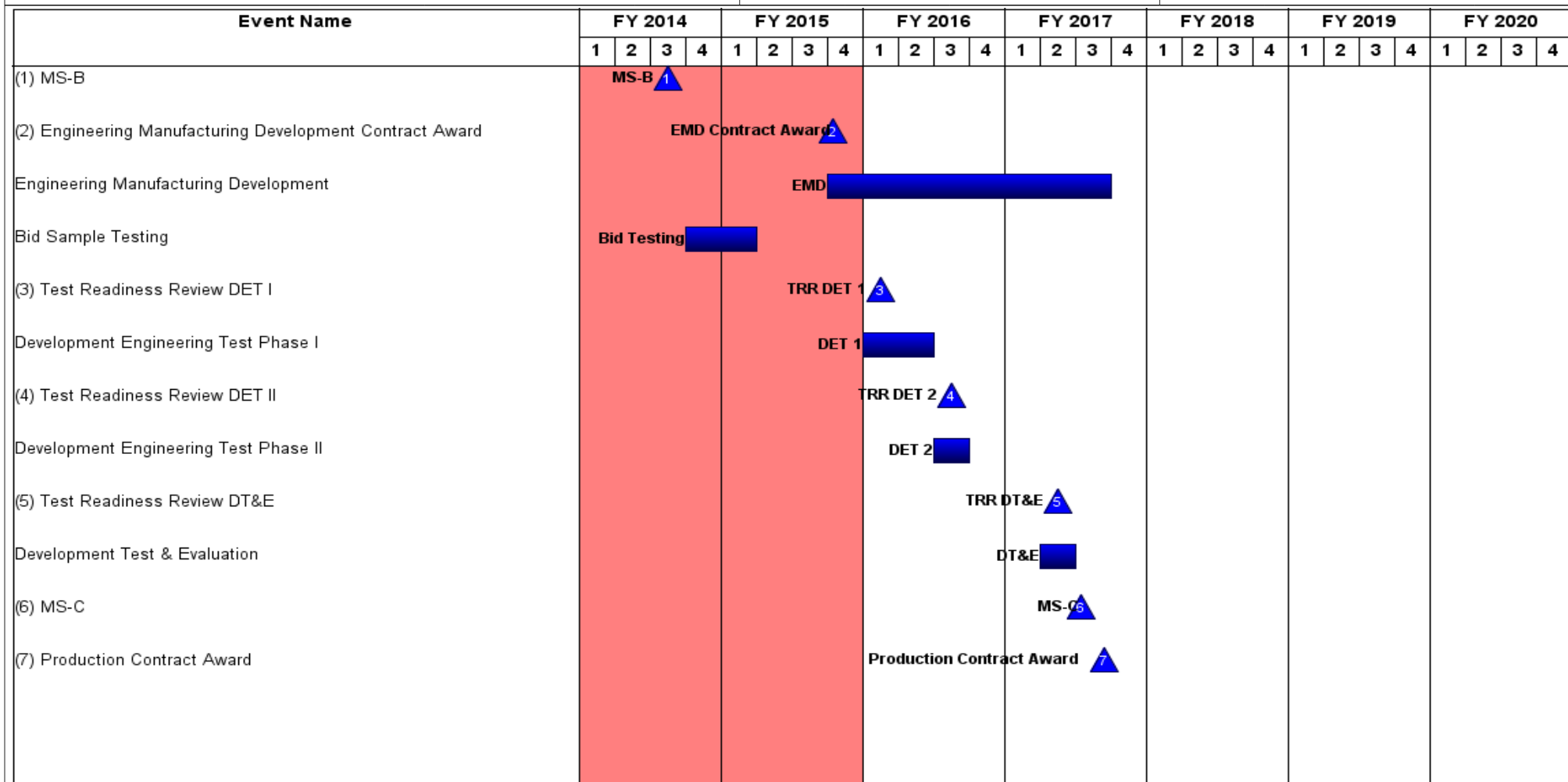
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army							Date: February 2015			
Appropriation/Budget Activity 2040 / 5			R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev			Project (Number/Name) EC1 / 40mm Hi Vel and Low Vel Thermal Training Cartridge				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army **Date:** February 2015

