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

February 2016

Army

Justification Book of

Research, Development, Test & Evaluation, Army

RDT&E − Volume III, Budget Activity 6

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY

APPROPRIATION LANGUAGE

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

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

Intentionally Left Blank

FY 2017 RDT&E, ARMY
PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

Introduction and Explanation of Contents

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

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

A. New Start Programs:

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

B. Program Element/Project Restructures:

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

C. Developmental Transitions:

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

D. Program Terminations:

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

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

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

14 Jan 2016

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

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

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

14 Jan 2016

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

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

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

14 Jan 2016

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

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

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

14 Jan 2016

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

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

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
19	0602709A	Night Vision Technology	02	44,694	38,807		38,807	36,079		36,079	U
20	0602712A	Countermine Systems	02	28,597	36,568		36,568	26,497		26,497	U
21	0602716A	Human Factors Engineering Technology	02	23,434	23,681		23,681	23,671		23,671	U
22	0602720A	Environmental Quality Technology	02	15,288	20,850		20,850	22,151		22,151	U
23	0602782A	Command, Control, Communications Technology	02	33,117	36,160		36,160	37,803		37,803	U
24	0602783A	Computer and Software Technology	02	10,514	12,656		12,656	13,811		13,811	U
25	0602784A	Military Engineering Technology	02	66,582	80,909		80,909	67,416		67,416	U
26	0602785A	Manpower/Personnel/Training Technology	02	21,280	24,735		24,735	26,045		26,045	U
27	0602786A	Warfighter Technology	02	31,597	39,295		39,295	37,403		37,403	U
28	0602787A	Medical Technology	02	74,285	76,853		76,853	77,111		77,111	U
		Applied Research		964,085	1,092,885		1,092,885	907,574		907,574	
29	0603001A	Warfighter Advanced Technology	03	75,833	55,973		55,973	38,831		38,831	U
30	0603002A	Medical Advanced Technology	03	104,997	108,584		108,584	68,365		68,365	U
31	0603003A	Aviation Advanced Technology	03	99,762	103,136		103,136	94,280		94,280	U
32	0603004A	Weapons and Munitions Advanced Technology	03	72,176	82,663		82,663	68,714		68,714	U
33	0603005A	Combat Vehicle and Automotive Advanced Technology	03	143,606	135,571		135,571	122,132		122,132	U
34	0603006A	Space Application Advanced Technology	03	6,664	5,554		5,554	3,904		3,904	U
35	0603007A	Manpower, Personnel and Training Advanced Technology	03	11,677	12,636		12,636	14,417		14,417	U

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
36	0603008A	Electronic Warfare Advanced Technology	03	43,416							U
37	0603009A	TRACTOR HIKE	03	7,492	7,502		7,502	8,074		8,074	U
38	0603015A	Next Generation Training & Simulation Systems	03	16,103	17,425		17,425	18,969		18,969	U
39	0603020A	TRACTOR ROSE	03	14,483	11,912		11,912	11,910		11,910	U
40	0603125A	Combating Terrorism - Technology Development	03	23,334	33,520		33,520	27,686		27,686	U
41	0603130A	TRACTOR NAIL	03	3,440	2,381		2,381	2,340		2,340	U
42	0603131A	TRACTOR EGGS	03	2,406	2,431		2,431	2,470		2,470	U
43	0603270A	Electronic Warfare Technology	03	27,238	32,874		32,874	27,893		27,893	U
44	0603313A	Missile and Rocket Advanced Technology	03	78,302	104,449		104,449	52,190		52,190	U
45	0603322A	TRACTOR CAGE	03	11,105	10,999		10,999	11,107		11,107	U
46	0603461A	High Performance Computing Modernization Program	03	214,614	222,159		222,159	177,190		177,190	U
47	0603606A	Landmine Warfare and Barrier Advanced Technology	03	12,795	13,966		13,966	17,451		17,451	U
48	0603607A	Joint Service Small Arms Program	03	7,055	5,105		5,105	5,839		5,839	U
49	0603710A	Night Vision Advanced Technology	03	46,056	40,929		40,929	44,468		44,468	U
50	0603728A	Environmental Quality Technology Demonstrations	03	11,311	14,727		14,727	11,137		11,137	U
51	0603734A	Military Engineering Advanced Technology	03	17,124	26,845		26,845	20,684		20,684	U
52	0603772A	Advanced Tactical Computer Science and Sensor Technology	03	38,098	38,147		38,147	44,239		44,239	U

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
53	0603794A	C3 Advanced Technology	03		37,816		37,816	35,775		35,775	U
		Advanced Technology Development		1,089,087	1,127,304		1,127,304	930,065		930,065	
54	0603305A	Army Missle Defense Systems Integration	04	25,672	29,347		29,347	9,433		9,433	U
55	0603308A	Army Space Systems Integration	04	13,804	25,061		25,061	23,056	9,375	32,431	U
56	0603619A	Landmine Warfare and Barrier - Adv Dev	04		45,757		45,757	72,117		72,117	U
57	0603627A	Smoke, Obscurant and Target Defeating Sys-Adv Dev	04		13,426		13,426	28,244		28,244	U
58	0603639A	Tank and Medium Caliber Ammunition	04	25,317	46,749		46,749	40,096		40,096	U
59	0603747A	Soldier Support and Survivability	04	8,633	2,801	1,500	4,301	10,506		10,506	U
60	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	9,255	13,472		13,472	15,730		15,730	U
61	0603774A	Night Vision Systems Advanced Development	04	3,521	7,292		7,292	10,321		10,321	U
62	0603779A	Environmental Quality Technology - Dem/Val	04	7,529	8,813		8,813	7,785		7,785	U
63	0603790A	NATO Research and Development	04	2,839	6,075		6,075	2,300		2,300	U
64	0603801A	Aviation - Adv Dev	04					10,014		10,014	U
65	0603804A	Logistics and Engineer Equipment - Adv Dev	04	13,188	21,233		21,233	20,834		20,834	U
66	0603807A	Medical Systems - Adv Dev	04	22,825	31,962		31,962	33,503		33,503	U
67	0603827A	Soldier Systems - Advanced Development	04	9,194	22,994		22,994	31,120		31,120	U
68	0604100A	Analysis Of Alternatives	04	9,685	9,805		9,805	6,608		6,608	U

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
69	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04					35,132		35,132	U
70	0604115A	Technology Maturation Initiatives	04	43,083	35,917		35,917	70,047		70,047	U
71	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	11,447	30,058		30,058	83,279		83,279	U
72	0604319A	Indirect Fire Protection Capability Increment 2-Intercept (IFPC2)	04	92,475	155,361		155,361				U
73	0305251A	Cyberspace Operations Forces and Force Support	04					40,510		40,510	U
		Advanced Component Development & Prototypes		298,467	506,123	1,500	507,623	550,635	9,375	560,010	
74	0604201A	Aircraft Avionics	05	39,583	18,639		18,639	83,248		83,248	U
75	0604270A	Electronic Warfare Development	05	5,792	18,843		18,843	34,642		34,642	U
76	0604280A	Joint Tactical Radio	05	9,454	4,546		4,546				U
77	0604290A	Mid-tier Networking Vehicular Radio (MNVR)	05	9,355	8,763		8,763	12,172		12,172	U
78	0604321A	All Source Analysis System	05	5,532	4,309		4,309	3,958		3,958	U
79	0604328A	TRACTOR CAGE	05	19,929	15,138		15,138	12,525		12,525	U
80	0604601A	Infantry Support Weapons	05	36,826	89,661		89,661	66,943		66,943	U
81	0604604A	Medium Tactical Vehicles	05	202							U
82	0604611A	JAVELIN	05	4,006	3,945		3,945	20,011		20,011	U
83	0604622A	Family of Heavy Tactical Vehicles	05	12,768				11,429		11,429	U
84	0604633A	Air Traffic Control	05	17,066	10,076		10,076	3,421		3,421	U
85	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05	2,663	15,374		15,374	39,282		39,282	U

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
86	0604642A	Light Tactical Wheeled Vehicles	05					494		494	U
87	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05					9,678		9,678	U
88	0604710A	Night Vision Systems - Eng Dev	05	58,997	67,582		67,582	84,519		84,519	U
89	0604713A	Combat Feeding, Clothing, and Equipment	05	2,983	1,763		1,763	2,054		2,054	U
90	0604715A	Non-System Training Devices - Eng Dev	05	8,775	27,155		27,155	30,774	33	30,807	U
91	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	15,294	34,569		34,569	53,332		53,332	U
92	0604742A	Constructive Simulation Systems Development	05	4,394	23,364		23,364	17,887		17,887	U
93	0604746A	Automatic Test Equipment Development	05	10,685	8,960		8,960	8,813		8,813	U
94	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	9,699	9,138		9,138	10,487		10,487	U
95	0604780A	Combined Arms Tactical Trainer (CATT) Core	05	33,422	21,622		21,622	15,068		15,068	U
96	0604798A	Brigade Analysis, Integration and Evaluation	05	82,957	99,242		99,242	89,716		89,716	U
97	0604802A	Weapons and Munitions - Eng Dev	05	17,312	21,379		21,379	80,365		80,365	U
98	0604804A	Logistics and Engineer Equipment - Eng Dev	05	23,652	46,039		46,039	75,098		75,098	U
99	0604805A	Command, Control, Communications Systems - Eng Dev	05	5,116	2,683		2,683	4,245		4,245	U
100	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	29,441	45,412		45,412	41,124		41,124	U
101	0604808A	Landmine Warfare/Barrier - Eng Dev	05	53,579	55,215		55,215	39,630		39,630	U

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

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

14 Jan 2016

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

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

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
119	0605041A	Defensive CYBER Tool Development	05					33,836		33,836	U
120	0605042A	Tactical Network Radio Systems (Low-Tier)	05					18,824		18,824	U
121	0605047A	Contract Writing System	05					20,663		20,663	U
122	0605051A	Aircraft Survivability Development	05		78,112		78,112	41,133	73,110	114,243	U
123	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05					83,995		83,995	U
124	0605350A	WIN-T Increment 3 - Full Networking	05	108,851	33,515		33,515				U
125	0605380A	AMF Joint Tactical Radio System (JTRS)	05	6,616	11,455		11,455	5,028		5,028	U
126	0605450A	Joint Air-to-Ground Missile (JAGM)	05	80,585	83,054		83,054	42,972		42,972	U
127	0605456A	PAC-3/MSE Missile	05	33,709	2,272		2,272				U
128	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	147,250	222,075		222,075	252,811		252,811	U
129	0605625A	Manned Ground Vehicle	05	47,265	39,247		39,247				U
130	0605626A	Aerial Common Sensor	05	20,328	2		2				U
131	0605766A	National Capabilities Integration (MIP)	05	18,254	10,599		10,599	4,955		4,955	U
132	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	43,302	32,486		32,486	11,530		11,530	U
133	0605830A	Aviation Ground Support Equipment	05	9,655	13,880		13,880	2,142		2,142	U
134	0210609A	Paladin Integrated Management (PIM)	05	77,210	152,288		152,288	41,498		41,498	U
135	0303032A	TROJAN - RH12	05	983	5,022		5,022	4,273		4,273	U

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
136	0304270A	Electronic Warfare Development	05	8,961	12,686		12,686	14,425		14,425	U
		System Development & Demonstration		1,604,756	2,085,147		2,085,147	2,265,094	84,043	2,349,137	
137	0604256A	Threat Simulator Development	06	21,691	27,535		27,535	25,675		25,675	U
138	0604258A	Target Systems Development	06	9,778	16,684		16,684	19,122		19,122	U
139	0604759A	Major T&E Investment	06	54,281	66,580		66,580	84,777		84,777	U
140	0605103A	Rand Arroyo Center	06	19,817	19,382		19,382	20,658		20,658	U
141	0605301A	Army Kwajalein Atoll	06	169,699	203,905		203,905	236,648		236,648	U
142	0605326A	Concepts Experimentation Program	06	18,757	19,430		19,430	25,596		25,596	U
143	0605502A	Small Business Innovative Research	06	172,658							U
144	0605601A	Army Test Ranges and Facilities	06	271,377	279,896		279,896	293,748		293,748	U
145	0605602A	Army Technical Test Instrumentation and Targets	06	43,961	51,550		51,550	52,404		52,404	U
146	0605604A	Survivability/Lethality Analysis	06	33,210	33,246		33,246	38,571		38,571	U
147	0605606A	Aircraft Certification	06	4,667	4,760		4,760	4,665		4,665	U
148	0605702A	Meteorological Support to RDT&E Activities	06	6,289	8,303		8,303	6,925		6,925	U
149	0605706A	Materiel Systems Analysis	06	20,578	20,403		20,403	21,677		21,677	U
150	0605709A	Exploitation of Foreign Items	06	8,418	10,396		10,396	12,415		12,415	U
151	0605712A	Support of Operational Testing	06	48,953	49,337		49,337	49,684		49,684	U
152	0605716A	Army Evaluation Center	06	54,468	52,694		52,694	55,905		55,905	U
153	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	1,081	938		938	7,959		7,959	U
154	0605801A	Programwide Activities	06	63,687	60,319		60,319	51,822		51,822	U

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
155	0605803A	Technical Information Activities	06	28,781	28,478		28,478	33,323		33,323	U
156	0605805A	Munitions Standardization, Effectiveness and Safety	06	62,168	64,604		64,604	40,545		40,545	U
157	0605857A	Environmental Quality Technology Mgmt Support	06	2,512	3,186		3,186	2,130		2,130	U
158	0605898A	Management HQ - R&D	06	48,951	48,955		48,955	49,885		49,885	U
159	0303260A	Defense Military Deception Initiative	06					2,000		2,000	U
160	0909999A	Financing for Cancelled Account Adjustments	06	233							U
	RDT&E	Management Support		1,166,015	1,070,581		1,070,581	1,136,134		1,136,134	
161	0603778A	MLRS Product Improvement Program	07	17,852	18,397		18,397	9,663		9,663	U
162	0603813A	TRACTOR PULL	07		9,461		9,461	3,960		3,960	U
163	0605024A	Anti-Tamper Technology Support	07					3,638		3,638	U
164	0607131A	Weapons and Munitions Product Improvement Programs	07		4,945		4,945	14,517		14,517	U
165	0607133A	TRACTOR SMOKE	07		7,569		7,569	4,479		4,479	U
166	0607134A	Long Range Precision Fires (LRPF)	07					39,275		39,275	U
167	0607135A	Apache Product Improvement Program	07	86,099	65,562		65,562	66,441		66,441	U
168	0607136A	Blackhawk Product Improvement Program	07	48,406	66,653		66,653	46,765		46,765	U
169	0607137A	Chinook Product Improvement Program	07	35,424	32,407		32,407	91,848		91,848	U
170	0607138A	Fixed Wing Product Improvement Program	07	819	1,151		1,151	796		796	U
171	0607139A	Improved Turbine Engine Program	07	49,328	51,164		51,164	126,105		126,105	U

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

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

14 Jan 2016

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

Line No	Program Element Number	Item	Act	FY 2015 (Base & OCO)	FY 2016 Base Enacted	FY 2016 OCO Enacted	FY 2016 Total Enacted	FY 2017 Base	FY 2017 OCO	FY 2017 Total	Sec
172	0607140A	Emerging Technologies from NIE	07	4,916	2,481		2,481	2,369		2,369	U
173	0607141A	Logistics Automation	07	3,513	1,673		1,673	4,563		4,563	U
174	0607665A	Family of Biometrics	07	1,332	13,237		13,237	12,098		12,098	U
175	0607865A	Patriot Product Improvement	07	57,962	89,816		89,816	49,482		49,482	U
176	0202429A	Aerostat Joint Project - COCOM Exercise	07	43,248	10,565		10,565	45,482		45,482	U
177	0203726A	Adv Field Artillery Tactical Data System	07	1,224							U
178	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	33,996	35,719		35,719	30,455		30,455	U
179	0203735A	Combat Vehicle Improvement Programs	07	297,423	354,667		354,667	316,857		316,857	U
180	0203740A	Maneuver Control System	07	43,453	15,408		15,408	4,031		4,031	U
181	0203744A	Aircraft Modifications/Product Improvement Programs	07	40				35,793		35,793	U
182	0203752A	Aircraft Engine Component Improvement Program	07	372	364		364	259		259	U
183	0203758A	Digitization	07	5,765	4,361		4,361	6,483		6,483	U
184	0203801A	Missile/Air Defense Product Improvement Program	07	4,917	3,154		3,154	5,122		5,122	U
185	0203802A	Other Missile Product Improvement Programs	07	40,468	35,951		35,951	7,491		7,491	U
186	0203808A	TRACTOR CARD	07	19,347	34,686		34,686	20,333		20,333	U
187	0205402A	Integrated Base Defense - Operational System Dev	07	4,196	10,750		10,750				U
188	0205410A	Materials Handling Equipment	07	802	402		402	124		124	U

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

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

14 Jan 2016

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

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

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

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

14 Jan 2016

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

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

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

Table of Contents

Program Element Table of Contents (by Budget Activity then Line Item Number)

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

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

Program Element Table of Contents (Alphabetically by Program Element Title)

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0604256A / *Threat Simulator Development*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	21.691	27.535	25.675	-	25.675	21.232	22.215	22.957	23.568	-	-
976: *Army Threat Sim (ATS)*	-	21.691	27.535	25.675	-	25.675	21.232	22.215	22.957	23.568	-	-

Note

Threat Battle Command Force (TBCF) is a new start in FY17. Integrated Threat Force (ITF) ends in FY17.

A. Mission Description and Budget Item Justification

This program supports the design, development, acquisition, integration and fielding of realistic mobile threat simulators and realistic threat simulation products utilized in Army training and developmental and operational tests. Project originally funded simulators representing Soviet equipment, but scope was expanded to address emerging world threats. Army Threat Simulator and Threat Simulation products are utilized to populate test battlefields for U.S. Army Test and Evaluation Command (ATEC), to conduct developmental and operational tests, and to support Program Executive Office (PEO) required user testing in System Integration Laboratories and hardware/simulation in-the-loop facilities. Army threat simulator and threat simulation products developed or fielded under this program support Army-wide, non-system specific threat product requirements. Each capability is pursued in concert and coordination with existing Army and tri-service capabilities to eliminate duplication of products and services, while providing the proper mix of resources needed to support Army testing and training. These battlefield simulators represent systems (e.g. missile systems, command, control and communications systems, electronic warfare systems, etc.) that are used to portray a realistic threat environment during testing of U.S. weapon systems. Simulator development is responsive to Office of the Secretary of Defense and General Accounting Office guidance for the Army to conduct operational testing in a realistic threat environment. Actual threat equipment is acquired when appropriate (in lieu of development) and total package fielding is still required (i.e., instrumentation, operations and maintenance, manuals, new equipment training, etc.). Threat simulator development is accomplished under the auspices of the Project Manager for Instrumentation, Targets and Threat Simulators (PM ITTS) and the Director, Operational Test and Evaluation, Threat Simulator Investment Working Group.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	22.057	20.035	23.509	-	23.509
Current President's Budget	21.691	27.535	25.675	-	25.675
Total Adjustments	-0.366	7.500	2.166	-	2.166
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	7.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.366	-			
• Adjustments to Budget Years	-	-	2.166	-	2.166

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2015	FY 2016
Project: 976: *Army Threat Sim (ATS)*		
Congressional Add: *Integrated Threat Distributed Cyber Environments*	-	7.500
Congressional Add Subtotals for Project: 976	-	7.500
Congressional Add Totals for all Projects	-	7.500

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604256A / *Threat Simulator Development*	Project (Number/Name) 976 / *Army Threat Sim (ATS)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
976: *Army Threat Sim (ATS)*	-	21.691	27.535	25.675	-	25.675	21.232	22.215	22.957	23.568	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Threat Battle Command Force (TBCF) is a new start in FY17. Integrated Threat Force (ITF) ends in FY17.

A. Mission Description and Budget Item Justification

This program supports the design, development, acquisition, integration and fielding of realistic mobile threat simulators and realistic threat simulation products utilized in Army training and developmental and operational tests. Project originally funded simulators representing Soviet equipment, but scope was expanded to address emerging world threats. Army Threat Simulator and Threat Simulation products are utilized to populate test battlefields for U.S. Army Test and Evaluation Command (ATEC), to conduct developmental and operational tests, and to support Program Executive Office (PEO) required user testing in System Integration Laboratories and hardware/simulation in-the-loop facilities. Army threat simulator and threat simulation products developed or fielded under this program support Army-wide, non-system specific threat product requirements. Each capability is pursued in concert and coordination with existing Army and tri-service capabilities to eliminate duplication of products and services, while providing the proper mix of resources needed to support Army testing and training. These battlefield simulators represent systems (e.g. missile systems, command, control and communications systems, electronic warfare systems, etc.) that are used to portray a realistic threat environment during testing of U.S. weapon systems. Simulator development is responsive to Office of the Secretary of Defense and General Accounting Office guidance for the Army to conduct operational testing in a realistic threat environment. Actual threat equipment is acquired when appropriate (in lieu of development) and total package fielding is still required (i.e., instrumentation, operations and maintenance, manuals, new equipment training, etc.). Threat simulator development is accomplished under the auspices of the Project Manager for Instrumentation, Targets and Threat Simulators (PM ITTS) and the Director, Operational Test and Evaluation, Threat Simulator Investment Working Group.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Network Exploitation Test Tool (NETT).	3.776	3.788	3.883
Description: Continues Engineering Manufacturing and Development (EMD) for the NETT as a comprehensive Computer Network Operations (CNO) tool. ***FY 2015 Accomplishments:*** Continued EMD for the NETT. NETT will be a comprehensive Computer Network Operations (CNO) tool, designed for T&E, to portray evolving hostile and malicious Threat effects within the cyber domain. The program provides an integrated suite of open-source/open-method exploitation tools, which will be integrated with robust reporting and instrumentation capabilities. NETT issued by Threat CNO teams to replicate the tactics of state and non-state Threat and will be supported by a robust CNO development environment. The Cyber domain will be the most rapidly changing domain in which our systems operate. The NETT program researched new capabilities and used an in-depth process to clean, fix, and integrate required Threat tools, tactics,			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*	**Project (Number/Name)** 976 / *Army Threat Sim (ATS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
and techniques that were needed during T&E. Focus areas included continued Threat integration, instrumentation, distributed collaboration, and remote agent development. ***FY 2016 Plans:*** Continues EMD for the NETT. NETT will be a comprehensive Computer Network Operations (CNO) tool, designed for T&E, to portray evolving hostile and malicious Threat effects within the cyber domain. The program provides an integrated suite of open-source/open-method exploitation tools, which will be integrated with robust reporting and instrumentation capabilities. NETT issued by Threat CNO teams to replicate the tactics of state and non-state Threat and will be supported by a robust CNO development environment. The Cyber domain will be the most rapidly changing domain in which our systems operate. The NETT program to research new capabilities and to use an in-depth process to clean, fix, and integrate required Threat tools, tactics, and techniques that are needed during T&E. Focus areas to include continued Threat integration, instrumentation, distributed collaboration, and remote agent development. ***FY 2017 Plans:*** Will continue EMD for the NETT. NETT will be a comprehensive Computer Network Operations (CNO) tool, designed for T&E, to portray evolving hostile and malicious Threat effects within the cyber domain. The program will provide an integrated suite of open-source/open-method exploitation tools which will be integrated with robust reporting and instrumentation capabilities. NETT will be used by Threat CNO teams to replicate the tactics of state and non-state Threat and will be supported by a robust CNO development environment. The Cyber domain will be the most rapidly changing domain in which our systems operate. The NETT program will research these new capabilities and will use an in-depth process to clean, fix, and integrate required Threat tools, tactics, and techniques that will be needed during T&E. Focus areas will include continued Threat integration, instrumentation, distributed collaboration between multiple users, targets and attack visualization, data collection and remote agent development.			
Title: Threat Systems Management Office's (TSMO) Threat Operations ***Description:*** TSMO's Threat Operations program manages, maintains, and sustains a mission ready suite of threat systems within the Army's Threat inventory. ***FY 2015 Accomplishments:*** The Threat Operations program funded the operation, maintenance, management, and sustainment capability for Threat systems used to portray a realistic threat environment during Army testing and training within the Army's Threat inventory to support multiple Army test events including (Network Integration Evaluation - NIE/Capabilities Integration Evaluation - CIE) and anticipated excursion test events for numerous Systems Under Test (SUT)/Programs of Record (POR) currently identified through FY16. FY15 funding provides for acquisition life cycle management support and operation, maintenance, spares, new equipment	6.472	2.959	3.395