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev	Project (Number/Name) EC1 / 40mm Hi Vel and Low Vel Thermal Training Cartridge
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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) EC1 / <i>40mm Hi Vel and Low Vel Thermal Training Cartridge</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MS-B	3	2014	3	2014
Engineering Manufacturing Development Contract Award	4	2015	4	2015
Engineering Manufacturing Development	4	2015	3	2017
Bid Sample Testing	4	2014	1	2015
Test Readiness Review DET I	1	2016	1	2016
Development Engineering Test Phase I	1	2016	2	2016
Test Readiness Review DET II	3	2016	3	2016
Development Engineering Test Phase II	3	2016	3	2016
Test Readiness Review DT&E	2	2017	2	2017
Development Test & Evaluation	2	2017	2	2017
MS-C	3	2017	3	2017
Production Contract Award	3	2017	3	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EC4 / Non-Standard Simulator Munitions			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EC4: Non-Standard Simulator Munitions	-	-	0.885	0.993	-	0.993	1.291	1.588	1.985	2.085	-	8.827
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project will standardize various pyrotechnic that simulate battlefield effects. The Army's Combat Training Centers (CTCs) are currently using non-standard munitions to replicate both conventional and asymmetric warfare battlefield effects. These modified commercial-off-the-shelf products have not been type classified, material released, and are not safe or sustainable for use by Soldiers. This standardization effort will develop various pyrotechnics/simulators to include but not limited to: Black smoke signature (burning vehicles, buildings, and equipment); Yellow smoke signature (chemical, biological or nuclear effects); Macro pyrotechnics to simulate hostile fire and small Improvised Explosive Devices (IEDs) during mounted operations in urban terrain; Micro pyrotechnics to simulate indoor hostile fire and IED effects that are capable of being integrated into existing facilities; Rocket Propelled Grenade (RPG) on a wire to replicate the flight of a Rocket Propelled Grenade; High Order Blast Effect (HOBE) used to replicate a Vehicle Borne Improvised Explosive Device (VBIED), building explosions, and other significant explosive events; Artillery airburst (LA45) simulator to replicate indirect fire; simulator to replicate a STINGER (LA47) firing; Tracer Fire-back simulator to replicate enemy small arms fire and anti-aircraft fire. Standardization will reduce training costs, eliminate redundancies between systems, and mitigate safety risks associated with realistic scenario based training.

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

	FY 2014	FY 2015	FY 2016
Title: Standardize Special Use Ammunition	-	0.885	0.993
Description: Standardize non-standard pyrotechnic battlefield effects currently used by CTCs .			
FY 2015 Plans: This project will support development and preparation of documentation for Materiel Development Decision (MDD) approval. The following items were identified as required capabilities to simulate battlefield effects: a. Black smoke signature (burning vehicles, buildings, and equipment) that is interoperable with existing launcher configurations. b. Yellow smoke signature to simulate chemical, biological or nuclear effects that is interoperable with existing launcher configurations. c. Macro pyrotechnics to simulate hostile fire and small Improvised Explosive Devices (IED's) during mounted operations in urban terrain. d. Micro pyrotechnics to simulate indoor hostile fire and IED effects that are capable of being integrated into existing facilities. e. RPG on a wire to replicate the flight of a Rocket Propelled Grenade. The RPG signature leaves a smoke trail that gives a launch point location, visible spark signature, along with an audible launch and thrusting sound. f. High Order Blast Effect (HOBE) used to replicate a Vehicle Borne Improvised Explosive Device (VBIED), building explosions, and other significant explosive events. The signature is a large orange or red-colored fireball and smoke.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army		Date: February 2015	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) EC4 / <i>Non-Standard Simulator Munitions</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
g. Artillery airburst simulator to replicate indirect fire that is interoperable with existing launcher configurations. h. Simulator to replicate a MANPAD firing that is interoperable with existing launcher configurations. i. Tracer Fire-back simulator to replicate enemy small arms fire and anti-aircraft fire. Signature is red or green balls of fire. FY 2016 Plans: This project will support the Engineering Manufacturing and Development (EMD) phase for Black Smoke signature (burning vehicles, buildings, and equipment), Artillery airburst simulator and Tracer/STINGER simulators. Review and qualify test data for LA45 and LA47; evaluate Marine Type Classification (TC) and Material Release (MR) data; Conduct test and evaluation; TC and Full Material Release (FMR) for Final Operational Test (FOT) cartridge.			
Accomplishments/Planned Programs Subtotals	-	0.885	0.993