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*	**Project (Number/Name)** 976 / *Army Threat Sim (ATS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
training, special tools and instrumentation, additional DIACAP updates, etc, of new threat systems fielded into the Army's Threat inventory. ***FY 2016 Plans:*** The Threat Operations program funds the operation, maintenance, management, and sustainment capability for Threat systems used to portray a realistic threat environment during Army testing and training within the Army's Threat inventory in order to support multiple Army test events including (Network Integration Evaluation - NIE/Army Warfighter Assessments - AWA) and anticipated excursion test events for numerous Systems Under Test (SUT)/Programs of Record (POR) currently identified through FY16. ***FY 2017 Plans:*** The Threat Operations program will fund the operation, maintenance, management, and sustainment capability for Threat systems used to portray a realistic threat environment during Army testing and training within the Army's Threat inventory in order to support multiple Army test events including (Network Integration Evaluation - NIE/Army Warfighter Assessments - AWA) and anticipated excursion test events for numerous Systems Under Test (SUT)/Programs of Record (POR) currently identified through FY17.			
Title: Threat Intelligence and Electronic Warfare Environment (TIEW ENV). ***Description:*** Completes EMD for the TIEW ENV to simulate Electronic Warfare capabilities. ***FY 2015 Accomplishments:*** Completes EMD for the TIEW ENV: The TIEW ENV supports the establishment of a wrap-around threat environment required to evaluate, demonstrate, and employ the Electronic Warfare (EW) capabilities of Enemy Forces in simulated real-world test/ training events. The TIEW ENV provides the capability to import vignettes, establish virtual entities, connect live assets, and interact between the live, virtual, and constructive environments. The TIEW ENV fully integrates with the Intergrated Threat Force (ITF) to enable Opposing Forces (OPFOR) command of threat EW assets across Live, Virtual, and Constructive (LVC) domains. FY15 funding will develop Intelligence, Surveillance, and Reconnaissance (ISR) & Camouflage, Concealment, Deception and Obscurants (CCD&O) models. In addition, FY15 funding will continue integration, via ITF, the Threat Unmanned Device and the Network Exploitation Test Tool (NETT). FY15 funding will complete this program.	3.736	-	-
Title: Integrated Threat Force (ITF), formerly named Threat Battle Command Center (TBCC) ***Description:*** Continues the EMD phase for the ITF program to continue hardware/software development and threat systems integration in support to the build-out of the threat force architecture. ***FY 2015 Accomplishments:***	3.481	3.823	1.965

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*	**Project (Number/Name)** 976 / *Army Threat Sim (ATS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Initiated the EMD phase for Increment 4 of the ITF program to enhance the ITF's Threat Battle Command applications, the Command, Control and Communications (C3) interfaces with the Increment 1 - 3 threat systems, as well as enhance the Command and Control (C2) functionality of the Threat Battle Command Center (TBCC). FY15 supports the initial design and development of distributed C2 functionality from the TBCC. ***FY 2016 Plans:*** Continues the EMD phase for Increment 4 of the ITF program to enhance the ITF's Threat Battle Command applications, the C3 interfaces with the Increment 1 - 3 threat systems as well as enhance the C2 functionality of the Threat Battle Command Center (TBCC). FY16 will support the continued design and development of distributed C2 functionality from the TBCC. ***FY 2017 Plans:*** Will continue the EMD phase for Increment 4 of the ITF program to enhance the ITF's Threat Battle Command applications, the C3 interfaces with the Increment 1 - 3 threat systems as well as enhance the C2 functionality of the Threat Battle Command Center (TBCC). FY17 funding is expected to finish the design and development of distributed C2 functionality and fulfill the KPPs for Increment 4.			
Title: Threat Computer Network Operations Teams (TCNOT) ***Description:*** The TCNOT supports Army Test and Evaluation events by maintaining a team of highly qualified, trained, and certified Computer Network Operations (CNO) professionals who execute cyber operations against systems under test. The TCNOT program was designated a "Threat CNO Team" under AR 380-53 and is accredited as a USSTRATCOM/NSA certified "Red Team". ***FY 2015 Accomplishments:*** Funded supports unique training, credentials, and authorizations involving organizations such as INSCOM, NSA, HQDA-G2, and industry. FY15 funded requirements such as continued research of the intelligence-based TCNO TTP and threat portrayal capabilities up to the Nation State level; development of the necessary, highly specialized TCNO Training program; development, research, and analysis of continually emerging foreign threat capabilities; and data collection capability. ***FY 2016 Plans:*** Funding supports unique training, credentials, and authorizations involving organizations such as INSCOM, NSA, HQDA-G2, and industry. FY16 funds requirements such as continued research of the intelligence-based TCNO TTP and threat portrayal capabilities up to the Nation State level; development of the necessary, highly specialized TCNO Training program; development, research, and analysis of continually emerging foreign threat capabilities; and data collection capability. ***FY 2017 Plans:***	2.946	3.003	4.051

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*	**Project (Number/Name)** 976 / *Army Threat Sim (ATS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Funding will support unique training, credentials, and authorizations involving organizations such as INSCOM, NSA, HQDA-G2, and industry. FY17 will fund requirements such as continued research of the intelligence-based TCNO TTP and threat portrayal capabilities up to the Nation State level; development of the necessary, highly specialized TCNO Training program; development, research, and analysis of continually emerging foreign threat capabilities; and data collection capability.			
Title: Threat Computer Network Operations (CNO) Fidelity Enhancements	1.280	1.312	1.333
Description: Threat CNO Fidelity Enhancements establishes high-fidelity Threat malware and real-world tools, tactics, techniques, and procedures of Threat employment of CNO using commercial IT Technologies intended to engage complex U.S. operations. ***FY 2015 Accomplishments:*** Program established validated high-fidelity Threat malware and real-world tools, tactics, techniques, and procedures of Threat employment of CNO using commercial IT technologies intended to engage complex U.S. operations. Worked towards developing state and non-state threat targeting packages that are "current", accurately profiling attack trends and timelines, intent, levels of sophistication, and threat training that will otherwise not be available to evaluate the exploitation of existing vulnerabilities in Enterprise Business Systems and network enabled systems. These threat packages range from "technological nomads" operating autonomously to state level forces using both active and passive network attack to selectively degrade or disrupt Army Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) and Enterprise Business Systems. ***FY 2016 Plans:*** Program continues to validate high-fidelity Threat malware and real-world tools, tactics, techniques, and procedures of Threat employment of CNO using commercial IT technologies intended to engage complex U.S. operations. Continuing the development of state and non-state threat targeting packages that are "current", accurately profiling attack trends and timelines, intent, levels of sophistication, and threat training that will not be available to evaluate the exploitation of existing vulnerabilities in Enterprise Business Systems and network enabled systems. These threat packages range from "technological nomads" operating autonomously to state level forces using both active and passive network attack to selectively degrade or disrupt Army C4ISR and Enterprise Business Systems. ***FY 2017 Plans:*** Program will continue to validate high-fidelity Threat malware and real-world tools, tactics, techniques, and procedures of Threat employment of CNO using commercial IT technologies intended to engage complex U.S. operations. Will continue to develop state and non-state threat targeting packages that are "current", accurately profiling attack trends and timelines, intent, levels of sophistication, and threat training that will not be available to evaluate the exploitation of existing vulnerabilities in Enterprise Business Systems and network enabled systems. These threat packages range from "technological nomads" operating			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*	**Project (Number/Name)** 976 / *Army Threat Sim (ATS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
autonomously to state level forces using both active and passive network attack to selectively degrade or disrupt Army C4ISR and Enterprise Business Systems.			
Title: Advanced Networked Electronic Support Threat Sensors (NESTS) ***Description:*** Program will begin prototype design and implementation to deliver advanced threat Electronic Support (ES) platforms. ***FY 2016 Plans:*** The Advanced NESTS program to increase existing threat Electronic Support (ES) capabilities to match the U.S. Intelligence Community performance assessments of real-world threat capabilities. This program seeks to replicate emerging real-world threat capabilities targeting advanced U.S. communication systems operating up to 18GHz. Program to establish the detailed design and begin the integration effort. ***FY 2017 Plans:*** The Advanced NESTS program will continue to increase existing threat Electronic Support (ES) capabilities to match the U.S. Intelligence Community performance assessments of real-world threat capabilities. This program seeks to replicate emerging real-world threat capabilities targeting advanced U.S. communication systems operating up to 18GHz. Program will continue the detailed design and the integration effort.	-	2.392	4.701
Title: Advanced Jammer Suite (Next Generation Electronic Attack (EA)) ***Description:*** Begin development of the infrastructure and testing capacity for persistent portrayal of operationally realistic threat network environments and expertise needed to accurately characterize, plan, and assess the effects of both US and adversary cyber capabilities. Enables ability to provide cyber attack capabilities from a realistic threat environment. ***FY 2016 Plans:*** The Advanced Jammer Suite expands the Army's open air and alternatives for EA in a test environment by using variations of jamming to include direct jamming, open air jamming and GPS jamming. Program to keep the current jamming threat as an asset to the Army for use in testing, at lower test costs. The Advanced Jammer Suite expands the Army alternative EA in a test environment by using appropriate jamming techniques for the applied testing environment. This program continues the threat representation for the Army in the jamming domain. Program to procure upgraded injection jamming units, as well as develop new and future jamming threats, to include satellite jamming threats. This threat development would include, but is not limited to techniques such as Frequency Follower Direct Sequence Spread Spectrum (DSSS) threat jamming; Digital Radio Frequency Modulation (DRFM) "spoofing;" and, extended RF range into the Extremely High Frequency (EHF) range. ***FY 2017 Plans:***	-	1.758	4.394

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*	**Project (Number/Name)** 976 / *Army Threat Sim (ATS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
The Advanced Jammer Suite expands the Army's open air and alternatives for EA in a test environment by using variations of jamming to include direct jamming, open air jamming and GPS jamming. This program will keep the current jamming threat as an asset to the Army for use in testing, at lower test costs. The Advanced Jammer Suite expands the Army alternative EA in a test environment by using appropriate jamming techniques for the applied testing environment. This program continues the threat representation for the Army in the jamming domain. This program will continue to procure upgraded injection jamming units, as well as develop new and future jamming threats, to include satellite jamming threats. This threat development would include, but is not limited to techniques such as Frequency Follower Direct Sequence Spread Spectrum (DSSS) threat jamming; Digital Radio Frequency Modulation (DRFM) "spoofing;" and, extended RF range into the Extremely High Frequency (EHF) range.			
Title: Threat Information Environment ***Description:*** Begin development of the infrastructure and testing capacity for persistent portrayal of operationally realistic threat network environments and expertise needed to accurately characterize, plan, and assess the effects of both US and adversary cyber capabilities. Enables ability to provide cyber attack capabilities from a realistic threat environment. ***FY 2016 Plans:*** This capability provides the infrastructure and testing capacity for routine and consistent portrayal of operationally realistic, threat representative environments and expertise and the means to accurately characterize, plan, and assess the effects of cyber adversaries. This program would leverage partnerships across the Army (ARCYBER/1st IO CMD, RDECOM/ARL, AMRDEC) to ensure intellectual capital and manning is available to execute the capability. Army cost avoidance through this program due to corrected vulnerabilities and threat mitigation in Army systems would be both common and substantial.	-	1.000	-
Title: Threat Battle Command Force (TBCF) ***Description:*** Threat Battle Command Force (TBCF) ***FY 2017 Plans:*** The Threat Battle Command Force (TBCF) incorporates remote operations via distributed C2 while maintaining valid Threat tactics, techniques, and procedures (TTP) during T&E and training events. This program will integrate the Next Generation Electronic Support Suite, Next Generation Electronic Attack Suite and Computer Network Operations into future Threat C2 operations.	-	-	1.953
Accomplishments/Planned Programs Subtotals	21.691	20.035	25.675

	FY 2015	FY 2016
Congressional Add: Integrated Threat Distributed Cyber Environments	-	7.500

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604256A / *Threat Simulator Development*	**Project (Number/Name)** 976 / *Army Threat Sim (ATS)*

	FY 2015	FY 2016
FY 2016 Plans: Development of these provisions will enable real-time cyber causality assessment against the realistic cyber threat environment while retaining the ability to rapidly reconfigure required environments as the cyber threat adapts and proliferates. This capability will utilize automated configuration and control of threat cyber environment operations in order to meet current demands. This capability is a solution to existing challenges of implementing, sustaining, and reconfiguring actual foreign network technology to replicate threat cyber environment requirements.		
Congressional Adds Subtotals	-	7.500

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0604258A / *Target Systems Development*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	9.778	16.684	19.122	-	19.122	10.979	10.515	15.593	17.287	-	-
238: *Aerial Targets*	-	7.161	12.182	13.719	-	13.719	6.677	6.039	10.306	11.833	-	-
459: *Ground Targets*	-	2.617	4.502	5.403	-	5.403	4.302	4.476	5.287	5.454	-	-

A. Mission Description and Budget Item Justification

This program funds aerial and ground target hardware and software development, maintenance, and upgrades. The overall objective is to ensure validation of weapon system accuracy and reliability by developing aerial and ground targets essential for test and evaluation (T&E). These targets are economical and expendable, remotely controlled or stationary, and often destroyed in use. The Army is the Tri-Service lead under Reliance for providing rotary wing, mobile ground, towed, and designated targets for T&E. The Army executes development of some Service-peculiar target requirements in support of quality assurance, lot acceptance, and training and continues development of Service-peculiar and on-going target materiel upgrades to maintain continuity with current weapons technology and trends in modern and evolving Army weapons.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	10.037	16.684	18.506	-	18.506
Current President's Budget	9.778	16.684	19.122	-	19.122
Total Adjustments	-0.259	0.000	0.616	-	0.616
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.259	-			
• Adjustments to Budget Years	-	-	0.616	-	0.616

Change Summary Explanation

FY 2017 budget adjustment received to achieve requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604258A / *Target Systems Development*	Project (Number/Name) 238 / *Aerial Targets*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
238: *Aerial Targets*	-	7.161	12.182	13.719	-	13.719	6.677	6.039	10.306	11.833	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Aerial Targets support Army Transformation by providing for development, acquisition, operation, storage, update, and maintenance of realistic surrogate or acquired threat high-performance, multi-spectral aerial targets and development of virtual target computer models of aerial targets. Modern weapons require test, evaluation, and training using threat representative aerial targets to assess their effectiveness on the battlefield. This program encompasses a family of rotary and fixed-wing targets; full-scale, miniature, and subscale targets; virtual targets; ancillary devices; and their control systems. These products are required to adequately stress weapon systems undergoing test and evaluation (T&E). In order to stress systems during T&E, aerial targets must have flight characteristics, signatures, and other performance factors that emulate the modern threat. This program includes long-range planning to determine future target needs and development of coordinated requirement documents; the management of target research, development, test and evaluation process; execution of the validation process to ensure that surrogate targets adequately represent the threat; development and acquisition of surrogate and acquired targets; and continuing maintenance, storage, and development/ enhancement/update via engineering services of the developed and acquired threat targets to ensure availability for the T&E customer. The Army is the Reliance lead for Rotary Wing Targets and towed target developments and the Tri-Service lead for procurement and enhancement of the MQM-107 fixed wing target.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the High Speed Aerial Target Sustainment (HSAT).	1.114	1.222	1.413
Description: Continue EMD phase contract activities for the HSAT, MQM-107 equipment.			
FY 2015 Accomplishments: Continued EMD for the aging HSAT, MQM-107 that will provide a realistic aerial target capable of simulating the performance of enemy aircraft to aid in the reseach, development, test, and evaluation of weapons systems and to aid in training operational units employing producton missile systems. Funds required to overcome obsolescence for spare and repair parts, and to maintain equipment and documentation for safe operations. Supports all Army systems needing to test Intelligence Surveillance and Reconnaissance (ISR), kinetic, electronic warfare, infra-red or ISR capabilities against an aerial target with high speed, high altitude flight envelope.			
FY 2016 Plans: Continues EMD for the aging HSAT, MQM-107 that will provide a realistic aerial target capable of simulating the performance of enemy aircraft to aid in the research, development, test, and evaluation of weapons systems and to aid in training operational units employing production missile systems. Funds will be required to overcome obsolescence for spare and repair parts, and to			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
maintain equipment and documentation for safe operations supporting T&E programs such as Patriot, Stinger, IAMD, Sentinel Radar, CMDS and classified programs for Army and Tri-Service customers. ***FY 2017 Plans:*** Will continue EMD for the aging HSAT, MQM-107 that will provide a realistic aerial target capable of simulating the performance of enemy aircraft to aid in the research, development, test, and evaluation of weapons systems and to aid in training operational units employing production missile systems. Funds will continue to be required to overcome obsolescence for spare and repair parts, and to maintain equipment and documentation for safe operations supporting T&E programs such as Patriot, Stinger, IAMD, Sentinel Radar, CMDS and classified programs for Army and Tri-Service customers.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Target Control Systems (TCS) and aerial target control components. ***Description:*** Continue EMD phase contract activities for the TCS and aerial target control components. ***FY 2015 Accomplishments:*** Continued EMD for the TCS and aerial target control components. Provided for design modifications to solve obsolescence problems and updates software to correct anomalies. Provided for software performance enhancement modifications to support T&E missions, improve test sets and develop upgraded operator displays. Updated documentation of the system and operations and maintenance manuals. Supported operational repair and maintenance with engineering analysis of target control system performance. ***FY 2016 Plans:*** Continues EMD for the aerial and TCS ground target control components. Will provide for design modifications to solve obsolescence problems and updates software to correct anomalies. Will provides for software performance enhancement modifications to support T&E missions, improve test sets and develop upgraded operator displays. Will update documentation of the system and operations and maintenance manuals. Will support operational repair and maintenance with engineering analysis of target control system performance. ***FY 2017 Plans:*** Will continue Engineering and Manufacturing Development (EMD) for the aerial target test sets, relays, avionics components, and other aerial ancillary equipment. Will continue to provide for design modifications to solve obsolescence problems and update software to correct anomalies and provide for software performance enhancement modifications to support T&E missions and upgrade test sets and other aerial ancillary equipment. Will continue to update documentation of the system as well as operations	0.564	0.574	0.674

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
and maintenance manuals. Will continue to support operational repair and maintenance with engineering analysis of target control system performance..			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Towed Targets/Ancillary devices. ***Description:*** Continue EMD phase contract activities for the Towed Targets/Ancillary devices. ***FY 2015 Accomplishments:*** Continued EMD for the Towed Targets/Ancillary devices. Continued development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets, and ancillary devices. Continued development and testing of Low Cost Towed target systems (Cruise Missile Tow Target, Reduced Radar Tow Target, and the Special Low Altitude Tow Target) emulating current threats at a very low cost to Patriot, JLENS and classified customers. Signature modification and performance enhancement efforts for these targets is ongoing. Investigates/tests other cost-saving towed systems (Glide-Tow, Towed Spheres, Height-Keeping-Tow, and Tow Test Bed) for Air Defense Weapons System customers. ***FY 2016 Plans:*** Continue EMD for the Towed Targets/Ancillary devices. Continue the development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets, and ancillary devices. Continuation of development and testing of Low Cost Towed target systems (Cruise Missile Tow Target and Reduced Radar Tow Target) emulating current threats at a very low cost to Patriot, JLENS and classified customers. Signature modification and performance enhancement efforts for these targets is ongoing. Investigates/tests other cost-saving towed systems (Glide-Tow, Towed Spheres, Height-Keeping-Tow, and Tow Test Bed) for Air Defense Weapons System customers. ***FY 2017 Plans:*** Will continue EMD for the Towed Targets/Ancillary devices. Will continue development, enhancement, maintenance, and storage for all RDT&E aerial targets, towed targets, and ancillary devices. Continuation of development and testing of Low Cost Towed target systems (Cruise Missile Tow Target and Reduced Radar Tow Target) emulating current threats at a very low cost to Patriot, JLENS and classified customers. Signature modification and performance enhancement efforts for these targets is ongoing. Investigates/tests other cost-saving towed systems (Glide-Tow, Towed Spheres, Height-Keeping-Tow, and Tow Test Bed) for Air Defense Weapons System customers.	0.704	0.647	0.746
Title: Engineering and Manufacturing Development (EMD) phase contract activity for Aerial Virtual Targets. ***Description:*** Continue EMD phase contract activities for Aerial Virtual Targets. ***FY 2015 Accomplishments:*** Continued EMD for Aerial Virtual Targets for evolving Army and DoD simulation standards and evolving implementation techniques; focused on simulation target models of airplanes, helicopters, missiles, unmanned aerial vehicles, and aerial targets	0.919	0.934	1.211

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
in commonly used formats to support visualization, infrared analysis, and radar analysis simulations; supports verification and validation of models and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Simulation target models are employed to facilitate simulations for developmental testing (DT) and operational testing (OT) test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models are used by multiple DoD agencies and multiple weapon systems such as Close Combat Weapon System (CCWS), Unmanned Aerial System, Lower Tier Program offices, and Longbow Hellfire. ***FY 2016 Plans:*** Continue EMD for Aerial Virtual Targets for evolving Army and DoD simulation standards and evolving implementation techniques; focuses on simulation target models of airplanes, helicopters, missiles, unmanned aerial vehicles, and aerial targets in commonly used formats to support visualization, infrared analysis, and radar analysis simulations; will support verification and validation of models, to provide archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Simulation target models are employed to facilitate simulations for developmental testing (DT) and operational testing (OT) test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will be used by multiple DoD agencies and multiple weapon systems such as Close Combat Weapon System (CCWS), Unmanned Aerial System, Lower Tier Program offices, and Longbow Hellfire. ***FY 2017 Plans:*** Will continue EMD for Aerial Virtual Targets for evolving Army and DoD simulation standards and evolving implementation techniques; focuses on simulation target models of airplanes, helicopters, missiles, unmanned aerial vehicles, and aerial targets in commonly used formats to support visualization, infrared analysis, and radar analysis simulations; will support verification and validation of models, will provide archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Simulation target models are employed to facilitate simulations for developmental testing (DT) and operational testing (OT) test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will be used by multiple DoD agencies and multiple weapon systems such as Close Combat Weapon System (CCWS), Unmanned Aerial System, Lower Tier Program offices, and Longbow Hellfire.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Army Ground Aerial Target Control System (AGATCS). ***Description:*** EMD phase contract activities for the Army Ground Aerial Target Control System (AGATCS). which will support a modern current technology target control system for control of both aerial and ground targets.	3.348	7.246	8.088

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Continued EMD for AGATCS which provides remote control of aerial (both fixed and Rotary Wing), ground (heavy, medium, and light vehicles), and seaborne targets with a single control system in support of live fire testing necessary for lethality evaluation and sensor package testing for evaluation of suitability and effectiveness. Complies with DODI 8510.01 mandate / DOD Information Assurance Certification and Accreditation Process (DIACAP/RMF) on all target control systems to ensure a secure operating posture. Meets surface target testing requirements to include formation, collision avoidance, and swarming capabilities for U.S. Army test ranges. Developed and maintained a small fleet of seaborne and UHV-T assets for use by the T&E community. Provided Test Centers and the T&E community with a versatile seaborne and rotary wing resource for use in conducting tests to include live fire testing, observation, signal repeater and cargo transportation. Acquired and sustained STI to support all test ranges critical to ATEC's requirement for threat representative surface targets. ***FY 2016 Plans:*** Continue EMD for AGATCS which provides remote control of aerial (both fixed and Rotary Wing), ground (heavy, medium, and light vehicles), and seaborne targets with a single control system in support of live fire testing necessary for lethality evaluation and sensor package testing for evaluation of suitability and effectiveness. Complies with DODI 8510.01 mandate / DOD Information Assurance Certification and Accreditation Process (DIACAP/RMF) on all target control systems to ensure a secure operating posture. Meets surface target testing requirements to include formation, collision avoidance, and swarming capabilities for U.S. Army test ranges. Develops and maintains a small fleet of seaborne and UHV-T assets for use by the T&E community. Provides Test Centers and the T&E community with a versatile seaborne and rotary wing resource for use in conducting tests to include live fire testing, observation, signal repeater and cargo transportation. Acquires and sustains STI to support all test ranges critical to ATEC's requirement for threat representative surface targets. ***FY 2017 Plans:*** Will Continue EMD for AGATCS which provides remote control of aerial (both fixed and Rotary Wing), ground (heavy, medium, and light vehicles), and seaborne targets with a single control system in support of live fire testing necessary for lethality evaluation and sensor package testing for evaluation of suitability and effectiveness. Complies with DODI 8510.01 mandate / DOD Information Assurance Certification and Accreditation Process (DIACAP/RMF) on all target control systems to ensure a secure operating posture. Meets surface target testing requirements to include formation, collision avoidance, and swarming capabilities for U.S. Army test ranges. Develops and maintains a small fleet of seaborne and UHV-T assets for use by the T&E community. Provides Test Centers and the T&E community with a versatile seaborne and rotary wing resource for use in conducting tests to include live fire testing, observation, signal repeater and cargo transportation. Acquires and sustains STI to support all test ranges critical to ATEC's requirement for threat representative surface targets.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Unmanned Aerial System - Target (UAS-T).	0.512	0.575	0.597

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Continue EMD phase contract activities for the UAS-T to provide threat representative support for test and experimentation missions. ***FY 2015 Accomplishments:*** Continued EMD for the UAS-T to operate and maintain a generic, tactical class unmanned aircraft system target to support a wide variety of test requirements by providing generic threat representative support for test and experimentation missions. Funds enabled the identification and correction of system anomalies identified during operations and the flight demonstration of system corrections. Funds provided for limited engineering capability to address minor enhancements to the basic target system to meet shortcomings identified during operations. Funds also provided for updating of the system drawing package and systems documents to incorporate modifications made to the system. Supported all Army systems needing to test Intelligence, Surveillance and Reconnaissance (ISR), kinetic, Electronic Warfare, infrared or ISR capabilities against an unmanned aerial target with a medium flight envelope. ***FY 2016 Plans:*** Continue EMD for the UAS-T to operate and maintain a generic, tactical class unmanned aircraft system target to support a variety of test requirements by providing a generic threat representative aerial target to support test and experimentation missions. Projects to be supported include the Space and Missile Defense Command High Energy Laser project, the JIAMDO sponsored Black Dart 2015, Littoral Combat Ship operational and live fire testing, and a variety of research and development efforts. Funds will enable the identification and correction of anomalies identified during flight operations and the flight demonstration of the corrective actions. Funds will provide for limited engineering capability to address minor enhancements to the basic target system to meet shortcomings identified during operations. ***FY 2017 Plans:*** Will continue EMD for the UAS-T to operate and maintain a generic, tactical class unmanned aircraft system target to support a variety of test requirements by providing a generic threat representative aerial target to support test and experimentation missions. Projects to be supported include the Space and Missile Defense Command High Energy Laser project, the JIAMDO sponsored Black Dart 2015, Littoral Combat Ship operational and live fire testing, and a variety of research and development efforts. Funds will continue to enable the identification and correction of anomalies identified during flight operations and the flight demonstration of the corrective actions. Funds will continue to provide for limited engineering capability to address minor enhancements to the basic target system to meet shortcomings identified during operations.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the High Speed Aerial Target Replacement.	-	0.984	0.990
Description: EMD for the replacement of aging HSAT, MQM-107 to provide a realistic aerial target capable of simulating the performance of enemy aircraft. This will aid in the research, development, test, and evaluation of weapons systems and aid in training operational units employing production missile systems. Funds required for the replacement HSAT system to be cost			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
effective and able to meet capabilities currently supported by the MQM-107. Program requires technical support for investigation, demonstration, and Integration of a more economical target. Technical oversight of the replacement targets' acquisition along with GSE and other activities related to getting it operational is essential. Supports T&E programs such as Patriot, Stinger, IAMD, Sentinel Radar, CMDS and classified programs for Army and Tri-Service customers. ***FY 2016 Plans:*** Beginning the EMD for the replacement of aging High Speed Aerial Target (HSAT, MQM-107) that will provide a realistic aerial target capable of simulating the performance of enemy aircraft to aid in the research, development, test, and evaluation of weapons systems and to aid in training operational units employing production missile systems. Funds required to replace HSAT system to ensure cost effectiveness and meet capabilities currently supported by the MQM-107. Program requires technical support for investigation, demonstration, and integration of a more economical target. Technical oversight of the replacement targets' acquisition along with ground support equipment and other activities related to getting it operational is essential. Target to support T&E programs such as Patriot, Stinger, IAMD, Sentinel Radar, CMDS and classified programs for Army and Tri-Service customers. ***FY 2017 Plans:*** Will continue the EMD for the replacement of aging High Speed Aerial Target (HSAT, MQM-107) that will provide a realistic aerial target capable of simulating the performance of enemy aircraft to aid in the research, development, test, and evaluation of weapons systems and to aid in training operational units employing production missile systems. Funds are required for the replacement HSAT system that will need to be cost effective and able to meet capabilities currently supported by the MQM-107. This program will continue to require technical support for investigation, demonstration, and integration of a more economical target. Technical oversight of the replacement targets' acquisition along with ground support equipment and other activities related to getting it operational is essential. This target will continue to support T&E programs such as Patriot, Stinger, IAMD, Sentinel Radar, CMDS and classified programs for Army and Tri-Service customers.			
Accomplishments/Planned Programs Subtotals	7.161	12.182	13.719

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 238 / *Aerial Targets*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604258A / *Target Systems Development*	Project (Number/Name) 459 / *Ground Targets*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
459: *Ground Targets*	-	2.617	4.502	5.403	-	5.403	4.302	4.476	5.287	5.454	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program funds Army efforts to support test and evaluation (T&E) of advanced weapon systems and supports Army Transformation by developing surrogates, acquiring foreign equipment and developing virtual target computer models of ground vehicle targets. These products are required to adequately stress weapon systems undergoing T&E. This tasking includes long-range planning to determine future target needs and development of coordinated requirement documents; the centralized management of the ground target research, development, test and evaluation processes; execution of the validation process; acquisition of foreign equipment; and continuing maintenance, storage, and development/enhancement/update via engineering services of developed and acquired targets to ensure availability for T&E customers. This program also manages use of current assets and operates centralized spare parts program. The US Army is the Tri-Service lead for providing mobile ground targets for T&E.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Mobile Ground Target Operations (MGTO)	2.068	1.892	2.432
Description: MGTO provides oversight of five Primary Operating Centers to include operation, storage, maintenance, repair, safety and configuration management. ***FY 2015 Accomplishments:*** MGTO provided oversight to five Primary Operating Centers to include operations, storage, maintenance, repair, safety and configuration management for Foreign Mobile Ground Target Vehicles, and acquisition of new material and spare parts. Efforts supported users such as ATEC, Apache 64E, GMLRS, Brigade Modernization Command, KIOWA, GCV, Shadow, JLTV, PM Force Protection System, UAS, Light Armored Vehicle and others. ***FY 2016 Plans:*** MGTO provides oversight to five Primary Operating Centers to include operations, storage, maintenance, repair, safety and configuration management for Foreign Mobile Ground Target Vehicles, and acquisition of new material and spare parts. Efforts will support users such as ATEC, Apache 64E, JAGM, Javelin, PM CREW, Brigade Modernization Command, , JLTV, PM Force Protection System, UAS, Light Armored Vehicle Add PM Future Fighting Vehicle (FFV), and others. ***FY 2017 Plans:*** Maintains a fleet of reusable ground targets emulating relevant, current, and emerging threats which provides cost effective solutions for T&E. The objective of the Mobile Ground Target Operations (MGTO) effort is to support the testing community as fully, efficiently and effectively as possible. The MGTO centrally manages a fleet of foreign threat ground vehicles while maintaining the foreign integrity of the assets. The MGTO provides support and oversight for actual threat foreign ground vehicles			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 459 / *Ground Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
and mobile ground target surrogate vehicles for use as threat targets by the T&E community for destructive and non-destructive scenarios. Efforts will support users such as ATEC, Apache 64E, GMLRS, Brigade Modernization Command, KIOWA, JAGM, Gray Eagle, Add PM Future Fighting Vehicle (FFV), and others.			
Title: Ground Virtual Targets ***Description:*** Government System Test and Evaluation to support the research and development of Ground Virtual Targets. ***FY 2015 Accomplishments:*** Continued Government System Test and Evaluation to fund the research and development of Ground Virtual Targets for evolving Army and DoD simulation standards and implementation techniques. Focused on simulation target models of wheeled and tracked ground vehicles in commonly used model formats; developed simulation target models visualization simulations, IR analysis simulations, and RF analysis simulations; supported verification and validation of models, and provided archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Simulation target models employed to facilitate simulations for both DT and OT; Virtual Targets support test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will be used by multiple DoD agencies and multiple weapon systems. ***FY 2016 Plans:*** Continues Government System Test and Evaluation to fund the research and development of Ground Virtual Targets for evolving Army and DoD simulation standards and implementation techniques. Focuses on simulation target models of wheeled and tracked ground vehicles in commonly used model formats; to develop simulation target models visualization simulations, IR analysis simulations, and RF analysis simulations; to support verification and validation of models, and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Simulation target models to be employed to facilitate simulations for both DT and OT; Virtual Targets support test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models to be used by multiple DoD agencies and multiple weapon systems such as the JAGM and Longbow Hellfire offices. ***FY 2017 Plans:*** Will continue Government System Test and Evaluation to fund the research and development of Ground Virtual Targets for evolving Army and DoD simulation standards and implementation techniques. Will continue to focus on simulation target models of wheeled and tracked ground vehicles in commonly used model formats; will continue to develop simulation target models visualization simulations, IR analysis simulations, and RF analysis simulations; will continue to support verification and validation of models, and provides archiving and distribution of simulation target models to simulation developers throughout the Army and DoD T&E communities. Simulation target models will continue to be employed to facilitate simulations for both DT and OT; Virtual	0.549	0.636	0.966

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604258A / *Target Systems Development*	**Project (Number/Name)** 459 / *Ground Targets*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Targets support test planning, test rehearsal, post-test analysis, hardware-in-the-loop testing, and execution of test events that are too costly or difficult to be conducted under actual field conditions. These models will continue to be used by multiple DoD agencies and multiple weapon systems such as the JAGM and Longbow Hellfire offices.			
Title: Mobile Ground Targets Hardware (MGTH) ***Description:*** MGTH provides a mix of actual threat assets and surrogate targets to support Army T&E events. ***FY 2016 Plans:*** The MGTH program to provide an optimized mix of varying fidelity ground targets to cost-effectively meet the functionality and signature fidelity requirements of the objective force. Program to initiate analysis and design efforts to address specific capability shortfalls that include the T-90 and Armata Main Battle Tank signatures and the ability to develop surrogates. Additionally, the development of air defense artillery (ADA) surrogates are critical to meet the current emerging threat. The acquisition and/or development of insurgent vehicles is also essential capabilities that are required to defeat emerging threat forces from particular regions. ***FY 2017 Plans:*** Will continue to provide an optimized mix of varying fidelity ground targets to cost-effectively meet the functionality and signature fidelity requirements of the objective force. Will continue to initiate analysis and design efforts to address specific capability shortfalls that include the T-90 and Armata Main Battle Tank signatures and the ability to develop surrogates. Additionally, the development of air defense artillery (ADA) surrogates are critical to meet the current emerging threat. The acquisition and/or development of insurgent vehicles is also essential capabilities that are required to defeat emerging threat forces from particular regions.	-	1.974	2.005
Accomplishments/Planned Programs Subtotals	2.617	4.502	5.403

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0604759A / *Major T&E Investment*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	54.281	66.580	84.777	-	84.777	71.037	64.819	67.715	68.983	-	-
983: *Reagan Test Site (RTS) T&E Investments*	-	5.687	7.529	7.032	-	7.032	7.096	7.287	7.335	7.529	-	-
984: *Major Developmental Testing Instrumentation*	-	46.139	52.093	31.741	-	31.741	39.948	41.898	44.552	45.394	-	-
986: *Major Operational Test Instrumentation*	-	2.455	6.958	17.971	-	17.971	18.993	15.634	15.828	16.060	-	-
EY9: *Range Radar Replacement Program (RRRP)*	-	0.000	0.000	26.333	-	26.333	0.000	0.000	0.000	0.000	-	-
FA4: *Warrior Injury Assessment Manikin (WIAMan)*	-	0.000	0.000	1.700	-	1.700	5.000	0.000	0.000	0.000	-	-

Note

In FY17 Range Radar Replacement Program (RRRP)was realigned within this Army Program Element 0604759A, from Project 984/Major Developmental Testing Instrumentation to Project EY9/Range Radar Replacement Program (RRRP).

FY17 funding for WIAMan resulted from a realignment of funds from Project 984, APE 0604759A.

A. Mission Description and Budget Item Justification

This program funds the development and acquisition of major developmental test instrumentation for the U.S. Army Test and Evaluation Command's (ATEC) test activities: White Sands Test Center (WSTC), NM; Yuma Test Center, (YTC), AZ; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; Redstone Test Center (RTC), AL; and for the Reagan Test Site (RTS) at the U.S. Army Kwajalein Atoll (USAKA), which is managed by the Space and Missile Defense Command. The program also funds development and acquisition of Operational Test Command's (OTC) major field instrumentation. Requirements for instrumentation are identified through a long range survey of project managers, Research Development and Engineering Centers (RDECs), and Battle Laboratories developing future weapon systems and the test programs that support these systems. Army testing facilities are also surveyed to determine major testing capability shortfalls.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	56.285	62.580	55.243	-	55.243
Current President's Budget	54.281	66.580	84.777	-	84.777
Total Adjustments	-2.004	4.000	29.534	-	29.534
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	4.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.013	-			
• SBIR/STTR Transfer	-1.991	-			
• Adjustments to Budget Years	-	-	29.534	-	29.534

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2015	FY 2016
Project: 984: *Major Developmental Testing Instrumentation*		
Congressional Add: *Congressional Add for Cyber Vulnerabilities Research*	-	4.000
Congressional Add Subtotals for Project: 984	-	4.000
Congressional Add Totals for all Projects	-	4.000

Change Summary Explanation

FY 2017 Budget adjustments in the amount of $29.534 million dollars was the result of a change in Army Test Evaluation Center's (ATEC) priority of requirements. Range Radar Replacement Program (RRRP), was increased by $23.090 million to continue Engineering Manufacturing Development (EMD) based on modifications in FY 2016 for the Fly-out and Close-in Radars systems in preparation for replacement of equipment at Aberdeen Test Center (ATC), Redstone Arsenal Center (RTC), White Sands Test Center (WSTC), and Yuma Test Center (YTC). Real Time Casualty Assessment (RTCA), also known as Integrated Live Virtual Constructive Test Environment (ILTE), was increased by $7.000 million to continue the development of hardware, software, interfaces, and new capabilities to ensure RTCA/ILTE requirements for upcoming operational tests are satisfied. The remainder of the Adjustments to Budget Years ($-556K) represents top loaded inflation rate adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604759A / *Major T&E Investment*	Project (Number/Name) 983 / *Reagan Test Site (RTS) T&E Investments*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
983: *Reagan Test Site (RTS) T&E Investments*	-	5.687	7.529	7.032	-	7.032	7.096	7.287	7.335	7.529	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Programs ending in FY 2016: Mission Data Network Modernization, TRADEX L-Band Modulator, Multiple Simultaneous Engagement (MSE) Flight Safety, Net Centric Operations Upgrade, and Optics Focal Plane Tech Replacement Study.

A. Mission Description and Budget Item Justification

This activity funds improvement and modernization (I&M) for the Ronald Reagan Ballistic Missile Defense Test Site (RTS). Funds modernization of the radar, telemetry, optics, range safety, communications, command/control and other equipment essential to meet test and evaluation requirements of the Services and DoD agencies. Without modernization these instrumentation systems face obsolescence or degraded capability. The RTS instrumentation is required to support data collection for test & evaluation assessments and operational decisions for the Army; Navy; Air Force; U.S. Strategic Command (STRATCOM); Missile Defense Agency (MDA); Defense Advanced Research Projects Agency (DARPA); National Aeronautics and Space Administration (NASA); and other customers. Reagan Test Site (RTS) located in the Republic of the Marshall Islands, is a remote, secure activity of the Major Range and Test Facility Base (MRTFB).

Funding will enable RTS to continue to meet customer objectives and sustain the required instrumentation suite.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Radar Open Systems Architecture Refresh ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Design and development of modern, open subsystems to replace unsupported subsystem hardware for the Kiernan Reentry Measurement System (KREMS) radar sites. ***FY 2017 Plans:*** Continue design and development of open systems with a focus on extending the design to work with phased array radar systems in addition to the Kiernan Reentry Measurement System (KREMS) radar sites.	0.100	-	0.600
Title: Radar Reliability Improvement Program (RRI). ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:***	0.337	0.278	0.300

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 983 / *Reagan Test Site (RTS) T&E Investments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued execution of projects to increase reliability and lower operating costs of RTS radars by incorporating modern commercially available parts into radar systems when legacy parts are obsolete and a drop in replacement is not available. ***FY 2016 Plans:*** Continue execution of projects to increase reliability and lower operating costs of RTS radars by incorporating modern commercially available parts into radar systems when legacy parts are obsolete and a drop in replacement is not available. ***FY 2017 Plans:*** Will continue execution of projects to increase reliability and lower operating costs of RTS radars by incorporating modern commercially available parts into radar systems when legacy parts are obsolete and a drop in replacement is not available.			
Title: Telemetry (TM) Modernization Study. ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Design and begin implementing a telemetry system based on an open system architecture with a software defined radio approach. ***FY 2016 Plans:*** Implement software defined radio design with a modernized frequency agile receiver on one antenna at RTS. ***FY 2017 Plans:*** Extend implementation to multiple antenna sites at RTS.	1.822	1.804	2.310
Title: Multiple Simultaneous Engagement (MSE) Flight Safety. ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continue design and implementation of RTS safety control system replacement. ***FY 2016 Plans:*** Complete implementation of RTS safety control system replacement.	0.600	0.200	-
Title: Legacy Servo Upgrade Program. ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:***	0.100	1.300	0.272

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 983 / *Reagan Test Site (RTS) T&E Investments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Award contract to upgrade obsolete TRADEX antenna servos and drive motors. ***FY 2016 Plans:*** Continue development of TRADEX antenna upgrade and begin upgrade of additional radar or optics servo systems ***FY 2017 Plans:*** Complete TRADEX servo upgrade and continue upgrade of additional radar or optics servo systems.			
Title: Mission Data Network (MDN) Modernization. ***Description:*** MDN Modernization. ***FY 2015 Accomplishments:*** Continued new network architecture changes to improve on-atoll bandwidth to support increasing custom requirements. ***FY 2016 Plans:*** Complete new network architecture changes to improve on-atoll bandwidth to support increasing custom requirements.	0.350	0.084	-
Title: RTS Automation and Decision Support. ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued addition of automation measures and more sophisticated algorithms to improve operator efficiency. Focus on automation at the sensor level. ***FY 2016 Plans:*** To complete radar automation and begin work on displays and control center automation. ***FY 2017 Plans:*** Will continue work on displays and control center automation.	1.000	0.222	0.200
Title: TRADEX L-Band Modulator ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued replacement of TRADEX L-band tube-based modulator with a commercial solid-state unit.	0.703	-	-
Title: Net Centric Operations Upgrade ***Description:*** Funding is provided for the following effort	0.100	0.366	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 983 / *Reagan Test Site (RTS) T&E Investments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Begin development of software to allow communication between the RTS Distributed Operations (RDO) software and Net Centric enterprises such as TENA. ***FY 2016 Plans:*** Complete development of software to allow communication between the RTS Distributed Operations (RDO) software and Net Centric enterprises such as TENA.			
Title: Transmitter Reliability Improvements ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Designed a solid state amplifier solution that has the equivalent average power of one ALTAIR UHF Traveling Wave Tube (TWT). This is a development effort with a goal of determining the cost, schedule, and risk to implement an all solid state transmitter replacement.	0.075	-	-
Title: Optics Focal Plane Technology Replacement Study ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Develop a digital-pixel focal plane array (DFPA) long-wave infrared camera and telescope to increase the sensitivity and dynamic range of RTS optics. ***FY 2016 Plans:*** Complete DFPA camera/telescope and integrate onto the Super RADOT-5 mount on Roi-Namur	0.200	0.175	-
Title: Legacy Radar Replacement Study ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Study multi-static radar system designs that could be used to replace the legacy radars at the Range.	0.100	-	-
Title: Self healing software and algorithms ***Description:*** Funding is provided for the following efforts ***FY 2015 Accomplishments:***	0.100	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 983 / *Reagan Test Site (RTS) T&E Investments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Study automatic software algorithms and hardware healing approaches for the range sensor subsystems.			
Title: Range in a box - simulation over live study ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Conducted studies into the improvement of the current deployed simulation system capability and how to provide the necessary interface layer allowing the testing of asset software, hardware models, and simulation.	0.100	-	-
Title: Multi-Statics for Radars and Telemetry - Prototype ***Description:*** Funding is provided for the following effort. ***FY 2017 Plans:*** This development will enable all the existing KREMS radars to be used as illuminators and the RTS telemetry systems to be used as receivers in a multi-static array that will increase the sensitivity of the systems, reduce the need for high power operation in the systems, and in conjunction with the software radio radar project and the solid state transmitter project will allow the radars to be operated at a lower O&M cost.	-	-	0.200
Title: Ground Based Discrimination Radar ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:*** Requirements definition and preliminary design for the Ground Based Radaer (GBR) upgrade. The GBR is being transferred from MDA to SMDC in FY16 ***FY 2017 Plans:*** Development, integration, and testing of the GBR upgrade	-	3.100	3.150
Accomplishments/Planned Programs Subtotals	5.687	7.529	7.032

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 983 / *Reagan Test Site (RTS) T&E Investments*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604759A / *Major T&E Investment*	Project (Number/Name) 984 / *Major Developmental Testing Instrumentation*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
984: *Major Developmental Testing Instrumentation*	-	46.139	52.093	31.741	-	31.741	39.948	41.898	44.552	45.394	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The following programs are New Starts for FY17: Robotics/UAS Instrumentation Suite and System of Systems Cooperative Engagement Test Infrastructure (SCETI).

In FY17 Range Radar Replacement Program (RRRP) was realigned within this Program Element from Project 984/Major Developmental Testing Instrumentation to Project EY9/RRRP. RRRP transferred to PEO M&S for completion of the mission.

A. Mission Description and Budget Item Justification

This project develops and acquires major test instrumentation to perform developmental testing of weapon systems at U. S. Army Test and Evaluation Command's (ATEC) activities which include: Yuma Test Center (YTC), AZ; Aberdeen Test Center (ATC), MD; Electronic Proving Ground (EPG), AZ; White Sands Test Center (WSTC), NM; Redstone Test Center (RTC), AL.

Projects are designated as a major test program based on their visibility, assessed relative technical risk (medium-high), schedule risk, cost (greater than $1.5 Million per year or $7.5 Million for the total project) and applicability to other mission areas or services. These projects are technically demanding, state-of-the-art, unique instrumentation assets or suites to meet the technology shortfalls, and generally result from development programs managed by a professional project management team.