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• Procurement Ammunition, Army: <i>Simulators, Non-Standard, Special Effects for CTCs; SSN E88404</i>	-	-	-	-	-	1.505	1.009	1.029	1.051	-	4.594
Remarks											
D. Acquisition Strategy The Acquisition strategy is under development and will be approved by the Milestone Decision Authority (MDA) once complete.											
E. Performance Metrics N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EC4 / Non-Standard Simulator Munitions			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM Close Combat Systems : PICA TINNY ARSENAL	0.000	-		0.278		0.100	Jan 2016	-		0.100	-	0.378	-
Subtotal			0.000	-		0.278		0.100		-		0.100	-	0.378	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	MIPR	ARDEC : PICA TINNY ARSENAL	0.000	-		0.607		0.790	Jan 2016	-		0.790	-	1.397	-
Subtotal			0.000	-		0.607		0.790		-		0.790	-	1.397	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	ARDEC : Pica tinny	0.000	-		-		0.103	Mar 2016	-		0.103	-	0.103	-
Subtotal			0.000	-		-		0.103		-		0.103	-	0.103	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		0.885		0.993		-		0.993	-	1.878	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity								R-1 Program Element (Number/Name)								Project (Number/Name)												
2040 / 5								PE 0604802A / Weapons and Munitions - Eng Dev								EC4 / Non-Standard Simulator Munitions												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Materiel Development Decision Special Use Ammunition Pyrotechnics					MDD																							
Review/qualify Marine Corps test data for LA45/LA47																												
Evaluate Marine Corps TC/MR																												
(1) IOC Tracer/STINGER Simulator																												
(2) IOC Artillery Airbust Simulator																												
Conduct T&E, TC/MR black smoke cartridge																												
(3) MS C Black Smoke Simulator																												
(4) MS C Yellow Smoke Simulator																												
(5) MS C Force on Force Simulator																												
(6) MS C RPG																												
(7) MS C Micro-Macro																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) EC4 / <i>Non-Standard Simulator Munitions</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Materiel Development Decision Special Use Ammunition Pyrotechnics	2	2015	3	2015
Review/qualify Marine Corps test data for LA45/LA47	1	2016	2	2016
Evaluate Marine Corps TC/MR	2	2016	3	2016
IOC Tracer/STINGER Simulator	4	2016	4	2016
IOC Artillery Airbust Simulator	4	2016	4	2016
Conduct T&E, TC/MR black smoke cartridge	3	2016	4	2016
MS C Black Smoke Simulator	4	2016	4	2016
MS C Yellow Smoke Simulator	2	2017	2	2017
MS C Force on Force Simulator	2	2018	2	2018
MS C RPG	3	2019	3	2019
MS C Micro-Macro	3	2020	3	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EL9 / Ammunitions Logistics Prototyping			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EL9: Ammunitions Logistics Prototyping	-	-	-	2.599	-	2.599	3.509	2.644	1.942	2.339	-	13.033
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification <p>This project supports the future force by improving the distribution, management, reliability and survivability of ammunition through the advanced development, integration, and demonstration of logistics system enablers. These enablers will improve the efficiency and effectiveness of ammunition operations, to include retrograde, while reducing the logistics footprint on the battlefield. Technology areas addressed include handling, distribution, and management (strategic and tactical), prognostics, diagnostics, and asset visibility, explosives safety, and adaptive and environmentally friendly packaging and palletization. The efficient deployment and sustainment of reliable ammunition is vital to success on the battlefield. This project enhances the operational effectiveness of the ammunition logistics system to ensure the distribution of reliable ammunition to the warfighter.</p>												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Title: Munitions Survivability and Logistics Enablers										-	-	2.599
Description: This program will develop ammunition logistics systems that improve munitions survivability and logistics												
FY 2016 Plans: Develop ammunition logistics systems that improve munitions survivability and logistics.												
Accomplishments/Planned Programs Subtotals										-	-	2.599
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy Strategy is under development and will be approved by the MDA once complete. E. Performance Metrics N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EL9 / Ammunitions Logistics Prototyping			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor	C/TBD	TBD : TBD	0.000	-		-		2.000		-		2.000	-	2.000	-
Subtotal			0.000	-		-		2.000		-		2.000	-	2.000	-

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ARDEC	MIPR	Picatinny Arsenal : NJ	0.000	-		-		0.599		-		0.599	-	0.599	-
Subtotal			0.000	-		-		0.599		-		0.599	-	0.599	-