Electromagnetic Environmental Effects (E3) Electromagnetic Radiation Effects (EMRE) Systems Modernization will upgrade equipment at the WSMR EMRE site where E3 testing is performed to evaluate survivability and vulnerability of military systems. Project will upgrade and replace signal transmitters, refurbish an anechoic test chamber, replace data acquisition equipment and install a new turntable to support test items. Nuclear Effects Test Capabilities Modernization acquires and upgrades Special Test Equipment for nuclear facilities located at White Sands Missile Range (WSMR). These acquisitions and upgrades include the Pulse Current Injection Simulator, Prompt Gamma Simulator, Gamma Range Facility, Linear Electron Accelerator (LINAC), Semi-Conductor Test Lab, Electromagnetic Pulse and the Solar Furnace. Common Range Integrated Instrumentation System (CRIIS) Objective Program provides precision location instrumentation which will significantly increase the T&E ranges' capability to meet the test instrumentation needs of the tri-service range users. Test Network Modernization will upgrade existing test data networks to ensure infrastructures are capable of providing reliable and secure transport of data and communications for ATEC test activities. Applied Environments Modernization program will upgrade antiquated Environmental labs for climatic and dynamic testing with new cascade refrigeration units, climatic chambers, vibration test systems, x-ray cameras, a real-time radiography system and full spectrum solar lights. Telemetry Systems Modernization program will upgrade/replace mobile and fixed site telemetry equipment and telemetry data processing equipment thereby gaining spectrum efficiency at Redstone Test Center (RTC), Aberdeen Test Center (ATC), White Sands Missile Range (WSMR) and Yuma Proving Ground (YPG). Future Wireless Network program will procure and integrate wireless network technologies across ATEC test activities which will provide near real-time data collection support for Developmental Test and Operational Test events. Robotics/UAS Instrumentation Suite

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 984 / *Major Developmental Testing Instrumentation*

to develop and procure instrumentation for testing controlled and autonomous ground and aerial robotic systems. System of Systems Cooperative Engagement Test Infrastructure (SCETI) for the development of systems to conduct systems level Manned-Unmanned Teaming (MUM-T) testing for both aircraft and ground systems in a distributed environment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Range Radar Replacement Program (RRRP). ***Description:*** EMD phase contract activities for the RRRP. ***FY 2015 Accomplishments:*** Continued Engineering Manufacturing Development (EMD) for the RRRP for the Long Range Radars (LRR) and the Medium Range Radars (MRR) systems in preparation for replacement of equipment at Aberdeen Test Center (ATC), Redstone Test Center (RTC), White Sands Test Center (WSTC) and Yuma Test Center (YTC). ***FY 2016 Plans:*** Given results of ongoing studies, Engineering Manufacturing Development (EMD) continues for the RRRP with adjustments for the Long Range Radars (LRR) and the Medium Range Radars (MRR)systems in preparation for replacement of equipment at Aberdeen Test Center (ATC), Redstone Test Center (RTC), White Sands Test Center (WSTC) and Yuma Test Center (YTC).	29.865	17.411	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Electromagnetic Environmental Effects (E3) Systems Modernization (EMRE) project. ***Description:*** EMD phase contract activities for the E3 Systems Modernization (EMRE) project. This effort will upgrade 27 instrumentation test facilities as White Sands Missile Range (WSMR). ***FY 2015 Accomplishments:*** Funded EMD for the E3 Systems Modernization (EMRE) T2 and T3 transmitter systems. Funded two instrumentation vans. ***FY 2016 Plans:*** Funds for EMD for the E3 Systems Modernization (EMRE) 14 Test Facility Characterization Studies and 9 Site Surveys, Upgrade of support equipment and integration of four transmitter facilities, one turntable replacement and upgrading support equipment of two instrumentation vans, EMI test facility, Data Acquisition Software, and Radiation Hazard Testing Facilities. ***FY 2017 Plans:*** Funds for EMD for the E3 Systems Modernization (EMRE) and acquire the Electromagnetic Interference (EMI) and Peak Pulse Power systems and Electronic Discharge Test Facilities.	5.317	17.740	5.300
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Nuclear Effects Test Capability Modernization.	1.976	10.176	9.986

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 984 / *Major Developmental Testing Instrumentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: EMD phase contract activity for the Nuclear Effects Test Capability Modernization. ***FY 2015 Accomplishments:*** Continued the Engineering and Manufacturing Development (EMD) phase contract activity for the Nuclear Effects Test Capability Modernization. Program upgraded Special Test Equipment for nuclear facilities located at White Sands Missile Range (WSMR). Funded acquisition of Semi-Conductor Testing Laboratory upgrade, Linear Accelerator Upgrade, and Pulsed Current Injection capability upgrade. ***FY 2016 Plans:*** Continue the Engineering and Manufacturing Development (EMD) phase contract activity for the Nuclear Effects Test Capability Modernization. Program to upgrade Special Test Equipment for nuclear facilities located at White Sands Missile Range (WSMR). Funds acquisition and upgrades of Linear Accelerator, Pulsed Current Injection capability, Gamma Radiation Facility, Vertical Electromagnetic Pulse Facility, High-Altitude Electromagnetic Pulse Facility, Enhanced Low Dose Rate Sensitivity capability, Dosimetry Laboratory, and Solar Furnace. ***FY 2017 Plans:*** Will continue the Engineering and Manufacturing Development (EMD) phase contract activity for the Nuclear Effects Test Capability Modernization. Funds acquisition and upgrades of Special Test Equipment for Prompt Gamma Simulator facility and Rapid Response Laboratory. Funding adjusted in FY17 to accommodate program acquisition lead time for competitive procurement of Prompt Gamma Simulator.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity of the Common Range Integrated Instrumentation System (CRIIS) Objective Program.	3.918	1.366	3.785
Description: EMD phase contract activities of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. This is a replacement system for the Advanced Range Data System (ARDS). This system will meet the critical need for measuring the precision location of units under test within the Time-Space domain. It provides a significant increase to the Test & Evaluation ranges' capability to meet the test instrumentation needs of the tri-service range users. The improvements are the data link, TSPI accuracy, miniaturization, standard interfaces, and system encryption of high dynamic instrumentation tracking pods CRIIS instrumentation upgrades will be delivered to White Sands Missile Range (WSMR). ***FY 2015 Accomplishments:*** Continued EMD of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. Funds deployment and design of instrumentation transport network of ground sites at WSMR. ***FY 2016 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 984 / *Major Developmental Testing Instrumentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continues EMD of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. Funds acquisition of CRIIS support equipment: Two Instrumentation Pods, and associated remote ground stations and support equipment. ***FY 2017 Plans:*** Will continue EMD of the Common Range Integrated Instrumentation System (CRIIS) Objective Program. Funds acquisition of CRIIS support equipment: Ten Instrumentation Pods, and associated remote ground stations and support equipment.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity of the Test Network Modernization Program. ***Description:*** EMD phase contract activity for the Test Network Modernization. ***FY 2016 Plans:*** Starts the Engineering and Manufacturing Development (EMD) phase contract activity for the Test Network Modernization. This program will provide a modern test infrastructure capable of reliable, secure transport of test data and test communications for all ATEC developmental test ranges. ***FY 2017 Plans:*** Will continue the Engineering and Manufacturing Development (EMD) phase contract activity for the Test Network Modernization. This program will provide a modern test infrastructure capable of reliable, secure transport of test data and test communications for all ATEC developmental test ranges.	-	0.500	3.032
Title: Engineering and Manufacturing Development (EMD) phase contract activity for Robotics/UAS Instrumentation Suite ***Description:*** Robotics/UAS Instrumentation Suite for testing controlled and autonomous ground and aerial robotic systems. ***FY 2017 Plans:*** Leveraging requirements analysis conducted by ATEC Test Centers, project will begin EMD Phase to develop and procure instrumentation for testing controlled and autonomous ground and aerial robotic systems.	-	-	3.030
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Applied Environments Modernization program. ***Description:*** EMD phase contract activity for the Applied Environments Modernization program ***FY 2016 Plans:*** Will start the Engineering and Manufacturing Development (EMD) phase contract activity for the Applied Environments Modernization program. This program will upgrade antiquated Environmental labs for climatic and dynamic testing with new	-	0.300	2.061

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 984 / *Major Developmental Testing Instrumentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
cascade refrigeration units, climatic chambers, vibration test systems, x-ray cameras, a real-time radiography system and full spectrum solar lights. ***FY 2017 Plans:*** Will continue the Engineering and Manufacturing Development (EMD) phase contract activity for the Applied Environments Modernization program. This program will upgrade antiquated Environmental labs for climatic and dynamic testing with new cascade refrigeration units, climatic chambers, vibration test systems, x-ray cameras, a real-time radiography system and full spectrum solar lights.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Telemetry Systems Modernization program ***Description:*** EMD phase contract activity for the Telemetry Systems Modernization program ***FY 2016 Plans:*** Start the Engineering and Manufacturing Development (EMD) phase contract activity for the Telemetry Systems Modernization program. This program will upgrade/replace mobile and fixed site telemetry equipment and telemetry data processing equipment Redstone Test Center (RTC), Aberdeen Test Center (ATC), White Sands Missile Range (WSMR) and Yuma Proving Ground (YPG) . ***FY 2017 Plans:*** Will continue the Engineering and Manufacturing Development (EMD) phase contract activity for the Telemetry Systems Modernization program. This program will upgrade/replace mobile and fixed site telemetry equipment and telemetry data processing equipment Redstone Test Center (RTC), Aberdeen Test Center (ATC), White Sands Missile Range (WSMR) and Yuma Proving Ground (YPG).	-	0.300	2.000
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Future Wireless Network program. ***Description:*** EMD phase contract activity for the Future Wireless Network program. ***FY 2016 Plans:*** Start the Engineering and Manufacturing Development (EMD) phase contract activity for the Future Wireless Network program. This program will procure and integrate wireless network technologies across ATEC test activities which will provide near real-time data collection support for developmental test and operational test events. ***FY 2017 Plans:***	-	0.300	1.574

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 984 / *Major Developmental Testing Instrumentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue the Engineering and Manufacturing Development (EMD) phase contract activity for the Future Wireless Network program. This program will procure and integrate wireless network technologies across ATEC test activities which will provide near real-time data collection support for developmental test and operational test events.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for System of Systems Cooperative Engagement Test Infrastructure (SCETI) ***Description:*** System of Systems Cooperative Engagement Test Infrastructure (SCETI) ***FY 2017 Plans:*** Leveraging requirements analysis conducted by ATEC Test Centers, project will begin the EMD phase of System of Systems Cooperative Engagement Test Infrastructure (SCETI) for the development of systems to conduct systems level Manned-Unmanned Teaming (MUM-T) testing for both aircraft and ground systems in a distributed environment.	-	-	0.973
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Systems Test and Integration Laboratory (STIL). ***Description:*** Continue EMD phase contract activities for the Systems Test and Integration Laboratory (STIL). ***FY 2015 Accomplishments:*** Completed EMD for the Systems Test and Integration Laboratory (STIL) for use in developmental testing and integration engineering, including a virtual test environment to support integration testing of aviation electronic systems as a part of modernization of Army aircraft. Planned Full Operational Capability in 4 Qtr.	5.063	-	-
Accomplishments/Planned Programs Subtotals	46.139	48.093	31.741

	FY 2015	FY 2016
Congressional Add: Congressional Add for Cyber Vulnerabilities Research	-	4.000
FY 2016 Plans: Congressional Add for Cyber Vulnerabilities Research will provide comprehensive cyber data analytics and fusion instrumentation capabilities including response times, actions, levels of difficulty and visualization for both Red and Blue actors in live and high fidelity virtual environments during developmental and operational test, evaluation and assessments.		
Congressional Adds Subtotals	-	4.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 984 / *Major Developmental Testing Instrumentation*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604759A / *Major T&E Investment*	Project (Number/Name) 986 / *Major Operational Test Instrumentation*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
986: *Major Operational Test Instrumentation*	-	2.455	6.958	17.971	-	17.971	18.993	15.634	15.828	16.060	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program funds the development, acquisition, and integration of major operational test instrumentation for the U.S. Army Test and Evaluation Command's (ATEC) Operational Test Command and supporting test activities at test and training ranges. Requirements for instrumentation are identified through a long range survey of project managers, Research Development and Engineering Centers (RDECs), and Battle Laboratories developing future weapon systems and the test programs that support these systems.

Projects are designated as a major test program based on their visibility, assessed relative technical risk (medium-high), schedule risk, cost (greater than $1.5 Million per year or $7.5 Million for the total project) and applicability to other mission areas or services. These projects are technically demanding, state-of-the-art, unique instrumentation assets or suites to meet the technology shortfalls, and generally result from development programs managed by a professional project management team.

Director Operational Test and Evaluation (DOT&E) annual report to Congress identified shortfalls in the Army's abilities to create realistic operational environments. The Integrated Live-Virtual-Constructive (LVC) Test Environment project will address multiple shortfalls identified by DOT&E. ILTE will deliver a system of systems to provide ar Real-Time Casualty Assessment and instrumentation suite (RTCA) that delivers a high fidelity, realistic, real-time capability to measure hardware and personnel performance in modern combat environments. ILTE will enable testing under tactical conditions for small and large-scale operations while integrating network operations and effects in support of the Army Equipment Modernization Plan. ILTE also allows the U.S. Army to test all Current-to-Future, weapon systems in a realistic operational environment. ILTE will transition Research, Development, Test and Evaluation (RDTE) developed performance enhancements and technology upgrades to the operational test command, control, and communications, communications network, weapons system interfaces, vehicle and dismounted-troop kits and peripherals, Global Positioning Systems (GPS), encryption components, and integrates operational realistic digital battlefield data collection and analysis tools. These tools will collect, store and analyze data from the digital battlefield. Improvements will enable the ILTE system of systems to measure and record accrued damage, levels of exposure, effects of countermeasures, evasive action, and instrument threat vehicles. This capability is required by the operational test community to integrate digital battlefield data collection and analysis tools into the Network Integration Evaluation (NIE), M1, M2, Stryker, and Armored Multi-Purpose Vehicle (AMPV), AH-64E, Gray Eagle and other operational tests.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Project name changed from Real-Time Casualty Assessment (RTCA) to Integrated Live-Virtual-Constructive (LVC) Test Environment (ILTE).	2.455	6.958	17.971

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 986 / *Major Operational Test Instrumentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017

Description: Transition from Technology Maturation and Risk Reduction (TMRR) Phase to EMD Phase and acquisition of ILTE capabilities required to conduct Operational Tests.

FY 2015 Accomplishments:
Funded the development of hardware, software, interfaces, and new capabilities to ensure RTCA requirements for upcoming operational tests are satisfied. Developed initial efforts directed toward RTCA. Funded RTCA instrumentation and simulation systems that were used to support Force-on-Force Operational Tests. Development efforts included: integration with new tactical systems under test, integration with Live, Virtual, and Constructive (LVC) simulation environments, RTCA capabilities for active protection systems and countermeasures, RTCA capabilities for communications/sensor kills and degradations, development, integration, and testing of mission command effects and degradations, communications upgrade, new communications sub-systems, new encryption and RTCA capabilities for electronic warfare and countermeasures.

FY 2016 Plans:
Funds the development of hardware, software, interfaces, and new capabilities to ensure RTCA and ILTE requirements for upcoming operational tests are satisfied. Develops efforts that will initially be directed toward RTCA. Funds will also be allocated for RTCA instrumentation and simulation systems to be used to support Force-on-Force Operational Tests. Development efforts include: integration with new tactical systems under test, integration with Live, Virtual, and Constructive (LVC) simulation environments, RTCA capabilities for active protection systems and countermeasures, RTCA capabilities for communications/sensor kills and degradations, development, integration, and testing of mission command effects and degradations, communications upgrade, new communications sub-systems, new encryption and RTCA capabilities for electronic warfare and countermeasures.

FY 2017 Plans:
ILTE project transitions from Technology Maturation and Risk Reduction (TMRR) to Engineering and Manufacturing Development (EMD) Phase. Project ramps up to provide capabilities in direct support of Operational Test of the Joint Light Tactical Vehicle and Armored Multi-Purpose Vehicle. Will continue to fund the development of hardware, software, interfaces, and new capabilities to ensure RTCA/ILTE requirements for upcoming operational tests are satisfied. Will fund integration of improved representation of unmanned aerial system in operational test environments. Will continue to develop capability to provide a realistic operational test environment. Funds will continue to be allocated for RTCA instrumentation and simulation systems to be used to support Force-on-Force Operational Tests which support a more comprehensive operational test. New development efforts will include integration of classified and unclassified simulations into a common environment. Continued development efforts include, integration with new tactical systems under test, integration with Live, Virtual, and Constructive simulation environments, RTCA capabilities for active protection systems and countermeasures, RTCA capabilities for communications/sensor kills and

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** 986 / *Major Operational Test Instrumentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
degradations, development, integration, and testing of mission command effects and degradations, communications upgrade, new communications sub-systems, new encryption and RTCA capabilities for electronic warfare and countermeasures.			
Accomplishments/Planned Programs Subtotals	2.455	6.958	17.971

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604759A / *Major T&E Investment*	Project (Number/Name) EY9 / *Range Radar Replacement Program (RRRP)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EY9: *Range Radar Replacement Program (RRRP)*	-	0.000	0.000	26.333	-	26.333	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY17 Range Radar Replacement Program (RRRP)was realigned within this Program Element from Project 984/Major Developmental Testing Instrumentation to Project EY9/RRRP.

A. Mission Description and Budget Item Justification

The Range Radar Replacement Program (RRRP) develops modern instrumentation radars to replace obsolete tracking and surveillance radars at U.S. Army Test and Evaluation Command's (ATEC) Developmental Test Command (DTC) activities which include: Aberdeen Test Center (ATC), MD; Redstone Test Center (RTC), AL; White Sands Test Center (WSTC), NM; and Yuma Test Center (YTC), AZ. The acquisition of modern instrumentation radar systems will provide the Army critical testing data essential for the development of complex next generation technology and advanced system capabilities. RRRP provides the test centers with improved radar resolution, sensitivity, accuracy, clutter suppression, and reliability. The anticipated solution for the program requirements is a modular open architecture system consisting of four primary items: a long range radar (LRR), a medium range radar (MRR), a short range radar (SRR), and a radar operations console (ROC). The resulting system will not only reduce operation and sustainment costs for the ranges, but improve data collection, thus enhancing development of Army systems being tested at these ranges. The current fleet of instrumentation radars located at ATC, RTC, WSTC, and YTC has become antiquated to the extent that they are not able to support the test needs of the test centers.

FY 17 Base RDT&E dollars in the amount of $26.333 million funds the development, software engineering, and testing of replacement radars.

Prior development effort was funded in APE 664759 984. RRRP is currently being re-baselined. As a result, associated procurement dollars will be reprogrammed and redistributed as RDT&E through FY21.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Engineering and Manufacturing Development (EMD) Phase Contract Activity	-	-	26.333
Description: EMD phase contracts activities for RRRP			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** EY9 / *Range Radar Replacement Program (RRRP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued Engineering and Manufacturing Development (EMD) for the RRRP for the Long-Range Radars (LRR) and the Medium Range Radars (MRR) systems in preparation for replacement of equipment at Aberdeen Test Center (ATC), Redstone Test Center (RTC), White Sands Test Center (WSTC) and Yuma Test Center (YTC).			
Accomplishments/Planned Programs Subtotals	-	-	26.333

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0604759A / *Major T&E Investment*	Project (Number/Name) FA4 / *Warrior Injury Assessment Manikin (WIAMan)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
FA4: *Warrior Injury Assessment Manikin (WIAMan)*	-	0.000	0.000	1.700	-	1.700	5.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Start for FY17: Warrior Injury Assessment Manikin (WIAMan) Anthropomorphic Test Device (ATD). FA4 is a new Project in Army Program Element 0604759A, created for WIAMan.

A. Mission Description and Budget Item Justification

Warrior Injury Assessment Manikin (WIAMan) Anthropomorphic Test Device (ATD) plans to develop and produce Warrior-representative ATDs that incorporate associated biomedically-validated injury assessment tools to better characterize dynamic events and injury risks measured in Live Fire Test & Evaluation (LFT&E) and vehicle development efforts. This capability is comprised of an anthropomorphic test device (ATD) system purpose built for the Title 10 live fire test and evaluation environment and associated biomechanics data and analysis tools.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Warrior Injury Assessment Manikin (WIAMan) Anthropomorphic Test Device (ATD)	-	-	1.700
Description: Will begin the transition from Technology Maturation and Risk Reduction (TMRR) phase for Warrior Injury Assessment Manikin (WIAMan) Anthropomorphic Test Device (ATD) ***FY 2017 Plans:*** Will begin the transition from Technology Maturation and Risk Reduction (TMRR) phase with Warrior Injury Assessment Manikin (WIAMan) Anthropomorphic Test Device (ATD) prototype refinement to source selection activities preparing for entry into EMD phase.			
Accomplishments/Planned Programs Subtotals	-	-	1.700

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0604759A / *Major T&E Investment*	**Project (Number/Name)** FA4 / *Warrior Injury Assessment Manikin (WIAMan)*

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605103A / *Rand Arroyo Center*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	19.817	19.382	20.658	-	20.658	20.659	20.674	20.684	21.077	-	-
732: *Arroyo Center Spt*	-	19.817	19.382	20.658	-	20.658	20.659	20.674	20.684	21.077	-	-

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This program funds the RAND Arroyo Center, the Department of the Army's Federally Funded Research and Development Center (FFRDC) for studies and analysis. The Arroyo Center draws its researchers from RAND's staff of nearly 700 professionals trained in a broad range of disciplines. Most staff members work in RAND's principal locations-Santa Monica, California; Arlington, Virginia; and Pittsburgh, Pennsylvania. The RAND Arroyo Center provides for continuing analytical research across a broad spectrum of issues and concerns, grouped in four major research areas: Strategy, Doctrine, and Resources; Military Logistics; Manpower and Training; and Force Development and Technology. The RAND Arroyo Center research agenda is primarily focused on mid/long-term concerns. Results and analytical findings directly affect senior leadership deliberations on major issues. Arroyo Center research is sponsored by the Chief of Staff, Vice Chief, the Deputy Chiefs of Staff of the Army; the Army Assistant Secretaries; and most of the Army's major commands. The Arroyo Center is provided guidance from the Army through the Arroyo Center Policy Committee (ACPC), which is co-chaired by the Vice Chief of Staff of the Army and the Assistant Secretary of the Army (Acquisition, Logistics and Technology). The ACPC reviews, monitors, and approves the annual Arroyo Center research plan. Each project requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis. RAND Arroyo provides the Army with a unique multidisciplinary capability for independent analysis.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	20.601	20.853	20.848	-	20.848
Current President's Budget	19.817	19.382	20.658	-	20.658
Total Adjustments	-0.784	-1.471	-0.190	-	-0.190
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.784	-			
• Adjustments to Budget Years	-	-1.471	-0.190	-	-0.190

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605103A / *Rand Arroyo Center*	Project (Number/Name) 732 / *Arroyo Center Spt*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
732: *Arroyo Center Spt*	-	19.817	19.382	20.658	-	20.658	20.659	20.674	20.684	21.077	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program funds the RAND Arroyo Center, the Department of the Army's Federally Funded Research and Development Center (FFRDC) for studies and analysis. The Arroyo Center draws its researchers from RAND's staff of nearly 700 professionals trained in a broad range of disciplines. Most staff members work in RAND's principal locations-Santa Monica, California; Arlington, Virginia; and Pittsburgh, Pennsylvania. The RAND Arroyo Center provides for continuing analytical research across a broad spectrum of issues and concerns, grouped in four major research areas: Strategy, Doctrine, and Resources; Military Logistics; Manpower and Training; and Force Development and Technology. The RAND Arroyo Center research agenda is primarily focused on mid/long-term concerns. Results and analytical findings directly affect senior leadership deliberations on major issues. Arroyo Center research is sponsored by the Chief of Staff, Vice Chief, the Deputy Chiefs of Staff of the Army; the Army Assistant Secretaries; and most of the Army's major commands. The Arroyo Center is provided guidance from the Army through the Arroyo Center Policy Committee (ACPC), which is co-chaired by the Vice Chief of Staff of the Army and the Assistant Secretary of the Army (Acquisition, Logistics and Technology). The ACPC reviews, monitors, and approves the annual Arroyo Center research plan. Each project requires General Officer (or SES equivalent) sponsorship and involvement on a continuing basis. RAND Arroyo provides the Army with a unique multidisciplinary capability for independent analysis.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Research addressing manpower and training	4.809	4.900	4.899
Description: Addresses key issues for the Army, including recruiting and personnel fill requirements; reserve component readiness; leader development; training (major combat operations and stability operations skills); distance learning, simulation training development and application; training support systems; retention (active command/reserve command); officer career fields, selection, assignment sequencing; and medical forces and operations.			
FY 2015 Accomplishments: The Planned Study program includes numerous key issues for the Army such asrecruiting and personnel fill requirements; reserve component readiness; leader development; training (major combat operations and stability operations skills); distance learning, simulation training development and application; training support systems; retention (active command/reserve command); officer career fields, selection, assignment sequencing; and medical forces and operations.			
FY 2016 Plans: The Planned Study program will include numerous key issues for the Army such as recruiting and personnel fill requirements; reserve component readiness; leader development; training (major combat operations and stability operations skills); distance learning, simulation training development and application; training support systems; retention (active command/reserve command); officer career fields, selection, assignment sequencing; and medical forces and operations.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605103A / *Rand Arroyo Center*	**Project (Number/Name)** 732 / *Arroyo Center Spt*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
The Planned Study program will include numerous key issues for the Army such as recruiting and personnel fill requirements; reserve component readiness; leader development; training (major combat operations and stability operations skills); distance learning, simulation training development and application; training support systems; retention (active command/reserve command); officer career fields, selection, assignment sequencing; and medical forces and operations.			
Title: Research addressing force development and technology ***Description:*** Addresses key issues for the Army, including systems and technology analysis; networks and C4ISR; modeling and simulation; force and organizational development; acquisition policies; and assessment of tactics, techniques, and procedures. ***FY 2015 Accomplishments:*** The Planned Study Program in force development and technology includes key issues for the Army such as including systems and technology analysis; networks and C4ISR; modeling and simulation; force and organizational development; acquisition policies; and assessment of tactics, techniques, and procedures. ***FY 2016 Plans:*** The Planned Study Program in force development and technology includes key issues for the Army such as including systems and technology analysis; networks and C4ISR; modeling and simulation; force and organizational development; acquisition policies; and assessment of tactics, techniques, and procedures. ***FY 2017 Plans:*** The Planned Study Program in force development and technology will include key issues for the Army such as systems and technology analysis; networks and C4ISR; modeling and simulation; force and organizational development; acquisition policies; and assessment of tactics, techniques, and procedures.	4.704	4.792	4.791
Title: Research addressing Army logistics ***Description:*** Addresses key issues for the Army, including supply chain management; fleet management and modernization; logistics force development; and infrastructure management. ***FY 2015 Accomplishments:*** The Planned Study Program in Army logistics includes key issues for the Army such as supply chain management; fleet management and modernization; logistics force development; and infrastructure management. ***FY 2016 Plans:*** The Planned Study Program in Army logistics includes key issues for the Army such as supply chain management; fleet management and modernization; logistics force development; and infrastructure management. ***FY 2017 Plans:***	4.175	4.254	4.253