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		2.599		-		2.599	-	2.599	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																				Date: February 2015								
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev										Project (Number/Name) EL9 / Ammunitions Logistics Prototyping								
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Material Development Decision																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev	Project (Number/Name) EL9 / Ammunitions Logistics Prototyping

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Material Development Decision	4	2015	4	2015

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[illegible]

A. Mission Description and Budget Item Justification

no funding until FY20

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

N/A

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EP2 / Individual Assault Munition (IAM)			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
na	C/TBD	na : na	0.001	-		-		-		-		-	-	0.001	-
Subtotal			0.001	-		-		-		-		-	-	0.001	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.001	-	-	-	-	-	-	0.001	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																		Date: February 2015																			
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev								Project (Number/Name) EP2 / Individual Assault Munition (IAM)																			
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NA																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) EP2 / <i>Individual Assault Munition (IAM)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NA	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EP3 / Reduced Range Small Caliber Training Ammunition			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EP3: Reduced Range Small Caliber Training Ammunition	-	-	-	-	-	-	-	6.000	6.800	12.000	-	24.800
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification
no funding until FY18

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

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EP3 / Reduced Range Small Caliber Training Ammunition			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
x	C/TBD	x : x	0.001	-		-		-		-		-		-	-	0.001	-
Subtotal			0.001	-		-		-		-		-		-	-	0.001	-

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.001	-		-		-		-		-	-	0.001	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																		Date: February 2015																			
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev										Project (Number/Name) EP3 / Reduced Range Small Caliber Training Ammunition																	
Event Name										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NA																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev	Project (Number/Name) EP3 / Reduced Range Small Caliber Training Ammunition

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NA	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EP4 / One-Way Lumiscence (OWL) for Small Caliber Ammo			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EP4: One-Way Lumiscence (OWL) for Small Caliber Ammo	-	-	-	-	-	-	-	3.200	2.900	5.800	-	11.900
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification
no funding until FY18

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

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EP4 / One-Way Lumiscence (OWL) for Small Caliber Ammo			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
x	C/TBD	x : x	0.001	-		-		-		-		-		-	0.001	-
Subtotal			0.001	-		-		-		-		-		-	0.001	-

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.001	-		-		-		-		-	-	0.001	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																		Date: February 2015										
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev								Project (Number/Name) EP4 / One-Way Lumiscence (OWL) for Small Caliber Ammo										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NA																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev	Project (Number/Name) EP4 / One-Way Lumiscence (OWL) for Small Caliber Ammo

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NA	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EP5 / Adv Armor-Piercing (ADVAP) for Small Caliber Ammo			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EP5: Adv Armor-Piercing (ADVAP) for Small Caliber Ammo	-	-	-	-	-	-	10.600	9.500	13.900	7.200	-	41.200
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

no funding until FY17

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

N/A

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EP5 / Adv Armor-Piercing (ADVAP) for Small Caliber Ammo			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
x	C/TBD	x : x	0.001	-		-		-		-		-		-	0.001	-
Subtotal			0.001	-		-		-		-		-		-	0.001	-

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.001	-		-		-		-		-	-	0.001	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																			
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev								Project (Number/Name) EP5 / Adv Armor-Piercing (ADVAP) for Small Caliber Ammo																			
Event Name								FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
								1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NA																																			

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev	Project (Number/Name) EP5 / Adv Armor-Piercing (ADVAP) for Small Caliber Ammo

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NA	2	2015	2	2015

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[illegible]

A. Mission Description and Budget Item Justification

no funding until FY17

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

N/A

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev						Project (Number/Name) EP6 / Lightweight Cartridge Case for Small Caliber Ammo			

Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
x	C/TBD	x : x	0.001	-		-		-		-		-	-	0.001	-
Subtotal			0.001	-		-		-		-		-	-	0.001	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.001	-	-	-	-	-	-	0.001	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																		Date: February 2015										
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev								Project (Number/Name) EP6 / Lightweight Cartridge Case for Small Caliber Ammo										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
na																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army		Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) EP6 / <i>Lightweight Cartridge Case for Small Caliber Ammo</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
na	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EP7 / Tunable Pyrotechnic Aircraft Countermeasure Flares			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
EP7: Tunable Pyrotechnic Aircraft Countermeasure Flares	-	-	-	1.000	-	1.000	1.450	4.400	2.000	-	-	8.850
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY 2016: New start for Projects EL9 and EP7; Budget rephasing for project S36.