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605103A / *Rand Arroyo Center*	**Project (Number/Name)** 732 / *Arroyo Center Spt*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
The Planned Study Program in Army logistics will include key issues for the Army such as supply chain management; fleet management and modernization; logistics force development; and infrastructure management.			
Title: Research addressing strategies, doctrine, and resources ***Description:*** Addresses key issues for the Army, including the evolving operating environment; capabilities to face new challenges; partner capabilities; capabilities for stability operations; improvement of resource management; learning from past and present operations; and supporting Army wargames and analysis. ***FY 2015 Accomplishments:*** The Planned Study Program in strategy, doctrine, and resources includes key issues for the Army such as the evolving operating environment; capabilities to face new challenges; partner capabilities; capabilities for stability operations; improvement of resource management; learning from past and present operations; and supporting Army wargames and analysis. ***FY 2016 Plans:*** The Planned Study Program in strategy, doctrine, and resources includes key issues for the Army such as the evolving operating environment; capabilities to face new challenges; partner capabilities; capabilities for stability operations; improvement of resource management; learning from past and present operations; and supporting Army wargames and analysis. ***FY 2017 Plans:*** The Planned Study Program in strategy, doctrine, and resources will include key issues for the Army such as the evolving operating environment; capabilities to face new challenges; partner capabilities; capabilities for stability operations; improvement of resource management; learning from past and present operations; and supporting Army wargames and analysis.	4.913	4.197	5.477
Title: Research addressing military health ***Description:*** Addresses key issues for the Army, including the impact of deployment on soldiers and families; quality of Army health care; medical manpower requirements; medical readiness of soldiers and programs; and implications of advances in medical technology. ***FY 2015 Accomplishments:*** The Planned Study Program in military health will includes key issues for the Army such as the impact of deployment on soldiers and families; quality of Army health care; medical manpower requirements; medical readiness of soldiers and programs; and implications of advances in medical technology. ***FY 2016 Plans:***	1.216	1.239	1.238

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605103A / *Rand Arroyo Center*	**Project (Number/Name)** 732 / *Arroyo Center Spt*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
The Planned Study Program in military health will include key issues for the Army such as the impact of deployment on soldiers and families; quality of Army health care; medical manpower requirements; medical readiness of soldiers and programs; and implications of advances in medical technology. ***FY 2017 Plans:*** The Planned Study Program in military health will include key issues for the Army such as the impact of deployment on soldiers and families; quality of Army health care; medical manpower requirements; medical readiness of soldiers and programs; and implications of advances in medical technology.			
Accomplishments/Planned Programs Subtotals	19.817	19.382	20.658

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605301A *I Army Kwajalein Atoll*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	169.699	203.905	236.648	-	236.648	248.708	216.050	224.984	225.216	-	-
DW7: *Army Kwajalein Atoll Facilities Sustainment*	-	10.300	41.625	35.043	-	35.043	39.596	41.879	42.730	43.218	-	-
DW8: *Army Kwajalein Atoll Installation Services*	-	91.152	83.297	120.086	-	120.086	128.019	93.423	101.086	98.719	-	-
DW9: *Army Kwajalein Atoll Restoration And Modernization*	-	4.660	12.820	14.810	-	14.810	14.809	14.820	14.828	14.825	-	-
DX2: *Army Kwajalein Test Ranges and Mission Support*	-	63.587	66.163	66.709	-	66.709	66.284	65.928	66.340	68.454	-	-

A. Mission Description and Budget Item Justification

The U.S. Army Kwajalein Atoll/Ronald Reagan Ballistic Missile Defense Test Site (USAKA/RTS), located in the Republic of the Marshall Islands, is a remote, secure activity of the Major Range and Test Facility Base (MRTFB). Its function is to support test and evaluation of major Army and DoD acquisition programs and to provide space operations (surveillance and object identification) in support of U.S. Strategic Command (USSTRATCOM) and National Aeronautics and Space Administration (NASA) scientific and space programs. Programs supported include Army missile defense, Air Force and Navy Intercontinental Ballistic Missile (ICBM) developmental and operational tests; Army, Air Force, Navy and Defense Advanced Research Projects Agency (DARPA) hypersonic developmental tests; Missile Defense Agency (MDA) operational/demonstration/validation tests; , USSTRATCOM space situational awareness requirements (inc contributions to the U.S. Space Surveillance Network); and space experiments. USAKA/RTS is a government-managed/contractor-operated (GMCO) site and is dependent upon its associated support contractors for operations and maintenance (O&M). Program funds contractors to accomplish O&M for both the RTS instrumentation suite and installation/base operations and provides mission essential bandwidth via a fiber optics cable system. Funding is required to maintain O&M support, while accepting moderate risk of continued degradation of USAKA/RTS infrastructure (housing, offices, and facilities), higher future repair costs, and reduced logistical support capability. The instrumentation suite consists of a number of sophisticated, one-of-a-kind, radar, optical, telemetry, command/control/communications, safety, and data reduction systems. These systems include the four unique radars of the Kiernan Reentry Measurement Site (KREMS); Super Recording Automatic Digital Optical Tracker (SRADOT) long range video-metric tracking systems; high density data recorders for high data-rate telemetry collected by ten antennas; an underwater acoustic impact location system; and data analysis/reduction hardware/software and CONUS based mission control center. The Advanced Research Project Agency (ARPA) Long-Range Tracking and Instrumentation Radar (ALTAIR), and the Target Resolution Discrimination Experiment (TRADEX) radars located at RTS, are the only radars in this area of operation that have deep-space tracking capability. The Millimeter Wave Radar (MMW) is one of the highest resolution imaging radars in the world providing critical intelligence data. Funding enables weapon system assessment of operational effectiveness and suitability for the Army, Air Force, Navy and MDA, which all have programs planned that have significant test and data gathering requirements at RTS. This test data cannot be obtained except through the use of technical facilities available on and in the vicinity of RTS. Program supports Army's PATRIOT air defense system; Air Force's Minuteman III ICBM and the Space and Missile Center's associated programs; MDA's Ballistic Missile Defense System, ICBM Targets, and Layered Ballistic Missile Defense operational tests (including: PATRIOT, Terminal High-Altitude Area Defense (THAAD), and AEGIS weapon systems), and NASA's space experiments.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605301A *I Army Kwajalein Atoll*

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	175.956	205.145	189.452	-	189.452
Current President's Budget	169.699	203.905	236.648	-	236.648
Total Adjustments	-6.257	-1.240	47.196	-	47.196
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-6.257	-			
• Adjustments to Budget Years	-	-1.240	47.196	-	47.196

Change Summary Explanation

FY2017 increase is to fund Base Operations/Infrastructure requirements in support of the Kwajalein Atoll mission. Increased funding supports transportation/ installation operations, equipment maintenance and sustainment activities. Increased funds also provides the required fuel to support transportation and electrical generators. Approximately 90% of fuel consumed on the Atoll is used to provide power generation supporting electrical services, heating/cooling services, water services and waste water services. Due to the remote location of the Atoll, cost of delivering Base and Logistical support services require $3 spent to receive $1 worth of material or service.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605301A / *Army Kwajalein Atoll*	Project (Number/Name) DW7 / *Army Kwajalein Atoll Facilities Sustainment*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DW7: *Army Kwajalein Atoll Facilities Sustainment*	-	10.300	41.625	35.043	-	35.043	39.596	41.879	42.730	43.218	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Provides resources for preventive maintenance and repair necessary to sustain Kwajalein facilities preventing further deterioration and allows keeping good facilities in working order and in accordance with industry standards. The proposed FY17 funding of $35.043 million is 70% of the DoD Facility Sustainment Model 16.2 requirement. Kwajalein facilities currently exhibit significant deterioration due to harsh environmental climate and historical resource shortfalls.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Facility Sustainment	10.300	41.625	35.043
Description: Facilities Sustainment ***FY 2015 Accomplishments:*** Sustained some deteriorated facility infrastructure on US Army Garrison Kwajalein Atoll (USAGKA). ***FY 2016 Plans:*** Sustains more of the deterioreated facilites and allows improvement to some facility infrastructure on US Army Garrison Kwajalein Atoll (USAGKA). ***FY 2017 Plans:*** Sustains current condition of facility infrastructure on US Army Garrison Kwajalein Atoll (USAGKA).			
Accomplishments/Planned Programs Subtotals	10.300	41.625	35.043

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605301A / *Army Kwajalein Atoll*	Project (Number/Name) DW8 / *Army Kwajalein Atoll Installation Services*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DW8: *Army Kwajalein Atoll Installation Services*	-	91.152	83.297	120.086	-	120.086	128.019	93.423	101.086	98.719	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program resources Base Operations/Installation Services Support for U.S. Army Kwajalein (USAKA) located in the Republic of the Marshall Islands, a remote, secure activity designated as a Major Range and Test Facility Base. Kwajalein is a government-managed/contractor-operated site and is primarily dependent upon its associated support contracts for the daily operations and maintenance of Base Ops/Installation Services Support. Installation Services Support consists of Medical/ Dental Services; Education (K-12) Services; Food/Grocery Services; Contracted Security Guards; Aviation/Marine support; and logistical (fuel/transportation) operations support requirements. Base Operations/Installation Services Support resourcing is a critical enabler to ensure continuity of operations supporting Test and Evaluation and Space Operations of the Reagan Test Site in its role as a Major Range and Test Facility Base Activity.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Base Operations Support	47.418	41.460	61.567
Description: Provides for Base Operations to ensure the health, safety and welfare of garrison, tenant personnel, and families. Functions supported: Installation Management, Administrative and Civil Law, Criminal Law and Discipline, Client Services, Claims, Religious Support, Public Affairs, Equal Employment Opportunity (EEO), Internal Review, Installation Safety and Occupational Health, Administrative Services, Resource/Financial Management, Unaccompanied Personnel Housing and Basic Officers Quarters Management, Family Housing Management, Army Substance Abuse Program, Army Community Services, Child and Youth Sports, Recreation, and Libraries, Business Operations, Schools, Fire and Emergency Response Services, Custodial Services, Refuse Removal, Grounds Maintenance, Electrical Services, Heating/Cooling Services, Water Services, Waste Water Services, Other Utility Services, Compliance and Conservation Programs, Pollution Prevention Programs, Indoor and Outdoor Pest Management, Physical Security, Law Enforcement Services, Anti-Terrorism Services, Installation Security Program Management Support, Army Emergency Management Services, Military Personnel Services, Civilian Personnel Services, Continuing Education, Emergency Disaster Prep, Host Nation Services, and Protocol Services. ***FY 2015 Accomplishments:*** Provided Base Operations to ensure the health, safety and welfare of garrison, tenant personnel, and families. Functions supported: Installation Management, Administrative and Civil Law, Criminal Law and Discipline, Client Services, Claims, Religious Support, Public Affairs, Equal Employment Opportunity (EEO), Internal Review, Installation Safety and Occupational Health, Administrative Services, Resource/Financial Management, Unaccompanied Personnel Housing and Basic Officers Quarters Management, Family Housing Management, Army Substance Abuse Program, Army Community Services, Child and Youth			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DW8 / *Army Kwajalein Atoll Installation Services*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Sports, Recreation, and Libraries, Business Operations, Schools, Fire and Emergency Response Services, Custodial Services, Refuse Removal, Grounds Maintenance, Electrical Services, Heating/Cooling Services, Water Services, Waste Water Services, Other Utility Services, Compliance and Conservation Programs, Pollution Prevention Programs, Indoor and Outdoor Pest Management, Physical Security, Law Enforcement Services, Anti-Terrorism Services, Installation Security Program Management Support, Army Emergency Management Services, Military Personnel Services, Civilian Personnel Services, Continuing Education, Emergency Disaster Prep, Host Nation Services, and Protocol Services. ***FY 2016 Plans:*** Provides for Base Operations to ensure the health, safety and welfare of garrison, tenant personnel, and families. Functions supported: Installation Management, Administrative and Civil Law, Criminal Law and Discipline, Client Services, Claims, Religious Support, Public Affairs, Equal Employment Opportunity (EEO), Internal Review, Installation Safety and Occupational Health, Administrative Services, Resource/Financial Management, Unaccompanied Personnel Housing and Basic Officers Quarters Management, Family Housing Management, Army Substance Abuse Program, Army Community Services, Child and Youth Sports, Recreation, and Libraries, Business Operations, Schools, Fire and Emergency Response Services, Custodial Services, Refuse Removal, Grounds Maintenance, Electrical Services, Heating/Cooling Services, Water Services, Waste Water Services, Other Utility Services, Compliance and Conservation Programs, Pollution Prevention Programs, Indoor and Outdoor Pest Management, Physical Security, Law Enforcement Services, Anti-Terrorism Services, Installation Security Program Management Support, Army Emergency Management Services, Military Personnel Services, Civilian Personnel Services, Continuing Education, Emergency Disaster Prep, Host Nation Services, and Protocol Services. ***FY 2017 Plans:*** Provides for Base Operations to ensure the health, safety and welfare of garrison, tenant personnel, and families. Functions supported: Installation Management, Administrative and Civil Law, Criminal Law and Discipline, Client Services, Claims, Religious Support, Public Affairs, Equal Employment Opportunity (EEO), Internal Review, Installation Safety and Occupational Health, Administrative Services, Resource/Financial Management, Unaccompanied Personnel Housing and Basic Officers Quarters Management, Family Housing Management, Army Substance Abuse Program, Army Community Services, Child and Youth Sports, Recreation, and Libraries, Business Operations, Schools, Fire and Emergency Response Services, Custodial Services, Refuse Removal, Grounds Maintenance, Electrical Services, Heating/Cooling Services, Water Services, Waste Water Services, Other Utility Services, Compliance and Conservation Programs, Pollution Prevention Programs, Indoor and Outdoor Pest Management, Physical Security, Law Enforcement Services, Anti-Terrorism Services, Installation Security Program Management Support, Army Emergency Management Services, Military Personnel Services, Civilian Personnel Services, Continuing Education, Emergency Disaster Prep, Host Nation Services, and Protocol Services.			
Title: Logistical Support	37.434	35.341	51.828

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DW8 / *Army Kwajalein Atoll Installation Services*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017

Description: Provides all logistic functions to include marine and air field operations along with transportation, supply, laundry, food service and maintenance. Transportation includes the operation of transportation motor pools, installation transportation offices, intra-installation rail equipment, and cost of leased vehicles; also includes storage and movement of privately-owned household goods of military personnel (and civilian personnel in overseas areas). Excludes OSA and Watercraft. Supply provides for installation supply operations which include: Ammunition Supply Point services, operation of a central receiving point for goods delivered to the installation, management of Organizational Clothing and Individual Equipment (OCIE), management of non-deployable installation property, and receipt, storage, issue, reutilization and tracking of hazardous materials, secondary items and bulk petroleum for garrison and non-brigade tenant units. Procures petroleum, oils and lubricants (POL) of which approximately 90% of POL is for power generation and the remainder for intra atoll marine and aviation transportation, and for intra-island land transportation and heavy equipment. Laundry account funds Government Owned Contractor Operated (GOCO) and Contractor Owned Contractor Operated (COCO) facilities that provide laundry and dry cleaning service for OCIE items to units IAW AR 210-130. Food account funds the operation of Active, Guard, and Reserve dining facilities and Troop Issue Subsistence Activities (TISA), including pay of government and contract employees, food service supplies, and replacement equipment. Maintenance includes DS/GS support maintenance (Non-Tactical Support).

FY 2015 Accomplishments:
Provided logistic functions to include marine and air field operations along with transportation, supply, laundry, food service and maintenance. Transportation included the operation of transportation motor pools, installation transportation offices, intra-installation rail equipment, and cost of leased vehicles; also included storage and movement of privately-owned household goods of military personnel (and civilian personnel in overseas areas). Excludes OSA and Watercraft. Supply provided for installation supply operations which included: Ammunition Supply Point services, operation of a central receiving point for goods delivered to the installation, management of Organizational Clothing and Individual Equipment (OCIE), management of non-deployable installation property, and receipt, storage, issue, reutilization and tracking of hazardous materials, secondary items and bulk petroleum for garrison and non-brigade tenant units. Procured petroleum, oils and lubricants (POL) of which approximately 90% of POL was for power generation and the remainder for intra atoll marine and aviation transportation, and for intra-island land transportation and heavy equipment. Laundry account funded Government Owned Contractor Operated (GOCO) and Contractor Owned Contractor Operated (COCO) facilities that provided laundry and dry cleaning service for OCIE items to units IAW AR 210-130. Food account funded the operation of Active, Guard, and Reserve dining facilities and Troop Issue Subsistence Activities (TISA), including pay of government and contract employees, food service supplies, and replacement equipment. Maintenance included DS/GS support maintenance (Non-Tactical Support).

FY 2016 Plans:
Provides all logistic functions to include marine and air field operations along with transportation, supply, laundry, food service and maintenance. Transportation includes the operation of transportation motor pools, installation transportation offices, intra-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DW8 / *Army Kwajalein Atoll Installation Services*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
installation rail equipment, and cost of leased vehicles; also includes storage and movement of privately-owned household goods of military personnel (and civilian personnel in overseas areas). Excludes OSA and Watercraft. Supply provides for installation supply operations which include: Ammunition Supply Point services, operation of a central receiving point for goods delivered to the installation, management of Organizational Clothing and Individual Equipment (OCIE), management of non-deployable installation property, and receipt, storage, issue, reutilization and tracking of hazardous materials, secondary items and bulk petroleum for garrison and non-brigade tenant units. Procures petroleum, oils and lubricants (POL) of which approximately 90% of POL is for power generation and the remainder for intra atoll marine and aviation transportation, and for intra-island land transportation and heavy equipment. Laundry account funds Government Owned Contractor Operated (GOCO) and Contractor Owned Contractor Operated (COCO) facilities that provide laundry and dry cleaning service for OCIE items to units IAW AR 210-130. Food account funds the operation of Active, Guard, and Reserve dining facilities and Troop Issue Subsistence Activities (TISA), including pay of government and contract employees, food service supplies, and replacement equipment. Maintenance includes DS/GS support maintenance (Non-Tactical Support). ***FY 2017 Plans:*** Provides all logistic functions to include marine and air field operations along with transportation, supply, laundry, food service and maintenance. Transportation includes the operation of transportation motor pools, installation transportation offices, intra-installation rail equipment, and cost of leased vehicles; also includes storage and movement of privately-owned household goods of military personnel (and civilian personnel in overseas areas). Excludes OSA and Watercraft. Supply provides for installation supply operations which include: Ammunition Supply Point services, operation of a central receiving point for goods delivered to the installation, management of Organizational Clothing and Individual Equipment (OCIE), management of non-deployable installation property, and receipt, storage, issue, reutilization and tracking of hazardous materials, secondary items and bulk petroleum for garrison and non-brigade tenant units. Procures petroleum, oils and lubricants (POL) of which approximately 90% of POL is for power generation and the remainder for intra atoll marine and aviation transportation, and for intra-island land transportation and heavy equipment. Laundry account funds Government Owned Contractor Operated (GOCO) and Contractor Owned Contractor Operated (COCO) facilities that provide laundry and dry cleaning service for OCIE items to units IAW AR 210-130. Food account funds the operation of Active, Guard, and Reserve dining facilities and Troop Issue Subsistence Activities (TISA), including pay of government and contract employees, food service supplies, and replacement equipment. Maintenance includes DS/GS support maintenance (Non-Tactical Support).			
Title: Medical/Dental Support ***Description:*** Supports a fully operational community hospital, a secondary medical clinic, veterinarian services, physical therapy clinic and a dental clinic. Support includes but is not limited to medical lab and imaging services, pharmacy services, medical services management, and all medical functions to include inspections of medical facilities and calibration of equipment. ***FY 2015 Accomplishments:***	6.300	6.496	6.691

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DW8 / *Army Kwajalein Atoll Installation Services*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Supported a fully operational community hospital, a secondary medical clinic, veterinarian services, physical therapy clinic and a dental clinic. Support includes but is not limited to medical lab and imaging services, pharmacy services, medical services management, and all medical functions to include inspections of medical facilities and calibration of equipment. ***FY 2016 Plans:*** Support a fully operational community hospital, a secondary medical clinic, veterinarian services, physical therapy clinic and a dental clinic. Support includes but is not limited to medical lab and imaging services, pharmacy services, medical services management, and all medical functions to include inspections of medical facilities and calibration of equipment. ***FY 2017 Plans:*** Support a fully operational community hospital, a secondary medical clinic, veterinarian services, physical therapy clinic and a dental clinic. Support includes but is not limited to medical lab and imaging services, pharmacy services, medical services management, and all medical functions to include inspections of medical facilities and calibration of equipment.			
Accomplishments/Planned Programs Subtotals	91.152	83.297	120.086

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605301A / *Army Kwajalein Atoll*	Project (Number/Name) DW9 / *Army Kwajalein Atoll Restoration And Modernization*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DW9: *Army Kwajalein Atoll Restoration And Modernization*	-	4.660	12.820	14.810	-	14.810	14.809	14.820	14.828	14.825	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funds the restoration and modernization of U.S. Army Kwajalein Atoll degraded infrastructure (real property/facilities) to working condition and upgrades facilities to meet current standards. Restoration consists of repair and replacement work to fix facilities degraded due to the effects of aging and inadequate sustainment funding for a number of years. Modernization supports upgrade of facilities to meet current codes, accommodate new functions, and/or replace building components that exceed the overall service life of the facilities. The proposed funding levels support a small fraction of critical infrastructure restoration and modernization work necessary to current and enduring deficiencies based analysis of infrastructure identified.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Facility Restoration / Modernization	4.660	12.820	14.810
Description: Funding is provided for updates to and/or replacement of critical infrastructure supporting the mission operations and quality of life of the island tenants. Restores at risk to health and safety facilities due to inadequate sustainment in past years. ***FY 2015 Accomplishments:*** Provided minor updates to infrastructure critical to the mission and well being of the island tenants. Restored facilities currently at risk of causing potential health and safety issues for the civilians, military, and families stationed on the island due to inadequate sustainment over the past several years. ***FY 2016 Plans:*** Provides for updates and/or replacement of infrastructure critical to the mission and well being of the island tenants. Will restore facilities currently at risk to the health and safety of the civilians, military, and families stationed on the island due to inadequate sustainment in past years. ***FY 2017 Plans:*** Will continue to provide for additional updates and/or replacement of infrastructure critical to the mission and well being of the island tenants. Will continue to restore facilities currently at risk to the health and safety of the civilians, military, and families stationed on the island due to inadequate sustainment in past years.			
Accomplishments/Planned Programs Subtotals	4.660	12.820	14.810

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DW9 / *Army Kwajalein Atoll Restoration And Modernization*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605301A / *Army Kwajalein Atoll*	Project (Number/Name) DX2 / *Army Kwajalein Test Ranges and Mission Support*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DX2: *Army Kwajalein Test Ranges and Mission Support*	-	63.587	66.163	66.709	-	66.709	66.284	65.928	66.340	68.454	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project DX2 was created in 2013 as allocation for 665301.DX2, realigned from 665301.614. New Start 2017 - Army Contracting Command (ACC) Support.