A. Mission Description and Budget Item Justification

This project will support Integrated System Design (ISD), System Capability (SC) and Manufacturing Process Demonstrations (MPD) on current pyrotechnic munitions and tunable pyrotechnic aircraft counter measures and decoys. The project will also support ISD, SC and MPD on new expendable countermeasure munitions that will protect Army aircraft from advanced and current guided missile threats. Activities include modeling and simulation, flight testing, qualification testing, engineering to reduce size and weight, environmental considerations, safety enhancements, manufacturing enhancements, qualification of other service and foreign munitions that could meet current requirements, product improvements, insertion of new technologies to increase performance, and enhancement of current flare solutions for new and existing aircraft. Systems include impulse cartridges, pen flares, hand held signals, trip flares, simulators, marine markers, smoke pots, smoke grenades, rail road flares and other type of emergency/distress devices, aircraft expendables (to include Radio Frequency (RF) expendables), and primers used in munitions systems.

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

	FY 2014	FY 2015	FY 2016
Title: Improvements to countermeasure flares	-	-	1.000
Description: This program will develop improvements to legacy counter measure flare solutions and qualify for Army use.			
FY 2016 Plans: Modeling and Simulation, engineering and testing to develop alternative timing solutions that increase effectiveness for aircraft expendables, and integrate tunable pyrotechnics.			
Accomplishments/Planned Programs Subtotals	-	-	1.000

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

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0603639A - Tank and Medium Caliber: EB9 - Tunable Pyrotechnic Aircraft Countermeasure Flares	-	0.884	3.000	-	3.000	3.400	-	-	-	-	7.284