A. Mission Description and Budget Item Justification

A. Space and Missile Defense Command-Army Forces Strategic Command (USASMDC-ARSTRAT) funding is for management and contracting personnel support (salaries and travel) to enable the management of the test and evaluation of major Army and DoD missile systems for the Ronald Reagan Ballistic Missile Defense Test Site (RTS). RTS began its funding under Project Element 665301.DX2 in FY14. RTS is a tenant on the US Army Garrison - Kwajalein Atoll (USAG-KA), located within the Kwajalein Atoll in the Republic of the Marshall Islands, which is a remote, secure activity of the Major Range and Test Facility Base (MRTFB). Its function is to support test and evaluation of major Army and DoD acquisition programs and to provide space operations (Space Situational Awareness; object tracking & identification) in support of U.S. Strategic Command (USSTRATCOM) and National Aeronautics and Space Administration (NASA) scientific and unique space programs. Programs supported include Army Missile Defense, Air Force, and Navy Intercontinental Ballistic Missile (ICBM) developmental and operational tests; Army, Air Force, Navy, and Defense Advanced Research Projects Agency (DARPA) hypersonic Boost-Glide developmental tests; Missile Defense Agency (MDA) operational/demonstration/ validation tests; USSTRATCOM space situational awareness requirements (including contributions to the U.S. Space Surveillance Network); and NASA, ionospheric studies, space debris tracking, and data collection in support of space experiments. RTS is a government-managed/contractor-operated (GMCO) site and is dependent upon its associated support contractors for operations and maintenance (O&M). Program funds contracting support for end item procurement, life cycle acquisition planning, and solicitation, negotiation, award, execution and management for weapon systems contracts. Program funds contractors to accomplish O&M for RTS instrumentation suites and provides mission essential bandwidth via a fiber optics cable system. The instrumentation suite consists of a number of sophisticated, one-of-a-kind, radar, optical, telemetry, command/control/communications, safety, and data reduction systems. These systems include the four unique radars of the Kiernan Reentry Measurement Site (KREMS); Super Recording Automatic Digital Optical Tracker (SRADOT) long range video-metric tracking systems; high density data recorders for high data-rate telemetry collected by ten antennas; an underwater acoustic impact location system; and data analysis/reduction hardware/software and CONUS based mission control center. The Advanced Research Project Agency (ARPA) Long-Range Tracking and Instrumentation Radar (ALTAIR), and the Target Resolution Discrimination Experiment (TRADEX) radars located at RTS, are the only radars in this area of operation that have deep-space tracking capability. The Millimeter Wave Radar (MMW) is one of the highest resolution imaging radars in the world providing critical intelligence data. Funding enables weapon system assessment of operational effectiveness and suitability for the Army, Air Force, Navy and MDA, which all have programs planned that have significant test and data gathering requirements at RTS. This test data cannot be obtained except through the use of technical facilities available on and in the vicinity of RTS. Program supports Army's PATRIOT air defense system; Air Force's Minuteman III ICBM and the Space and Missile Center's associated programs; MDA's Ballistic Missile Defense System, ICBM Targets, and Layered Ballistic Missile Defense operational tests (including: PATRIOT, Terminal High-Altitude Area Defense (THAAD), and AEGIS weapon systems), and NASA's space experiments.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DX2 / *Army Kwajalein Test Ranges and Mission Support*

NETCOM - The Network Enterprise Technology Command (NETCOM) funds Department of Army civilian pay, manpower service contracts, supporting IT equipment, and associated costs specifically identified and measurable to plan, manage, coordinate, and execute Information Technology Services Management. Provides Command, Control, Communications, Computers, and Information Management (C4IM) services in accordance with the DA PAM 25-1-1 and the Army C4IM Services List. Provides Base Communications Support (Service 701), Visual Information (Service 702), Information Assurance (Service 703), and Automation (Service 700). Includes the delivery of services consisting of secure and non-secure fixed voice communications, wireless voice, data and video connectivity services, and studio video conferencing services. Provides infrastructure support, including the design, installation, and maintenance of special circuits/systems in support of life safety/ security systems and monitoring/control systems. Provides Collaboration and Messaging Services including services and tools for workforce to communicate and share information. Provides Application and Web-hosting including operation and management services required to support web and application hosting. Provides Desktop Management Support including management and support for end-user hardware and software services and tools. Includes Service Desk Support, Continuity of Operations, and Disaster Recovery support.
Justification: Each of the baseline services provided with this funding are priority zero, must fund, IT utility requirements. Not funding or reducing the programmed funding will directly impact communications and mission command at all levels on Kwajalein Atoll.
Memorandum of Agreement (MOA) between USASMDC/ARSTRAT and NETCOM: The 16 August 2013 signed MOA between USASMDC/ARSTRAT and NETCOM formally transfers baseline C4IM functional Areas of Responsibility (Base Communications Support, Information Assurance, and Automation) to NETCOM. This MOA defines the roles and responsibilities between USASMDC/NETCOM as well as transfers all USAKA Network Enterprise Center missions, functions, support functions, and programmed resources to support execution of the baseline C4IM Services. Above baseline services will remain an SMDC responsibility to program and support.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Civilian Pay (RTS)	3.786	3.843	5.488
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide government personnel support (salaries, training, and travel, GPC) to enable the management of the test and evaluation of major Army and DoD missile systems. ***FY 2016 Plans:*** Continues to provide government personnel support (salaries, training, and travel, and Government Purchase Card (GPC) requirements) to enable the management of the test and evaluation of major Army and DoD missile systems. ***FY 2017 Plans:*** Will continue to provide government personnel support (salaries, training, and travel, and Government Purchase Card (GPC) requirements) to enable the management of the test and evaluation of major Army and DoD missile systems.			
Title: TDY/Training/Supplies - Military and Civilian	0.277	0.620	0.630
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DX2 / *Army Kwajalein Test Ranges and Mission Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued to provide government personnel support (training, and travel, GPC) to enable the management of the test and evaluation of major Army and DoD missile systems. ***FY 2016 Plans:*** Continues to provide government personnel support (training, and travel, GPC) to enable the management of the test and evaluation of major Army and DoD missile systems. ***FY 2017 Plans:*** Will continue to provide government personnel support (training, and travel, GPC) to enable the management of the test and evaluation of major Army and DoD missile systems.			
Title: Outside Obligations/Other Government Agencies ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide support to test and evaluation of major Army and DoD missile systems. ***FY 2016 Plans:*** Continues to provide support to test and evaluation of major Army and DoD missile systems. ***FY 2017 Plans:*** Will continue to provide support to test and evaluation of major Army and DoD missile systems.	4.319	5.160	5.237
Title: Fiber Optic Cable (Kwajalein Cable System)/Inner Ring Submarine ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide funding for lease of the Kwajalein Cable System (KCS) fiber optic cable between Kwajalein Island and Guam, and for backup satellite. ***FY 2016 Plans:*** Continues to provide funding for lease of the KCS fiber optic cable between Kwajalein Island and Guam, and for backup satellite. ***FY 2017 Plans:*** Will continue to provide funding for lease of the KCS fiber optic cable between Kwajalein Island and Guam, and for backup satellite.	12.513	12.566	11.374
Title: RTS Contractor Prime Pay (KRS)	12.611	20.258	20.562

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DX2 / *Army Kwajalein Test Ranges and Mission Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide technical Operations and Maintenance (O&M) support (test planning, instrumentation operations and maintenance, systems engineering, flight safety, launch ordnance, Kwajalein Mobile range Safety System (WORTHY, etc) to assure the capability of the Range to support test and space missions. ***FY 2016 Plans:*** Continues to provide technical O&M support (test planning, instrumentation operations and maintenance, systems engineering, flight safety, launch ordnance, Kwajalein Mobile range Safety System (WORTHY, etc) to assure the capability of the Range to support test and space missions. ***FY 2017 Plans:*** Will continue to provide technical O&M support (test planning, instrumentation operations and maintenance, systems engineering, flight safety, and launch ordnance) to assure the capability of the Range to support test and space missions.			
Title: Contractor Material ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide critical non-labor materials to maintain critical range capabilities and prevent obsolescence in support of test operations. ***FY 2016 Plans:*** Continues to provide critical non-labor materials to maintain critical range capabilities and prevent obsolescence in support of test operations. ***FY 2017 Plans:*** Will continue to provide critical non-labor materials to maintain critical range capabilities and prevent obsolescence in support of test operations.	3.401	2.169	1.840
Title: FFRDC Contractor Pay (MIT/LL) ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:***	4.602	4.602	4.671

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DX2 / *Army Kwajalein Test Ranges and Mission Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued to provide technical advice to RTS leadership in support of Range operations, strategic planning, and technical execution of critical technology. ***FY 2016 Plans:*** Continues to provide technical advice to RTS leadership in support of Range operations, strategic planning, and technical execution of critical technology. ***FY 2017 Plans:*** Will continue to provide technical advice to RTS leadership in support of Range operations, strategic planning, and technical execution of critical technology.			
Title: Contractor Pay Meteorological ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide support for sustained weather sensing capabilities, including weather reporting via radar data. This capability provides critical data to test planning and execution. ***FY 2016 Plans:*** Continues to provide support for sustained weather sensing capabilities, including weather reporting via radar data. This capability provides critical data to test planning and execution. ***FY 2017 Plans:*** Will continue to provide support for sustained weather sensing capabilities, including weather reporting via radar data. This capability provides critical data to test planning and execution.	3.786	1.897	1.925
Title: Ground Transportation ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide mission specific material and passenger transportation via air (Air Mobility Command) and sea (SDDC) between Kwajalein Atoll and CONUS. ***FY 2016 Plans:*** Continues to provide mission specific material and passenger transportation via air (Air Mobility Command) and sea (SDDC) between Kwajalein Atoll and CONUS. ***FY 2017 Plans:***	1.446	1.446	1.468

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DX2 / *Army Kwajalein Test Ranges and Mission Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue to provide mission specific material and passenger transportation via air (Air Mobility Command) and sea (SDDC) between Kwajalein Atoll and CONUS.			
Title: Mission Specific Environmental ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Continued to provide the capability to assess and maintain the Range readiness and compliance with environmental requirements. ***FY 2016 Plans:*** Continues to provide the capability to assess and maintain the Range readiness and compliance with environmental requirements. ***FY 2017 Plans:*** Will continue to provide the capability to assess and maintain the Range readiness and compliance with environmental requirements.	0.310	0.526	0.534
Title: USNS Worthy - Shipyard ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Addresses obsolescence and maintenance requirements in support of upcoming test missions.	4.000	-	-
Title: Network Enterprise Technology Command (NETCOM) C4IM ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** NETCOM - The Network Enterprise Technology Command (NETCOM) funds Department of Army civilian pay, manpower service contracts, supporting IT equipment, and associated costs specifically identified and measurable to plan, manage, coordinate, and execute Information Technology Services Management. Provided Command, Control, Communications, Computers, and Information Management (C4IM) services in accordance with the DA PAM 25-1-1 and the Army C4IM Services List. Provided Base Communications Support (Service 701), Visual Information (Service 702), Information Assurance (Service 703), and Automation (Service 700). Includes the delivery of services consisting of secure and non-secure fixed voice communications, wireless voice, data and video connectivity services, and studio video conferencing services. Provided infrastructure support, including the design, installation, and maintenance of special circuits/systems in support of life safety/security systems and monitoring/control systems. Provided Collaboration and Messaging Services including services and tools for workforce to	12.536	12.680	12.584

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DX2 / *Army Kwajalein Test Ranges and Mission Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
communicate and share information. Provided Application and Web-hosting including operation and management services required to support web and application hosting. Provided Desktop Management Support including management and support for end-user hardware and software services and tools. Included Service Desk Support, Continuity of Operations, and Disaster Recovery support. Justification: Each of the baseline services provided with this funding are priority zero, must fund, IT utility requirements. Not funding or reducing the programmed funding will directly impact communications and mission command at all levels on Kwajalein Atoll. ***FY 2016 Plans:*** NETCOM - The Network Enterprise Technology Command (NETCOM) funds Department of Army civilian pay, manpower service contracts, supporting IT equipment, and associated costs specifically identified and measurable to plan, manage, coordinate, and execute Information Technology Services Management. Provides Command, Control, Communications, Computers, and Information Management (C4IM) services in accordance with the DA PAM 25-1-1 and the Army C4IM Services List. Provides Base Communications Support (Service 701), Visual Information (Service 702), Information Assurance (Service 703), and Automation (Service 700). Include delivery of services consisting of secure and non-secure fixed voice communications, wireless voice, data and video connectivity services, and studio video conferencing services. Provides infrastructure support, including the design, installation, and maintenance of special circuits/systems in support of life safety/security systems and monitoring/ control systems. Provides Collaboration and Messaging Services including services and tools for workforce to communicate and share information. Provide Application and Web-hosting including operation and management services required to support web and application hosting. Provides Desktop Management Support including management and support for end-user hardware and software services and tools. Include Service Desk Support, Continuity of Operations, and Disaster Recovery support. Justification: Each of the baseline services to be provided with this funding are priority zero, must fund, IT utility requirements. Not funding or reducing the programmed funding will directly impact communications and mission command at all levels on Kwajalein Atoll. ***FY 2017 Plans:*** NETCOM - The Network Enterprise Technology Command (NETCOM) will fund Department of Army civilian pay, manpower service contracts, supporting IT equipment, and associated costs specifically identified and measurable to plan, manage, coordinate, and execute Information Technology Services Management. Will provide Command, Control, Communications, Computers, and Information Management (C4IM) services in accordance with the DA PAM 25-1-1 and the Army C4IM Services List. Will provide Base Communications Support (Service 701), Visual Information (Service 702), Information Assurance (Service 703), and Automation (Service 700). Will include delivery of services consisting of secure and non-secure fixed voice communications, wireless voice, data and video connectivity services, and studio video conferencing services. Will provide infrastructure support, including the design, installation, and maintenance of special circuits/systems in support of life safety/ security systems and monitoring/control systems. Will provide Collaboration and Messaging Services including services and			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605301A / *Army Kwajalein Atoll*	**Project (Number/Name)** DX2 / *Army Kwajalein Test Ranges and Mission Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
tools for workforce to communicate and share information. Will provide Application and Web-hosting including operation and management services required to support web and application hosting. Will provide Desktop Management Support including management and support for end-user hardware and software services and tools. To include Service Desk Support, Continuity of Operations, and Disaster Recovery support. Justification: Each of the baseline services to be provided with this funding are priority zero, must fund, IT utility requirements. Not funding or reducing the programmed funding will directly impact communications and mission command at all levels on Kwajalein Atoll.			
Title: Army Contracting Command (ACC) Support ***Description:*** Funding is provided for the following effort. ***FY 2016 Plans:*** Provides contracting support (salaries, training, travel, etc) to test and evaluation of major Army and DoD Missile System. ***FY 2017 Plans:*** Will provide contracting support (salaries, training, travel, etc) to test and evaluation of major Army and DoD Missile System.	-	0.396	0.396
Accomplishments/Planned Programs Subtotals	63.587	66.163	66.709

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605326A *I Concepts Experimentation Program*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	18.757	19.430	25.596	-	25.596	29.339	27.770	57.379	58.473	-	-
312: *Army/Joint Experimentation*	-	2.361	0.506	0.325	-	0.325	0.329	0.352	0.376	0.378	-	-
317: *Current Force Capability Gaps*	-	15.282	17.265	23.779	-	23.779	27.491	25.858	55.405	56.462	-	-
33B: *Soldier-Centered Analyses For Future Force*	-	1.114	1.659	1.492	-	1.492	1.519	1.560	1.598	1.633	-	-

Note

Not Applicable for this item.

A. Mission Description and Budget Item Justification

Army Experimentation program supports current and future concepts and capabilities involving Soldiers and Leaders within live, virtual, and constructive environments of exploring concepts, capability requirements and solution across Doctrine, Organization, Training, Materiel, Leadership and Education, personnel, and Facilities (DOTMLPF) domains in order to learn and mitigate risk for current and future forces. Experiments and projects inform the Army future concepts and assess high-risk conceptual assumptions in order to focus required capabilities and represent the user's requirements in the future Army. Army experiments use the combined resources of Army battle laboratories, operational units, research labs, materiel developers, industry and academia to collaborate in the development, refinements, and assessment of future force concepts - to inform capability developments and validate concepts for current and future force. Due to significant reduction in funding, beginning in FY 2015, Research, Development, Test and Evaluation (RDT&E) funding will on Simulated Experiments (SIMEX) to integrate and assess Army Concepts, Force Designs phases, with Army level issues across the breadth of a campaign that highlights validation and integration of Force 2025 outcomes.

Enables TRADOC Capability Development and Integration Directorates (CDID)/TRADOC Capability Managers (TCM) Joint Capabilities Integration and Development System (JCIDS) development to support Program Executive Offices (PEOs) and Program Managers (PMs) for acquisition milestone decisions. The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT) organizational community of PEOs/PMs supplemented manpower shortfalls to TRADOC for many years. This was necessary to ensure work affecting their materiel development programs, specifically the mandated JCIDS process necessary for Milestone acquisition AROC/JROC decisions, was executed in a timely manner. During POM 14-18, the EE PEG funded a strategy for ASA(ALT) to drawdown support as TRADOC received funding in a phased approach, to maintain this workforce. The strategy has been implemented in 25% increments beginning in FY14 with TRADOC being 100% responsible in FY17. Funding ensures TRADOC acts independently as the voice of the warfighter, the user, in complement with the materiel developer in providing total capability management including integration of all doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF)consideration for warfighting functional areas. Provides for TRADOC serves as the lead for Accelerated Capability Development (ACD) to address current critical operational needs enabling development and deployment/employment of accelerated capabilities (both materiel and non-materiel) to the current force. Early Synthetic Prototyping enables wargaming, experimentation capability that engages soldiers across the Army through early-fidelity game environments to gain their insights and recommendations in the development of future doctrine, organization, and materiel solutions. Serve as TRADOC central coordinating organization for Headquarters Department of the Army

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605326A *I Concepts Experimentation Program*

(HDA) staff support requirements related to accelerated capabilities developments. Integrate accelerated capabilities development activities between proponent force modernization domains to include Joint/Service coordination. Provides Army Warfighter Assessments (AWA), which will allow TRADOC to physically integrate, assess and evaluate the network, capability sets and other adaptive capabilities to accelerate the systems acquisition process of providing DOTMLPF recommendations to the Army. Provides support to the Army Warfighting Challenges (AWFC) that are used by the Army to frame learning and collaboration.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	19.430	19.430	33.788	-	33.788
Current President's Budget	18.757	19.430	25.596	-	25.596
Total Adjustments	-0.673	0.000	-8.192	-	-8.192
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.673	-			
• Adjustments to Budget Years	-	-	-8.192	-	-8.192

Change Summary Explanation

2017 Reduction attributed to realignment to other higher priority programs.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605326A / *Concepts Experimentation Program*	Project (Number/Name) 312 / *Army/Joint Experimentation*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
312: *Army/Joint Experimentation*	-	2.361	0.506	0.325	-	0.325	0.329	0.352	0.376	0.378	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

Army Experimentation program supports current and future concepts and capabilities involving Soldiers and Leaders within live, virtual, and constructive environments by exploring concepts, capability requirements and solutions across Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) domains in order to learn and mitigate risk for current and future forces. Experiments inform Army future concepts and assess high-risk conceptual assumptions in order to focus required capabilities and represent the user's requirements in the future Army. Army experiments use the combined resources of Army battle laboratories, operational units, research labs, materiel developers, industry and academia to collaborate in the development, refinements, and assessment of future force concepts - to inform capability developments and validate concepts for current and future force. Due to significant reduction in funding, beginning in FY 2015, Research, Development, Test and Evaluation (RDT&E) funding will partially funds the Army's Simulated Experiment to integrate and assess Army Concepts, Force Designs, and Capabilities. Specifically the Army's tool to support Force 2025 and Beyond (F2025B) Maneuvers to develop, refine, and validate requisite Force 2025 and Beyond Concepts, Operational and Organizational Plans, and DOTMLPF solution to achieve the vision of the Army's Force in the near (2014-2020), mid (2020-2030) and far (2030-2040) terms.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Experimentation - High-Fidelity Live-Virtual-Constructive Experiments	2.361	0.506	0.325
Description: Experiments address concept and capability developments including integration of capabilities for all BCT types; development of future Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) requirements and solutions; and acceleration and integration of capabilities for current force Brigade Combat Teams (BCTs) and above brigade.			
FY 2015 Accomplishments: Simulated Experiments (SIMEX) become the focus to integrate and assess Army Concepts, Force Designs, and Capabilities.			
FY 2016 Plans: Simulated Experiments (SIMEX) will become the focus to integrate and assess Army Comcepts, Force Designs, and Capabilities.			
FY 2017 Plans: Simulated Experiments (SIMEX) will become the focus to integrate and assess Army Concepts, Force Designs, and Capabilities to support Force 2025B Maneuvers to develop, refine, and validate rerequisite Force 2025 and Beyond Concepts, Operational			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 312 / *Army/Joint Experimentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
and Organizational Plans, and DOTMLPF solutions to achieve the vision of the Army's Force in the near (2014-2020), mid (2020-2030), and far (2030-2040) terms.			
Accomplishments/Planned Programs Subtotals	2.361	0.506	0.325

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605326A / *Concepts Experimentation Program*	Project (Number/Name) 317 / *Current Force Capability Gaps*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
317: *Current Force Capability Gaps*	-	15.282	17.265	23.779	-	23.779	27.491	25.858	55.405	56.462	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Programs not funded in FY 2017: Army Expeditionary Warrior Experiment (AEWE), Maneuver Fires Center Integration Exercise (MFIX), Manned Unmanned Teaming Ground (MUM-T(G)), CDID/TCM Joint Capabilities and Integration Development Systems (JCIDS, and Operational Energy (Net Zero Expeditionary Base Camp).

A. Mission Description and Budget Item Justification

Army Experimentation program supports current and future concepts and capabilities involving Soldiers and Leaders within live, virtual, and constructive environments of exploring concepts, capability requirements and solution across Doctrine, Organization, Training, Materiel, Leadership and Education, personnel, and Facilities (DOTMLPF) domains in order to learn and mitigate risk for current and future forces. Experiments and projects inform the Army future concepts and assess high-risk conceptual assumptions in order to focus required capabilities and represent the user's requirements in the future Army. Army experiments use the combined resources of Army battle laboratories, operational units, research labs, materiel developers, industry and academia to collaborate in the development, refinements, and assessment of future force concepts - to inform capability developments and validate concepts for current and future force. Due to significant reduction in funding, beginning in FY 2015, Research, Development, Test and Evaluation (RDT&E) funding will on Simulated Experiments (SIMEX) to integrate and assess Army Concepts, Force Designs phases, with Army level issues across the breadth of a campaign that highlights validation and integration of Force 2025 outcomes.

Enables TRADOC Capability Development and Integration Directorates (CDID)/TRADOC Capability Managers (TCM) Joint Capabilities Integration and Development System (JCIDS) development to support Program Executive Offices (PEOs) and Program Managers (PMs) for acquisition milestone decisions. The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT) organizational community of PEOs/PMs supplemented manpower shortfalls to TRADOC for many years. This was necessary to ensure work affecting their materiel development programs, specifically the mandated JCIDS process necessary for Milestone acquisition AROC/JROC decisions, was executed in a timely manner. During POM 14-18, the EE PEG funded a strategy for ASA(ALT) to drawdown support as TRADOC received funding in a phased approach, to maintain this workforce. The strategy has been implemented in 25% increments beginning in FY14 with TRADOC being 100% responsible in FY17. Funding ensures TRADOC acts independently as the voice of the warfighter, the user, in complement with the materiel developer in providing total capability management including integration of all doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF)consideration for warfighting functional areas. Provides for TRADOC serves as the lead for Accelerated Capability Development (ACD) to address current critical operational needs enabling development and deployment/employment of accelerated capabilities (both materiel and non-materiel) to the current force. Early Synthetic Prototyping enables wargaming, experimentation capability that engages soldiers across the Army through early-fidelity game environments to gain their insights and recommendations in the development of future doctrine, organization, and materiel solutions. Serve as TRADOC central coordinating organization for Headquarters Department of the Army (HDA) staff support requirements related to accelerated capabilities developments. Integrate accelerated capabilities development activities between proponent force modernization domains to include Joint/Service coordination. Provides Army Warfighter Assessments (AWA), which will allow TRADOC to physically integrate, assess