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EP7 / Tunable Pyrotechnic Aircraft Countermeasure Flares			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
Remarks											
D. Acquisition Strategy											
The Acquisition strategy is under development and will be approved by the Milestone Decision Authority (MDA) once complete. It is anticipated that these items will be restricted to the National Technology and Industrial Base (NTIB).											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army													Date: February 2015		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) EP7 / Tunable Pyrotechnic Aircraft Countermeasure Flares							
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PM CCS : Picatinny Arsenal	0.000	-		-		0.193		-		0.193	-	0.193	-
Subtotal			0.000	-		-		0.193		-		0.193	-	0.193	-
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	MIPR	ARDEC : Picatinny Arsenal	0.000	-		-		0.607		-		0.607	-	0.607	-
Subtotal			0.000	-		-		0.607		-		0.607	-	0.607	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	MIPR	AED : Redstone Arsenal	0.000	-		-		0.200		-		0.200	-	0.200	-
Subtotal			0.000	-		-		0.200		-		0.200	-	0.200	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		1.000		-		1.000	-	1.000	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015												
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)										
2040 / 5										PE 0604802A / Weapons and Munitions - Eng Dev								EP7 / Tunable Pyrotechnic Aircraft Countermeasure Flares										
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Countermeasure Flare Modeling & Simulation																												
Develop countermeasure solutions																												
Test & Evaluation of countermeasure solutions																												
(1) Incorporate countermeasure solutions into production decision																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) EP7 / <i>Tunable Pyrotechnic Aircraft Countermeasure Flares</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Countermeasure Flare Modeling & Simulation	2	2016	3	2016
Develop countermeasure solutions	3	2016	3	2016
Test & Evaluation of countermeasure solutions	3	2016	4	2016
Incorporate countermeasure solutions into production decision	4	2016	4	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army										Date: February 2015		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) S36 / Precision Guidance Kit			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
S36: Precision Guidance Kit	-	16.770	7.153	9.530	-	9.530	6.966	4.963	5.460	6.453	-	57.295
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This program funds engineering development of precision guidance systems applicable to Indirect Fire artillery weapon systems. The Precision Guidance Kit (PGK) is a Global Positioning System guidance kit with fuzing functions. PGK provides near precision accuracy and effectiveness for 155mm High Explosive artillery projectiles. PGK improves the accuracy of existing artillery ammunition by correcting the trajectory of projectiles to their designated target location. Precision guidance systems will effectively reduce target delivery error reducing the number of rounds required to conduct a fire mission.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: Contractor Engineering and Manufacturing Development									9.926	0.500	6.050	
Description: Contractor Engineering and Manufacturing Development												
FY 2014 Accomplishments: GPS Anti-Jam Development												
FY 2015 Plans: GPS Anti-Jam Development												
FY 2016 Plans: GPS Anti-Jam Development												
Title: Government and Engineering Support									3.760	3.013	2.480	
Description: Continue Engineering Support												
FY 2014 Accomplishments: Engineering Support												
FY 2015 Plans: Engineering Support												
FY 2016 Plans: Engineering Support												
Title: Continue Development/Operational Testing									3.084	3.640	1.000	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Army								Date: February 2015			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) S36 / Precision Guidance Kit			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2014	FY 2015	FY 2016	
Description: Continue Development/Operational Test											
FY 2014 Accomplishments: Development/Operational Test											
FY 2015 Plans: Development/Operational Test											
FY 2016 Plans: Development/Operational Test											
Accomplishments/Planned Programs Subtotals								16.770	7.153	9.530	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• E99250: Procurement of Ammunition Army: Precision Guidance Kit (PGK)	26.466	45.285	55.324	-	55.324	56.108	58.512	60.637	62.363	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
<p>The Precision Guidance Kit (PGK) is a Global Positioning System (GPS) guidance kit with fuzing functions for 155mm High Explosive (HE) artillery projectiles. PGK provides near precision accuracy and effectiveness for 155mm HE projectiles. Using an integrated GPS receiver, the PGK corrects the inherent errors associated with ballistic firing solutions and reduces the number of artillery projectiles required to execute the mission. The current PGK Increment qualified the PGK for the M795 and M549A1 HE projectiles. The Acquisition Strategy/Acquisition Plan for the PGK program was approved by the Milestone Decision Authority on 20 October 2005, subsequently revised and approved on 14 December 2012. Alliant Techsystems (ATK) was competitively awarded the Engineering and Manufacturing Development (EMD) phase in May 2007 following a Technology Development Demonstration. Approval to initiate the procurement of Low Rate Initial Production (LRIP) occurred at Milestone C in March 2013. Initial Operational Test and Evaluation (IOT&E) is planned to be completed by 3Q FY 2015, Full Material Release (FMR) and Full Rate Production (FRP) decisions are planned for 4Q FY 2015 and Initial Operational Capability (IOC) is scheduled for 1Q FY 2016. Continued development efforts support integration of GPS Anti-Jam capability and M-Code compliance with Public Law 111-383 Sec 913. A 4 channel anti-jam capability is currently being developed by ATK for PGK under The DoD Ordnance Technology Consortium (DOTC) initiative.</p>											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) S36 / Precision Guidance Kit					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support	MIPR	Camber : Mt Arlington, NJ	1.849	0.087	Jun 2014	-		-		-		-	-	1.936	1.909
LNO Support - Ft. Sill	MIPR	DCMA MANASSAS : Manassas, VA	0.000	0.065	May 2014	-		-		-		-	-	0.065	-
Miscellaneous Support Contract	MIPR	MITRE Corporation : Fort Monmouth, NJ	0.600	-		-		-		-		-	-	0.600	0.600
PGK Parallel Studies and Analysis Support -	MIPR	Command and Control Directorate : Ft Monmouth, NJ	0.300	-		-		-		-		-	-	0.300	0.300
Subtotal			2.749	0.152		-		-		-		-	-	2.901	2.809
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PGK TD Contract	C/CPAF	Alliant Techsystems (ATK) : Plymouth, MN	5.279	-		-		-		-		-	-	5.279	5.279
PGK TD Contract	C/CPAF	BAE : Minneapolis, MN	3.103	-		-		-		-		-	-	3.103	3.103
Soft Recovery Modules	MIPR	SubSystems Technology : Rosslyn, VA	0.116	-		-		-		-		-	-	0.116	0.116
PGK EMD & Phase 1-2 (Reliability Failure/Root Cause Analysis)	C/CPAF	Alliant Techsystems (ATK) : Plymouth, MN	53.947	-		-		-		-		-	-	53.947	53.947
PGK EMD - Phase 3a to 5	C/FFP	Alliant Techsystems (ATK) : Plymouth, MN	24.102	0.236	Apr 2014	-		-		-		-	-	24.338	24.474
DOTC - PGK GPS Anti-Jam	C/CPFF	Alliant Techsystems (ATK) : Plymouth, MN	7.626	8.597	May 2014	0.500	Jul 2015	6.050	Jul 2016	-		6.050	Continuing	Continuing	21.123