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 317 / *Current Force Capability Gaps*

and evaluate the network, capability sets and other adaptive capabilities to accelerate the systems acquisition process of providing DOTMLPF recommendations to the Army. Provides support to the Army Warfighting Challenges (AWFC) that are used by the Army to frame learning and collaboration.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Counter Improvised Explosive Device Adapt the Force (AtF) (formerly Improvised Explosive Device (IED) Integrated Concept Development Team (ICDT)) ***Description:*** The IED ICDT is responsible for conducting Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) assessments; performs gap analyses identified by HQDA and Joint Urgent Operational Needs Statement (JUONS). ***FY 2015 Accomplishments:*** Lead the Adapt the Force efforts under Army Counter-IED (CIED) Strategy supporting development and maintenance of AtF CIED database and resolution of DOTMLPF issues associated with integration of various CIED initiatives. Responsible for coordination and facilitating IED-Defeat Council of Colonels and General Officer Steering Committees producing guidance and directives for Army-wide IED-Defeat Training initiative and systems. Support TRADOC CoEs with CIED SMEs and products for all CIED Lines of Effort.	1.000	-	-
Title: Operational Energy (formerly Demo/Assess Operational Power and Energy) ***Description:*** Funding is needed for Operational Power and Energy ***FY 2015 Accomplishments:*** Continued acceleration of Operational Energy initiative for remote Combat Outposts and Soldier Power initiatives. Operational Energy provides the warfighter with increased levels of agility, flexibility, and interoperability when operating in the expeditionary environment. Operational energy solutions approach extends combat and tactical systems' mission endurance and resilience, ensure uninterrupted and optimal energy to systems within the mission command network, and mitigate force risk by reducing energy demand. Phase two of multi-phased approached supports development of integrated operational energy solutions, which require a system-of-systems engineering approach. This approach ensures that designs identify and address effects on the force when delivering solutions provide necessary employment guidance and assess impacts on operational effectiveness.	1.000	-	-
Title: Army Expeditionary Warrior Experiment (AEWE) (formerly Prototype Solution Demonstrations) ***Description:*** AEWE addresses live, prototype experimentation requirements. ***FY 2015 Accomplishments:*** This campaign of experiments was critical at the Maneuver Center as we conduct research, development, and experimentation to ensure our future Maneuver Force is prepared and equipped to fight and win in a complex operating environment. Through doctrine development, leveraging emerging technology and partnering with industry, the Maneuver Center is an advocate for the	0.420	0.153	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 317 / *Current Force Capability Gaps*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Maneuver Force. FY15 campaign of experiments, Spiral J, will be focused on technologies to support five primary study areas: Cellular Communications, Robotics, Solider Load and Protection, Power Solutions and Resupply. ***FY 2016 Plans:*** This series of experiments is critical to promote research, development, and experimentation associated with Force 2025 and Beyond (F2025B) efforts. AEWE provides a live prototype experimentation venue to address current operational needs and F2025B requirements. FY16 campaign of experiments, Spiral K, is focused on technologies to support five primary study areas: Cellular Communications, Robics, Solider Load and Protection, Power Solutions, and Resupply.			
Title: Robotics ***Description:*** Testing and demonstration of increased unmanned ground vehicle capabilities. ***FY 2015 Accomplishments:*** Supported the Army robotics Campaign Plan development, and resolution of DOTMLPF issues associated with integration of various Robotics initiatives. Was responsible for the Joint Ground Robotics Integration Team meetings. Produced guidance/ directives for Army-wide Robotic SMEs and products for applicable initiative being resourced and assessed. Included initiatives directly related to robotics such as operational control units (OCUs) like Tactical Robotic Controller and systems linked to the controllers.	1.000	-	-
Title: Tunnel Detection (TD) ***Description:*** Test and demonstration of sensor technology. ***FY 2015 Accomplishments:*** Test and demonstrate a suite of sensor technology systems capable of detecting, exploiting, and remediating, clandestine purpose-built tunnels.	1.000	-	-
Title: Exploitation ***Description:*** Document and Media Exploitation (DOMEX) is the collection and exploitation of captured equipment, documents, and media. ***FY 2015 Accomplishments:*** Document and Media Exploitation (DOMEX) enables tactical, operational, and strategic leaders with accurate information about enemy forces through the rapid and accurate extraction, exploitation, and analysis of captured enemy documents, media, and materiel. Tactically, DOMEX is the collection and exploitation of captured equipment, documents, and media to generate actionable intelligence. The DOMEX is a critical part of target exploitation, especially as it relates to actions on the objective	1.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 317 / *Current Force Capability Gaps*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
during site exploitation activities. Efforts in exploitation also support Special Operations Command (SOCOM) with DOTMLPF assessments of classified solutions supporting technical reconnaissance, and information operations associated with exploitation.			
Title: Non Standard Training Gap Initiative (formerly Non-Standard Capability Training Gaps) ***Description:*** Training for accelerated capabilites is accomplished primarily through mandated New Equipment Training (NET) with no process for follow on efforts. This incongruity is detrimental to effective and consistent training for the force. ***FY 2015 Accomplishments:*** Lead the Non Standard Equipment (NSE) training process initiative supporting the development, execution, evaluation, and maintenance of the 2nd pilot program to develop a standardized and effective NSE training process for deployed units. ARCIC Accelerated Capabilities Division (ACD) responsible for facilitating and coordinating stakeholders in the execution, evaluation, and maintenance of Pilot Program 2 on the NSE training process.	1.162	-	-
Title: Squad Dismounted Non-Network Enabled ***Description:*** Provides integration and assessment support across DOTMLPF. ***FY 2015 Accomplishments:*** TRADOC Accelerated Capability Developments initiative provides integration and assessment support across DOTMLPF domains to equip, train, and deploy capability support for OEF problem of isolated maneuver elements at Command Outposts (COPs)/ Forward Operating Bases (FOBs) which have difficulty locating ground targets and lack timely response to engage these targets in organic, lethal, effects while minimizing collateral damage and exposure of Soldiers to unnecessary risk.	1.000	-	-
Title: Maneuver Fires Center Integration Exercise (MFIX) ***Description:*** Maneuver Fires Center Integration Exercise (MFIX) will conduct Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) assessments. ***FY 2016 Plans:*** MFIX to conduct DOTMLPF assessments; test and certification training in support of small units across 5 domains (lethality, mission command, training and leader development, mobility and force protection). MFIX to integrate efforts to allow small units to operate in complex and uncertain environments, see and fight across a wide area, make contact with the enemy under favorable conditions, overmatch the enemy in encounter actions, maneuver rapidly to seize and retain the initiative, identify and act on opportunities, adapt rapidly to changing battle conditions, and operate as part of a combined arms, air-ground and Joint Team.	-	0.200	-
Title: Net Zero Expeditionary Base Camp (NET 0) (Formerly Operational Energy) ***Description:*** Continue acceleration of Operational Energy initiative for remote Combat Outposts and Soldier Power iniatives.	-	0.275	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 317 / *Current Force Capability Gaps*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2016 Plans: Continue acceleration of Operational Energy initative for remote Combat Outposts and Soldier Power initiatives. Operational Energy provides the Warfighter with increased levels of agility, flexibility, and interoperability when operating in the expeditionary environment. Operational energy solutions will extend combat and tactical system's mission endurance and resilience, ensure uninterrupted and optimal energy to systems within the mission command network, and mitigate force risk by reducing energy demand. Phase two of multi-phased approached will support development of integrated operational energy solutions requiring a system-of-systems engineering approach. This approach will ensure that capability impacts are identified and addressed prior to delivering solutions, and that necessary employment guidance is provided and operational impacts are assessed.			
Title: Manned Unmanned Teaming Ground (MUM-T(G) ***Description:*** Follow-on focused assessment to test interoperability, assess integration with manned systems, and evaluate advanced technologies. ***FY 2016 Plans:*** Follow-on focused assessment to test interoperability, assess integration with manned systems, and evaluate advanced technologies. MUM-T (G) capabilities will provide greater automation, improved performance, flexible use profiles, and greater survivability in contested environments. In addition, system will demonstrate improved communications, security from tampering, and streamlined system design. Capabilities must also demonstrate a reduction in manpower requirements to operate and support unmanned systems.	-	0.203	-
Title: CDID/TCM Joint Capabilities Integration and Development System (JCIDS) Development in support of PEOs and PMs for acquisition milestone decisions. ***Description:*** The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA (ALT) organizational community of PEOs/PMs supplemented manpower shortfalls to TRADOC for many years. This was necessary to ensure work affecting their materiel development programs, specifically the mandated JCIDS process necessary for Milestone Acquisition AROC/JROC decisions, was executed in a timely manner. Beginning in FY 2014 Army funded a strategy for ASA (ALT) to drawdown support as TRADOC received funding in a phased approach, to maintain this workforce. This strategy has been implemented in 25% increments beginning in FY14 with TRADOC being 100% responsible in FY17. Funding ensures TRADOC acts independently as the voice of the warfighter, the user, in complement with the materiel developer in providing total capability management including integration of all doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) considerations for warfighting functional areas. ***FY 2015 Accomplishments:***	7.700	16.434	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 317 / *Current Force Capability Gaps*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Provided approximately 45 CMEs to CDIDs across TRADOC to develop and integrate the capabilities for which the ASA(ALT) community is developing and fielding materiel solutions. FY14 would have been the first year of incremental funding until 100% of the requirement is funded in FY 2017 and beyond. ***FY 2016 Plans:*** Provides approximately 87 CMEs to CDIDs across TRADOC to develop and integrate the capabilities for which the ASA(ALT) community is developing and fielding materiel solution. FY 2014 would have been the first year of incremental funding until 100% of the requirement is funded in FY 2017 and beyond.			
Title: CDID/TCM Joint Capabilities Integration and Development System (JCIDS) Development in support of PEOs and PMs for acquisition milestone decisions ***Description:*** The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA (ALT) organizational community of PEOs/PMs supplemented manpower shortfalls to TRADOC for many years. This was necessary to ensure work affecting their materiel development programs, specifically the mandated JCIDS process necessary for Milestone Acquisition AROC/JROC decisions, was executed in a timely manner. Beginning in FY 2014 Army funded a strategy for ASA (ALT) to drawdown support as TRADOC received funding in a phased approach, to maintain this workforce. This strategy has been implemented in 25% increments beginning in FY14 with TRADOC being 100% responsible in FY17. Funding ensures TRADOC acts independently as the voice of the warfighter, the user, in complement with the materiel developer in providing total capability management including integration of all doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) considerations for warfighting functional areas. ***FY 2017 Plans:*** Will provide approximately 87 CMEs to CDIDS across TRADOC to develop and integrate the capabilities for which the ASA (ALT) community is developing and fielding materiel solution. FY14 would have been the first year of incremental funding until 100% of the requirement is funded in FY17 and beyond.	-	-	21.779
Title: Accelerated Capabilities Initiatives in support of Force 2025 and Beyond ***Description:*** Provide for TRADOC to serve as the lead Accelerated Capability Developments (ACD) to address current critical operational needs in enabling development and deployment/employment of accelerated capabilities (both materiel and non-materiel) to the current force. Serve as TRADOC central coordinating organization for Headquarters Department of the Army (HQDA) staff support requirements related to accelerated capabilities developments. Integrate ACD activities to ensure unity and priority of effort and synchronization and optimization of resources. Integrate accelerated capabilities development activities between proponent force modernization domains to include Joint/Service coordination. ***FY 2017 Plans:***	-	-	2.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 317 / *Current Force Capability Gaps*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will provide for TRADOC to serve as the lead Accelerated Capability Developments (ACD) to address current critical operational needs in enabling development and deployment/employment of accelerated capabilities (both materiel and non-materiel) to the current force. Serve as TRADOC central coordinating organization for Headquarters Department of the Army (HQDA) staff support requirements related to accelerated capabilities developments. Integrate ACD activities to ensure unity and priority of effort and synchronization and optimization of resources. Integrate accelerated capabilities development activities between proponent force modernization domains to include Joint/Service coordination.			
Accomplishments/Planned Programs Subtotals	15.282	17.265	23.779

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605326A / *Concepts Experimentation Program*	Project (Number/Name) 33B / *Soldier-Centered Analyses For Future Force*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
33B: *Soldier-Centered Analyses For Future Force*	-	1.114	1.659	1.492	-	1.492	1.519	1.560	1.598	1.633	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project will provide early application of human performance and human figure modeling tools in the development of Soldier-focused requirements to shape technology for Future Force development. Design analyses, constructive simulations and Soldier-in-the-loop assessments will ensure that manpower requirements and workload and skill demands are considered to avoid information and physical task overloads, and take optimum advantage of aptitudes, individual and collective training, and numbers of Soldiers for an affordable Future Force. The cited work is consistent with the Strategic Planning Guidance, the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and the Defense Technology Area Plan (DTAP). Work in this project is performed by the Army Research Laboratory (ARL).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Manpower and Personnel Integration (MANPRINT)	1.114	1.659	1.492

Description: Provide dedicated modeling and analysis cell for early and accurate MANPRINT estimates to Army Materiel Command (AMC), Research, Development, and Engineering Command (RDECOM) and its Research, Development, and Engineering Centers (RDECs), TRADOC Centers, Schools and Centers of Excellence (CoEs), Army Test and Evaluation Command (ATEC) and other service laboratories.

FY 2015 Accomplishments:
Developed analysis methodologies to quantitatively predict (in dollars and/or mission success) the effect of manpower, personnel, and training issues in system acquisition to inform optimization of Soldier-system performance and affordability.

FY 2016 Plans:
Develop model-based predictive analyses of Dismounted Infantry (DI) missions that will provide DOD leadership with analytic data to inform requirements development and trade-off decisions as early as Milestone A. This analyses will integrate Human Systems Integration (HSI) and Systems Engineering (SE) inputs to generate critical tasks combinations that provide the necessary analytical data to support cognitive workload measurement, Measures of Effectiveness and Measures of Performance for DI. Expand digital library by developing 3D models of Air Soldier Clothing and equipment items to perform early human figure modeling assessments of future aviation platform designs. Develop 3D models of mounted and dismounted Soldier clothing and equipment items that are sized and fitted to ANTHRO II based human figure model sets for early assessments of future ground vehicle platform designs.

FY 2017 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605326A / *Concepts Experimentation Program*	**Project (Number/Name)** 33B / *Soldier-Centered Analyses For Future Force*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will conduct analysis to determine appropriate parameters to capture Soldier information for system engineering that will improve system design and analysis progresses; expand scenario development and model based decision analysis framework to support Soldier system engineering methodology; develop and expand human performance apps for HSI data collection and analysis; expand the digital library by developing 3D models of vehicle Soldier clothing and equipment items to perform early human figure modeling assessments of future vehicle platform designs and enhancements; and demonstrate a virtual physical accommodation analysis concept by integrating a virtual human figure embedded in a space with a CAD representation.			
Accomplishments/Planned Programs Subtotals	1.114	1.659	1.492

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605502A / *Small Business Innovative Research*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	172.658	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
861: *SMALL BUS TECH - AMC*	-	20.928	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
M40: *SMALL BUSINESS-AMC*	-	151.730	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-

Note

The Small Business Innovation Research (or SBIR) program is a United States Government program, coordinated by the Small Business Administration, in which 2.6% of the total extramural research budgets of all federal agencies with extramural research budgets in excess of $100 million are reserved for contracts or grants to small businesses. A similar program, the Small Business Technology Transfer Program (STTR), uses a similar approach to the SBIR program to expand public/private sector partnerships between small businesses and nonprofit U.S. research institutions, and is funded at present at .35% of the relevant agencies' extramural research budgets.

A. Mission Description and Budget Item Justification

There is no FY17 funding. This program is for SBIR only and only shows prior years.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	172.658	0.000	0.000	-	0.000
Total Adjustments	172.658	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	172.658	-			

Change Summary Explanation

FY15 adjustments attributed to internal Army reprogrammings (172.658 million) to support SBIR.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605502A / *Small Business Innovative Research*	Project (Number/Name) 861 / *SMALL BUS TECH - AMC*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
861: *SMALL BUS TECH - AMC*	-	20.928	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Business Innovation Research (or SBIR) program is a United States Government program, coordinated by the Small Business Administration, in which 2.6% of the total extramural research budgets of all federal agencies with extramural research budgets in excess of $100 million are reserved for contracts or grants to small businesses. A similar program, the Small Business Technology Transfer Program (STTR), uses a similar approach to the SBIR program to expand public/private sector partnerships between small businesses and nonprofit U.S. research institutions, and is funded at present at .35% of the relevant agencies' extramural research budgets.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605502A / *Small Business Innovative Research*	Project (Number/Name) M40 / *SMALL BUSINESS-AMC*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M40: *SMALL BUSINESS-AMC*	-	151.730	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Business Innovation Research (or SBIR) program is a United States Government program, coordinated by the Small Business Administration, in which 2.6% of the total extramural research budgets of all federal agencies with extramural research budgets in excess of $100 million are reserved for contracts or grants to small businesses. A similar program, the Small Business Technology Transfer Program (STTR), uses a similar approach to the SBIR program to expand public/private sector partnerships between small businesses and nonprofit U.S. research institutions, and is funded at present at .35% of the relevant agencies' extramural research budgets.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605601A / *Army Test Ranges and Facilities*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	271.377	279.896	293.748	-	293.748	295.388	296.602	293.180	300.977	-	-
F30: *Army Test Ranges & Facilities*	-	271.377	279.896	293.748	-	293.748	295.388	296.602	293.180	300.977	-	-

Note

Beginning in FY17, this project will fund labor for physical security civilian guards and equipment as well as the UH-60 helicopters.

A. Mission Description and Budget Item Justification

This project provides the institutional funding required to operate test activities, in accordance with Section 232 of the FY2003 National Defense Authorization Act (NDAA FY03), required by Department of Defense (DOD) Program Executive Officers, Program and Product Managers, and Research, Development, and Engineering Centers. Resources provided by this project operate seven elements of the DOD Major Range and Test Facility Base (MRTFB): White Sands Test Center (WSTC),White Sands Missile Range, New Mexico; Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; and Yuma Test Center (YTC), Yuma Proving Ground, Arizona, Cold Regions Test Center (CRTC) Fort Greely, Alaska and Tropic Regions Test Center (TRTC) at various locations. This project also funds the Army's test capability at Redstone Test Center (RTC), Redstone Arsenal, Alabama.

This project finances the overhead (institutional) test operating costs not billable to DOD test customers per DODI 3200.18 and DODFMR 7000.14-R, which include recurring test infrastructure/capability sustainment requirements, replacement of test equipment, test operating procedures, and test revitalization/upgrade projects to maintain current testing capabilities and improvements to safety, environmental protection, efficiency of test operations, and technological advances. The test capabilities at these ranges have been uniquely established, are in place to support test and evaluation (T&E) requirements of funded weapons programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, Title 10 Live Fire Test and Evaluation, transportability, environmental effects, electromagnetic effects, and quality of materiel in development and in production.

Beginning in FY17, this project will fund labor for physical security civilian guards and equipment, as well as the UH-60 helicopters. The UH-60 is part of the Aviation Restructure Initiative endorsed by the SECDEF.

This project sustains the T&E capability required to support Army as well as Joint Service or Other Service systems, materiel, and technologies. Types of systems scheduled for testing include: Aircraft, Air Delivery, Unmanned Aerial Systems, Unmanned Ground Vehicles, Air and Missile Defense Systems, Engineering Equipment, Direct fire, Indirect fire, Nonlethal weapons, Ammunition, Automotive Systems, Intelligence Surveillance and Reconnaissance, Ground Soldier System, Missiles, Rockets, Mission Command Network, and Tactical Command, Control, and Communication.

Specific systems supported in FY16 with continued support in FY17 include: Network Integration Evaluation (NIE), Joint Light Tactical Vehicle (JLTV), Rifleman Radio, Joint Assault Bridge, Warfighter Information Network Tactical (WIN-T Inc 2/3), AN/TPQ53 Radar, Distributed Common Ground Sensor - Army (DCGS-A), missile

defense (PAC-3), Army Integrated Air and Missile Defense (AIAMD), Nett Warrior, XM25 Counter Defilade Target Engagement (CDTE), Gray Eagle, Joint Tactical Radio System (JTRS), Soldier Protective System M829E4, 120MM Advanced Kinetic Energy, Precision Guidance Kit (PGK), Mid-tier Networking Vehicular Radios (MNVR).

Direct costs are borne by materiel developers in accordance with DoD Directive 3200.11 and DOD Financial Management Regulation 7000.14R.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	274.980	277.646	258.464	-	258.464
Current President's Budget	271.377	279.896	293.748	-	293.748
Total Adjustments	-3.603	2.250	35.284	-	35.284
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.603	-			
• Adjustments to Budget Years	-	2.250	35.284	-	35.284

Change Summary Explanation

FY 2017 increase in funding to support labor for physical security civilian guards and equipment,UH60 aircraft, the UH-60 is part of the Aviation Restructure Initiative endorsed by the SECDEF and for test capability capacity at the developmental test ranges.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605601A / *Army Test Ranges and Facilities*	Project (Number/Name) F30 / *Army Test Ranges & Facilities*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
F30: *Army Test Ranges & Facilities*	-	271.377	279.896	293.748	-	293.748	295.388	296.602	293.180	300.977	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Beginning in FY17, this project will fund labor for physical security civilian guards and equipment, as well as the UH-60 helicopters.

A. Mission Description and Budget Item Justification

This project provides the institutional funding required to operate test activities, in accordance with Section 232 of the FY2003 National Defense Authorization Act (NDAA FY03), required by Department of Defense (DOD) Program Executive Officers, Program and Product Managers, and Research, Development, and Engineering Centers. Resources provided by this project operate seven elements of the DOD Major Range and Test Facility Base (MRTFB): White Sands Test Center (WSTC),White Sands Missile Range, New Mexico; Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; and Yuma Test Center (YTC), Yuma Proving Ground, Arizona, Cold Regions Test Center (CRTC) Fort Greely, Alaska and Tropic Regions Test Center (TRTC) at various locations. This project also funds the Army's test capability at Redstone Test Center (RTC), Redstone Arsenal, Alabama.

This project finances the overhead (institutional) test operating costs not billable to DOD test customers per DODI 3200.18 and DODFMR 7000.14-R, which include recurring test infrastructure/capability sustainment requirements, replacement of test equipment, test operating procedures, and test revitalization/upgrade projects to maintain current testing capabilities and improvements to safety, environmental protection, efficiency of test operations, and technological advances. The test capabilities at these ranges have been uniquely established, are in place to support test and evaluation (T&E) requirements of funded weapons programs, and are required to assure technical performance, adherence to safety requirements, reliability, logistics supportability, Title 10 Live Fire Test and Evaluation, transportability, environmental effects, electromagnetic effects, and quality of materiel in development and in production.

Beginning in FY17, this project will fund labor for physical security civilian guards and equipment, as well as the UH-60 aircraft. The UH-60 is part of the Aviation Restructure Initiative endorsed by the SECDEF.

This project sustains the T&E capability required to support Army as well as Joint Service or Other Service systems, materiel, and technologies. Types of systems scheduled for testing include: Aircraft, Air Delivery, Unmanned Aerial Systems, Unmanned Ground Vehicles, Air and Missile Defense Systems, Engineering Equipment, Direct fire, Indirect fire, Nonlethal weapons, Ammunition, Automotive Systems, Intelligence Surveillance and Reconnaissance, Ground Soldier System, Missiles, Rockets, Mission Command Network, and Tactical Command, Control, and Communication.

Specific systems supported in FY16 with continued support in FY17 include: Network Integration Evaluation (NIE), Joint Light Tactical Vehicle (JLTV), Rifleman Radio, Joint Assault Bridge, Warfighter Information Network Tactical (WIN-T Inc 2/3), AN/TPQ53 Radar, Distributed Common Ground Sensor - Army (DCGS-A), missile

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605601A / *Army Test Ranges and Facilities*	**Project (Number/Name)** F30 / *Army Test Ranges & Facilities*

defense (PAC-3), Army Integrated Air and Missile Defense (AIAMD), Nett Warrior, XM25 Counter Defilade Target Engagement (CDTE), Gray Eagle, Joint Tactical Radio System (JTRS), Soldier Protective System M829E4, 120MM Advanced Kinetic Energy, Precision Guidance Kit (PGK), Mid-tier Networking Vehicular Radios (MNVR).