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) S36 / Precision Guidance Kit					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DOTC - GDOTS - Engineering & Technology Assessment. Low Cost Roll Control Solutions	C/CPFF	General Dynamics Ordnance & Tactical Systems : Bothell, WA	1.000	1.093	Jul 2014	-		-		-		-	-	2.093	0.500
DOTC - BAE Systems - Engineering & Technology Assessment. Low Cost Course Correction solutions.	C/CPFF	BAE/Rokar : Minneapolis, MN	0.500	-		-		-		-		-	-	0.500	0.500
High Angle Software Configuration	C/CPFF	Raytheon : Ft Wayne, IN	0.105	-		-		-		-		-	-	0.105	-
Subtotal			95.778	9.926		0.500		6.050		-		6.050	-	-	109.042
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Office	PO	PM CAS : Picatinny, NJ	9.805	0.370	Dec 2013	0.903	Dec 2014	0.500	Dec 2015	-		0.500	Continuing	Continuing	11.494
Government Engineering Support	MIPR	ARDEC : Picatinny, NJ	26.580	2.945	Jan 2014	1.840	Jan 2015	1.730	Jan 2016	-		1.730	Continuing	Continuing	32.136
Jammer Support	MIPR	Electronic Proving Ground : Ft Huachuca, AZ	0.000	0.288	Jul 2014	0.250	Jun 2015	0.250	Jun 2016	-		0.250	-	0.788	-
ATEC Support	MIPR	Army Test and Evaluation Command : Aberdeen, MD	0.000	0.005	Dec 2014	0.020	Jun 2015	-		-		-	-	0.025	-
Subtotal			36.385	3.608		3.013		2.480		-		2.480	-	-	43.630

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Army												Date: February 2015			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev				Project (Number/Name) S36 / Precision Guidance Kit					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Air Gun/ Railgun Testing	MIPR	ARDEC : Picatinny, NJ	0.317	-		-		-		-		-	-	0.317	0.317
Other Development Testing	MIPR	Various : Various	1.725	-		-		-		-		-	-	1.725	1.725
System Development Testing Increment 1	MIPR	Yuma Proving Ground : Yuma, AZ	10.442	-		-		-		-		-	-	10.442	10.487
Limited User Test	MIPR	Yuma Proving Ground : Yuma, AZ	0.080	1.354	Nov 2013	-		-		-		-	-	1.434	-
Development Testing for GPS Anti-Jam	MIPR	Yuma Proving Ground : Yuma, AZ	0.000	0.880	Jun 2014	0.640	Aug 2015	1.000	Jul 2016	-		1.000	-	2.520	3.606
Initial Operational Test & Evaluation - Increment 1	MIPR	Yuma Proving Ground : Yuma, AZ	0.000	-		3.000	Feb 2015	-		-		-	-	3.000	3.500
Cold Region Testing	MIPR	Cold Region Test Center : Yuma, AZ	0.000	0.600	Sep 2014	-		-		-		-	-	0.600	0.900
Airdrop Testing	MIPR	Yuma Proving Ground : Yuma, AZ	0.000	0.250	May 2014	-		-		-		-	-	0.250	0.200
Subtotal			12.564	3.084		3.640		1.000		-		1.000	-	20.288	20.735
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			147.476	16.770		7.153		9.530		-		9.530	-	-	176.216
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Army																Date: February 2015																
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604802A / Weapons and Munitions - Eng Dev										Project (Number/Name) S36 / Precision Guidance Kit												
Event Name	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Engineering & Manufacturing Development	EMD																															
GPS Anti-Jam Development	GPS Anti-Jam Development																															
M - Code Development																	M - Code Development															
Limited User Test	LUT																															
First Article Test (FAT)					FAT																											
Initial Operational Test and Evaluation (IOT&E)					IOT&E																											
(1) Full Materiel Release / Full Rate Production									1 FMR / FRP																							
(2) Initial Operational Capability (IOC)									2 IOC																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Army			Date: February 2015
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / <i>Weapons and Munitions - Eng Dev</i>	Project (Number/Name) S36 / <i>Precision Guidance Kit</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Engineering & Manufacturing Development	4	2009	4	2014
GPS Anti-Jam Development	4	2013	4	2017
M - Code Development	1	2018	4	2020
Limited User Test	2	2014	2	2014
First Article Test (FAT)	1	2015	1	2015
Initial Operational Test and Evaluation (IOT&E)	2	2015	3	2015
Full Materiel Release / Full Rate Production	4	2015	4	2015
Initial Operational Capability (IOC)	1	2016	1	2016

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