Direct costs are borne by materiel developers in accordance with DoD Directive 3200.11 and DOD Financial Management Regulation 7000.14R.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Mission Support	94.452	100.593	81.694
Description: Funds support test equipment upgrades and maintenance; test facility maintenance; routine calibration; handling and disposal of hazardous materials, transportation, postage, administrative supplies; tools; software; spare parts; test support vehicle maintenance; mission unique installation costs; temporary duty/training of civilian and contractor personnel; printing and reproduction; communications; land leases; and range road maintenance. Funding supports indirect costs for MRTFB Activities (ATC, EPG, WSTC, YTC (including CRTC & TRTC)) in accordance with DODI 3200.18 and DODFMR 7000.14-R. ***FY 2015 Accomplishments:*** Funds supported test equipment upgrades and maintenance; test facility maintenance; routine calibration; handling and disposal of hazardous materials, transportation, postage, administrative supplies; tools; software; spare parts; test support vehicle maintenance; mission unique installation costs; temporary duty/training of civilian and contractor personnel; printing and reproduction; communications; land leases; and range road maintenance. Funding supports indirect costs for MRTFB Activities (ATC, EPG, WSTC, YTC (including CRTC & TRTC)) in accordance with DODI 3200.18 and DODFMR 7000.14-R. ***FY 2016 Plans:*** Funds support test equipment upgrades and maintenance; test facility maintenance; routine calibration; handling and disposal of hazardous materials, transportation, postage, administrative supplies; tools; software; spare parts; test support vehicle maintenance; mission unique installation costs; temporary duty/training of civilian and contractor personnel; printing and reproduction; communications; land leases; and range road maintenance. Funding supports indirect costs for MRTFB Activities (ATC, EPG, WSTC, YTC (including CRTC & TRTC)) in accordance with DODI 3200.18 and DODFMR 7000.14-R. ***FY 2017 Plans:*** Funds will continue to support test equipment upgrades and maintenance; test facility maintenance; routine calibration; handling and disposal of hazardous materials, transportation, postage, administrative supplies; tools; software; spare parts; test support vehicle maintenance; mission unique installation costs; temporary duty/training of civilian and contractor personnel; printing and reproduction; communications; land leases; and range road maintenance. Funding supports indirect costs for MRTFB Activities (ATC, EPG, WSTC, YTC (including CRTC & TRTC)) in accordance with DODI 3200.18 and DODFMR 7000.14-R.			
Title: T&E Civilian Pay	128.880	130.176	143.739
Description: This funding supports the overhead costs of the civilian labor for Program Budget Guidance (PBG) authorizations. The balance is customer funded. The test customer pays all direct costs that are directly attributable to the use of a test facility or			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605601A / *Army Test Ranges and Facilities*	**Project (Number/Name)** F30 / *Army Test Ranges & Facilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
resource for testing of a particular program. Funding is essential to maintain core T&E skills as part of the Government civilian workforce. ***FY 2015 Accomplishments:*** Funds supported the overhead costs of the civilian labor for Program Budget Guidance (PBG) authorizations. The balance was customer funded. The test customers paid all direct costs directly attributable to the use of a test facility or resource for testing of a particular program. Funding was essential to maintaining the core T&E skills as part of the Government civilian workforce. ***FY 2016 Plans:*** Funds support the overhead costs of the civilian labor for Program Budget Guidance (PBG) authorizations. The balance will be customer funded. The test customer will pay all direct costs directly attributable to the use of a test facility or resource for testing of a particular program. Funding will be essential to maintain core T&E skills as part of the Government civilian workforce. ***FY 2017 Plans:*** Funds will continue to support the overhead costs of the civilian labor for Program Budget Guidance (PBG) authorizations. The balance will be customer funded. The test customer will pay all direct costs directly attributable to the use of a test facility or resource for testing of a particular program. Funding will be essential to maintain core T&E skills as part of the Government civilian workforce.			
Title: Contractor Support ***Description:*** This funding supports contractor labor costs not billable to the customer. Contract labor is essential to augment core civilian T&E personnel. Functions performed include range operations, automotive test support, radar maintenance, warehousing support, project management, maintenance of support fleet aircraft, recurring/general maintenance to test facilities and data acquisition support. ***FY 2015 Accomplishments:*** Funds supported contractor labor costs not billable to the customer. Contract labor is essential to augment core civilian T&E personnel. Functions performed include range operations, automotive test support, radar maintenance, warehousing support, project management, maintenance of support fleet aircraft, recurring/general maintenance to test facilities and data acquisition support. ***FY 2016 Plans:*** Funds support contractor labor costs not billable to the customer. Contract labor will be essential to augment core civilian T&E personnel. Functions performed will include range operations, automotive test support, radar maintenance, warehousing support,	43.045	44.127	44.169

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605601A / *Army Test Ranges and Facilities*	**Project (Number/Name)** F30 / *Army Test Ranges & Facilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
project management, maintenance of support fleet aircraft, recurring/general maintenance to test facilities and data acquisition support ***FY 2017 Plans:*** Funds will continue to support contractor labor costs not billable to the customer. Contract labor will be essential to augment core civilian T&E personnel. Functions performed will include range operations, automotive test support, radar maintenance, warehousing support, project management, maintenance of support fleet aircraft, recurring/general maintenance to test facilities and data acquisition support.			
Title: Revitalization/Upgrade ***Description:*** Funds support the revitalization/upgrade of test infrastructure and capabilities. MRTFB elements are required to use institutional funding to sustain, upgrade or create capabilities that support multiple customers. Funding will be focused on improving test and evaluation capabilities for the highest priority Army programs. ***FY 2015 Accomplishments:*** Funds supported the revitalization/upgrade of test infrastructure and capabilities. MRTFB elements will be required to use institutional funding to sustain, upgrade or create capabilities that support multiple customers. Funding will be focused on improving test and evaluation capabilities for the highest priority Army programs. ***FY 2016 Plans:*** Funds support the revitalization/upgrade of test infrastructure and capabilities. MRTFB elements will be required to use institutional funding to sustain, upgrade or create capabilities that support multiple customers. Funding will be focused on improving test and evaluation capabilities for the highest priority Army programs. ***FY 2017 Plans:*** Funds will continue to support the revitalization/upgrade of test infrastructure and capabilities. MRTFB elements will be required to use institutional funding to sustain, upgrade or create capabilities that support multiple customers. Funding will be focused on improving test and evaluation capabilities for the highest priority Army programs.	5.000	5.000	5.000
Title: Physical Security Guards and Equipment ***Description:*** This funding supports physical security guards mandated by regulation to guard ATEC's Fast Burst Nuclear Reactor (FBR) at White Sands Missile Range (WSMR) IAW AR 190-54 and Chemical Biological (CB) facilities located at Dugway Proving Ground (DPG) IAW AR 190-50 and AR 190-17. These surety facilities maintain nuclear, biological, and chemical (NBC) materials and agents in order to test the effects and effectiveness of defensive or protective equipment and measures. The physical security equipment consists of concrete barriers, security fencing around test sites, cameras, gate controllers, access and intrusion detection systems, alarms, and maintenance contracts for equipment. This equipment is necessary to secure arms rooms,	-	-	12.279

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605601A / *Army Test Ranges and Facilities*	**Project (Number/Name)** F30 / *Army Test Ranges & Facilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
ammunition storage facilities, The Fast Burst Nuclear Reactor and chemical biological surety sites. Physical security equipment is critical to maintain current security requirements as outlined in AR 190-17, AR 190-59, AR 190-51, and AR 190-13. ***FY 2017 Plans:*** Funds will support the physical security guards and equipment for the FBR at WSMR and CB facilities at DPG.			
Title: UH-60 Aircraft ***Description:*** This funding supports the Aviation Restructure Initiative endorsed by the SECDEF. Funding supports aircraft maintenance, aircrew labor, mandatory training, and aircraft flying hours. In accordance with DODI 3200.18 and DODFMR 7000.14-R, these costs are not billable to the test customers. UH-60 helicopters are used to provide essential logistical, sensor platform and aerial photo/video documentation support for developmental testing. ***FY 2017 Plans:*** Funds will support UH-60 helicopter maintenance, aircrew labor, mandatory training and aircraft flying hours.	-	-	6.867
Accomplishments/Planned Programs Subtotals	271.377	279.896	293.748

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605602A *I Army Technical Test Instrumentation and Targets*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	43.961	51.550	52.404	-	52.404	49.354	54.270	56.753	58.238	-	-
628: *Developmental Test Technology & Sustainment*	-	31.858	41.688	42.512	-	42.512	34.092	35.755	37.874	38.865	-	-
62C: *Modeling and Simulation Instrumentation*	-	12.103	9.862	9.892	-	9.892	15.262	18.515	18.879	19.373	-	-

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This Program Element provides critical front-end investments for development of new test methodologies; test standards; advanced test technology concepts for long range requirements; future test capabilities; advanced development of modeling and simulation (M&S) and instrumentation prototypes; and the full development of test instrumentation for the United States Army Test and Evaluation Command (ATEC), which includes the Operational Test Command (OTC) at Ft Hood, Texas; Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; White Sands Test Center (WSTC) at White Sands Missile Range (WSMR), New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; Yuma Test Center (YTC) at Yuma Proving Grounds (YPG), Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska and the Tropics Regions Test Center (TRTC), at various locations); and Redstone Test Center (RTC), Redstone Arsenal, Alabama. OTC consists of three forward Test Directorates (Airborne and Special Operations Test Directorate, Fort Bragg, North Carolina; Integrated Test and Evaluation Directorate, Fort Bliss, Texas; and the Fires Test Directorate, Fort Sill, Oklahoma) together with four other Test Directorates (Aviation; Maneuver; Mission Command; Maneuver Support and Sustainment) at Ft Hood, Texas. These activities support the development and fielding cycle of all Army acquisition programs including rapid fielding initiatives. Sustainment funding maintains existing testing capabilities at all locations by replacing unreliable, uneconomical, and irreparable instrumentation, as well as incremental upgrades of hardware and software for modeling and simulation (M&S) and instrumentation systems to assure adequate test data collection capabilities. This data supports acquisition milestone decisions for all commodity areas throughout the Army including programs such as the Joint Light Tactical Vehicle (JLTV), Advanced Multi-Purpose Vehicle (AMPV), Network Integration Evaluation (NIE), Patriot Advance Capability Phase 3 (PAC-3), Warfighter Information Network - Tactical (WIN-T), Stryker, Bradley, Abrams, Guided Multiple Launch Rocket System (GMLRS), Joint Tactical Radio System (JTRS),and the Distributed Common Ground System - Army (DCGS-A).

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*			R-1 Program Element (Number/Name) PE 0605602A *I Army Technical Test Instrumentation and Targets*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	45.573	51.550	52.773	-	52.773
Current President's Budget	43.961	51.550	52.404	-	52.404
Total Adjustments	-1.612	0.000	-0.369	-	-0.369
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.612	-			
• Adjustments to Budget Years	-	-	-0.369	-	-0.369

Change Summary Explanation

Decrease to programs due to adjustments in inflation rates.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605602A / *Army Technical Test Instrumentation and Targets*	Project (Number/Name) 628 / *Developmental Test Technology & Sustainment*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
628: *Developmental Test Technology & Sustainment*	-	31.858	41.688	42.512	-	42.512	34.092	35.755	37.874	38.865	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program provides critical front-end investments for development of new test methodologies, test standards, advanced test technology concepts for long range requirements, future test capabilities, and advanced instrumentation prototypes for subordinate commands of the Army Test and Evaluation Command (ATEC). These capabilities are required to support developmental testing requirements of high priority Army systems supporting Army modernization efforts. Where practical, efficiencies will be gained through the common use of developmental instrumentation in operational testing. A key element is sustaining aging instrumentation which maintains existing capabilities at test facilities by replacing unreliable, uneconomical and irreparable instrumentation, as well as lifecycle replacement and incremental upgrades of instrumentation and software, reducing their average age to assure adequate testing capabilities. This project develops and sustains developmental test instrumentation and capabilities that provide the data necessary to support acquisition milestone decisions for all commodity areas throughout the Army. Significant examples include new instrumentation for the testing of Command, Control, Communication and Computer (C4) systems, upgrades to existing radars to extend their economic life, common data collection and analysis tools, non-intrusive instrumentation to test Unmanned Ground Vehicles and sensors, high speed - high definition digital imaging systems to capture missile flight events, and automation software to improve data collection of reliability, availability, and maintainability (RAM) testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Developmental Test Technology Investment	29.416	41.688	42.512
Description: Develops, acquires and sustains critical test technology and instrumentation: Provides the necessary test instrumentation, computer and communications systems, data collection, analysis and reporting equipment and other test capabilities to successfully develop and test Army weapons and equipment. Provides the necessary live, virtual and constructive environment, hardware-in-the-loop capabilities and models and simulations needed for testing the Army materiel. Acquires instrumentation to measure performance of C4 systems; reliability, availability and maintainability (RAM) data collection on tracked and wheeled vehicles; ballistic transducers for measuring chamber pressures during ammunition tests; supports development of common data collection instrumentation and data management systems used in testing across all test commodity areas and test lifecycles; continues replacement and upgrade of range control instrumentation, radar, optics and telemetry equipment used in missile testing; acquires data recorders, signal conditioning equipment, data processing equipment and other instrumentation for various aircraft tests; upgrades natural environments test instrumentation used for testing weapon systems, vehicles, munitions and support equipment in extreme hot desert environments as well as extreme cold conditions; continues upgrade of survivability/ vulnerability test capabilities in support of live fire testing; upgrades and replaces mobile range communications equipment and digital end devices; and improves test efficiency through the use of smart devices as data collectors.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605602A / *Army Technical Test Instrumentation and Targets*	**Project (Number/Name)** 628 / *Developmental Test Technology & Sustainment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Continued to provide, acquire and upgrade instrumentation for RAM, ballistic, missile, aviation and environmental testing across all test commodity areas and support the test capability of live fire survivability testing. ***FY 2016 Plans:*** Continues to provide, acquire and upgrade instrumentation for C4, RAM, ballistics, missile, aviation and environmental testing across all test commodity areas, and enhance/expand the use of common data collectors, smart devices, and enterprise data management tools ***FY 2017 Plans:*** Will continue to provide, acquire and upgrade instrumentation for C4, RAM, ballistics, missile, aviation and environmental testing across all test commodity areas and enhance/expand the use of common data collectors, smart devices, and enterprise data management tools.			
Title: Homemade Explosive Characterization Study ***Description:*** Homemade explosives are the prevalent underbody threat in Operation Enduring Freedom area of operation. Currently live fire testing cannot use Army G2-validated homemade explosive surrogate because its performance has varied greatly from test-to-test. This study will characterize subscale and full scale repeatability of Army G2-validated surrogate homemade explosive charge for use in live fire test events and compare the performance relative to TNT standard. Results from this homemade explosive characterization will inform efforts to improve combat vehicle survivability. ***FY 2015 Accomplishments:*** Completed the quantification of target responses of homemade explosive surrogates and additional standard TNT mine threats used in live fire testing and provide data set to support future verification, validation, and accreditation (VV&A) of underbody blast modeling and simulation tools.	2.442	-	-
Accomplishments/Planned Programs Subtotals	31.858	41.688	42.512

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605602A / *Army Technical Test Instrumentation and Targets*	**Project (Number/Name)** 628 / *Developmental Test Technology & Sustainment*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605602A / *Army Technical Test Instrumentation and Targets*	Project (Number/Name) 62C / *Modeling and Simulation Instrumentation*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
62C: *Modeling and Simulation Instrumentation*	-	12.103	9.862	9.892	-	9.892	15.262	18.515	18.879	19.373	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The U.S. Army Test and Evaluation Command (ATEC) plans, conducts and reports on operational tests, assessments and experiments in order to provide essential information for the acquisition and fielding of War Fighting Systems. Operational Test (OT) Instrumentation collects required data from both the systems being tested and the surrounding activities for real-time test control as well as for supporting effectiveness, survivability, and suitability analysis. The Army's OPTEMPO has reduced the number of tactical units and vehicles available to support OT, making enhancement of live forces through simulation essential for testing in a realistic, operational environment by simulating tactical engagements, additional units, message traffic, effects, and terrain. ATEC OT Modeling, Simulation and Instrumentation (MS&I) funding is used to adapt capabilities from other organizations (including within ATEC), purchase off-the-shelf systems, and develop and sustain OT-unique simulation and instrumentation systems. As required, the Program Executive Office for Simulation, Training, and Instrumentation (PEO STRI) Project Manager for Instrumentation, Targets and Threat Simulators (PM ITTS) provides development and integration of major simulation and instrumentation systems. The MS&I (Sustainment and Minor Development) program funds the expertise and the adaptation, purchases, minor development and sustainment requirements that support systems undergoing OT. Costs unique to specific systems under test may require Program Manager (PM) funding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Modeling, Simulation and Instrumentation	12.103	9.862	9.892
Description: Develop and enhance ATEC's simulation/stimulation of Mission Command, Fire Support, Air Defense, Reconnaissance and Surveillance, and Network systems. Improve and sustain our Real-Time Casualty Assessment (RTCA) (including Integrated LVC Test Environment (ILTE)) capabilities. Plus develop, enhance, and sustain our Performance Instrumentation Systems, Time Space Positioning Information (TSPI) and Telemetry Systems, and Imaging Systems together with their associated data management.			
FY 2015 Accomplishments: FY15 Planned Programs - Continued to sustain and enhance ATEC's simulation/stimulation of Mission Command, Fire Support, Air Defense, Reconnaissance and Surveillance, and Network systems. Continue to improve our Real-Time Casualty Assessment (RTCA) (including ILTE) capabilities to support future AMPV and the Bradley Performance Improvement Program (PIP), Stryker PIP, and Abrams PIP OTs. Sustain and develop our Performance Instrumentation Systems and associated data management,			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605602A / *Army Technical Test Instrumentation and Targets*	**Project (Number/Name)** 62C / *Modeling and Simulation Instrumentation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Time Space Positioning Information (TSPI) and Telemetry Systems and associated data management, and Imaging Systems and associated data management. ***FY 2016 Plans:*** FY16 Planned Programs - continues to sustain and enhance ATEC's Fire Support, Air Defense, Reconnaissance and Surveillance, and Network systems. Continue to improve our Real-Time Casualty Assessment (RTCA) (including ILTE) capabilities to support future AMPV, and the Bradley Performance Improvement Program (PIP), Stryker PIP, and Abrams PIP OTs. Sustain and develop our Performance Instrumentation Systems, Time Space Positioning Information (TSPI) and Telemetry Systems, and Imaging Systems and associated data management. ***FY 2017 Plans:*** FY17 Planned Programs - will continue to sustain ATEC's Fire Support, Air Defense, Reconnaissance and Surveillance, and Network OT tools. Improve our Real-Time Casualty Assessment (RTCA) secure network and tactical engagement capabilities to support future AMPV, AH-64 FOT&E, and the Bradley Performance Improvement Program (PIP), Stryker PIP, and Abrams PIP OTs. Sustain Performance Instrumentation Systems, Time Space Positioning Information (TSPI) and Telemetry Systems, and Imaging Systems and associated data management capabilities.			
Accomplishments/Planned Programs Subtotals	12.103	9.862	9.892

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605604A / *Survivability/Lethality Analysis*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	33.210	33.246	38.571	-	38.571	33.909	30.250	31.314	32.652	-	-
675: *Army Survivability Analysis & Evaluation Supp*	-	33.210	33.246	38.571	-	38.571	33.909	30.250	31.314	32.652	-	-

A. Mission Description and Budget Item Justification

This project funds analytical products necessary for inherently-governmental Army Test & Evaluation Command/Army Evaluation Center's (ATEC/AEC) mission. Products result from investigating, analyzing, assessing, and reporting on the survivability of Soldiers, and on the survivability, lethality and vulnerability (SLV) of the highest priority Army systems whether those systems are employed during stability, support, defensive, or offensive missions. Developed through measurement, experiment, test support, and modeling and simulation (M&S), the products funded by this project are used in many ways to make the Army force more survivable. The project provides quantitative lethality and survivability analyses and data for fielded and developmental systems as the Army makes the required choices to decisively transform into a modular Brigade Combat Team (BCT) based organization. Products concern Army fire support systems, direct fire munitions; Army air defense and missile defense systems; Army aviation systems including Unmanned Aerial Vehicles; network communications and other network enabled battle command and communication systems; and selected joint services systems particularly relevant to the Army's joint and expeditionary role. Products also include analysis and data concerning individual Soldier items including protective equipment such as helmets and vests. These survivability products are leveraged into rapid-equipping initiatives and other technical support for operational forces involved in the current fight. Continued development of these products also guarantees preservation of the Army's vitally needed technical corporate memory for expert survivability advice.

Survivability analyses funded by this project are conducted across the spectrum of battlefield threats to include guns, missiles, mines and other methods of inflicting physical damage; jammers, countermeasures, and other electronic warfare techniques; cybersecurity and computer network operations; and directed energy weapons. This survivability information enables developers, users, and decision makers to perform credible survivability tradeoffs for both Soldiers and materiel. These technical survivability details enable properly informed decisions concerning systems and tactics that maximize both the combat power and survivability of Army forces. Survivability data and analysis results funded by this project are efficiently leveraged for many different Army uses, reducing total cost to the Army by eliminating the need for duplicative capabilities funded by individual system developers. Central funding of this mission assures the Army accurate and consistent treatment of survivability across all classes of systems, across all formal system Evaluations, and across the Army's Army Regulation (AR) 5-5 studies process. Work program is prioritized principally by the Army Test and Evaluation Command/ Army Evaluation Center (ATEC/AEC) and is used by them in the Army's formal Evaluation process in such a way that ATEC can comply with its legally mandated responsibility to assess system survivability along with effectiveness and suitability. Program Managers (PM) and the Program Executive Officers (PEO) use the survivability analyses and data funded by this project to make design decisions that are optimized for survivability, to direct specific weapon system development efforts that are needed for survivability enhancement, and to structure product improvement programs. Soldier survivability data and analysis is leveraged to support the survivability portion of the Headquarters' Department of the Army (HQDA) Deputy Chief of Staff, Personnel (G1) Human Systems Integration (HSI) program. U.S. Army Training and Doctrine Command (TRADOC) combat developers exploit the survivability products funded by this project to initiate and improve survivability/lethality requirements, and to develop and refine doctrine and tactics. Also, the quantitative analytical results funded by the project are leveraged as core inputs to formal AR 5-5 studies and other studies as directed by Army leaders. While the Army is at war, analytical results

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605604A *I Survivability/Lethality Analysis*

funded by this project are also directly leveraged for survivability support to current operations. Finally, for particularly urgent or controversial survivability issues, data and analysis funded by this project are used directly by senior Army decision makers to assure technically sound program/production decisions.

This project also supports cybersecurity survivability analysis of Army battle command/networked systems as well as Army network architectures and technology. Supports ATEC and other electronic warfare vulnerability testers and evaluators by developing and providing highly technical specialized field countermeasure environments that threat forces may employ against Army communications networks, air defense and other systems. In conjunction with PMs and Army intelligence agencies, analyzes technical vulnerabilities of foreign weapons, network related systems, and intelligence Electronic Warfare (EW) systems to U.S. Army EW systems. Without the survivability products funded by this project, ATEC would not have a technically credible account of survivability issues at milestone decision points and systems could be fielded with unknown vulnerabilities leading to unnecessary US casualties. PMs would make design choices that failed to properly optimize survivability, TRADOC would generate requirements that were not technically credible, and the Army studies process would rest on an inaccurate and inconsistent basis.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	33.294	33.246	28.243	-	28.243
Current President's Budget	33.210	33.246	38.571	-	38.571
Total Adjustments	-0.084	0.000	10.328	-	10.328
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.084	-			
• Adjustments to Budget Years	-	-	10.328	-	10.328

Change Summary Explanation

FY 2017 increase supports additional C4ISR System Survivability Assessment efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605604A / *Survivability/Lethality Analysis*	Project (Number/Name) 675 / *Army Survivability Analysis & Evaluation Supp*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
675: *Army Survivability Analysis & Evaluation Supp*	-	33.210	33.246	38.571	-	38.571	33.909	30.250	31.314	32.652	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds analytical products necessary for inherently-governmental Army Test & Evaluation Command/Army Evaluation Center's (ATEC/AEC) mission. Products result from investigating, analyzing, assessing, and reporting on the survivability of Soldiers, and on the survivability, lethality and vulnerability (SLV) of the highest priority Army systems whether those systems are employed during stability, support, defensive, or offensive missions. Developed through measurement, experiment, test support, and modeling and simulation (M&S), the products funded by this project are used in many ways to make the Army force more survivable. The project provides quantitative lethality and survivability analyses and data for fielded and developmental systems. Products concern Army fire support systems, direct fire munitions; Army air defense and missile defense systems; Army aviation systems including Unmanned Aerial Vehicles; network communications and other network enabled battle command and communication systems; and selected joint services systems particularly relevant to the Army's joint and expeditionary role. Products also include analysis and data concerning individual Soldier items including protective equipment such as helmets and vests. These survivability products are leveraged where possible into rapid-equipping initiatives and other technical support for operational forces involved in the current fight. Continued development of these products also guarantees preservation of the Army's vitally needed technical corporate memory for expert survivability advice.

Survivability analyses funded by this project are conducted across the spectrum of battlefield threats to include guns, missiles, mines and other methods of inflicting physical damage; jammers, countermeasures, and other electronic warfare techniques; cybersecurity and computer network operations; and directed energy weapons. This survivability information enables developers, users, and decision makers to perform credible survivability tradeoffs for both Soldiers and materiel. These technical survivability details enable properly informed decisions concerning systems and tactics that maximize both the combat power and survivability of Army forces. Survivability data and analysis results funded by this project are efficiently leveraged for many different Army uses, reducing total cost to the Army by eliminating the need for duplicative capabilities funded by individual system developers. Central funding of this mission assures the Army accurate and consistent treatment of survivability across all classes of systems, across all formal system Evaluations, and across the Army's AR 5-5 studies process. Work program is prioritized principally by the ATEC/AEC and is used by them in the Army's formal Evaluation process in such a way that ATEC can comply with its legally mandated responsibility to assess system survivability along with effectiveness and suitability. Program Managers (PM) and the Program Executive Officers (PEO) use the survivability analyses and data funded by this project to make design decisions that are optimized for survivability, to direct specific weapon system development efforts that are needed for survivability enhancement, and to structure product improvement programs. Soldier survivability data and analysis is leveraged to support the survivability portion of the HQDA G1 Human Systems Integration (HIS) program. U.S. Army Training and Doctrine Command (TRADOC) combat developers exploit the survivability products funded by this project to initiate and improve survivability/lethality requirements, and to develop and refine doctrine and tactics. Also, the quantitative analytical results funded by the project are leveraged as core inputs to formal AR 5-5 studies and other studies as directed by Army leaders. When the Army is at war, analytical results funded by this project are also directly leveraged for survivability support to current operations. Finally, for particularly urgent or controversial survivability issues, data and analysis funded by this project are used directly by senior Army decision makers to assure technically sound program/production decisions.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605604A / *Survivability/Lethality Analysis*	**Project (Number/Name)** 675 / *Army Survivability Analysis & Evaluation Supp*

This project also supports highly technical cyber survivability analysis of Army battle command/networked systems as well as Army network architectures and technology. Supports ATEC and other electronic warfare vulnerability testers and evaluators by developing and providing highly technical specialized field countermeasure environments that threat forces may employ against Army communications networks, air defense and other systems. In conjunction with PMs and Army intelligence agencies, analyzes technical vulnerabilities of foreign weapons, network related systems, and intelligence Electronic Warfare (EW) systems to U.S. Army EW systems. Provides survivability analysis to System of Systems Network Vulnerability Assessments, to Chief Information Office (CIO) G6, Network Integration Evaluation (NIE), to triad (the Brigade Modernization Command (BMC), ATEC, and the System of Systems Integration (SoSI) Directorate. Without the survivability products funded by this project, ATEC would not have a technically credible account of survivability issues at milestone decision points and systems could be fielded with unknown vulnerabilities leading to unnecessary US casualties. PMs would make design choices that failed to properly optimize survivability, TRADOC would generate requirements that were not technically credible, and the Army studies process would rest on an inaccurate and inconsistent basis.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Survivability, Lethality, Vulnerability Analyses (SLVA) for Ground, Aviation, Munitions, and Soldier Systems	15.477	14.654	14.654

Description: Conduct integrated survivability, lethality, vulnerability analyses for developmental aviation, ground, soldier and munition systems including Stryker, Ground Soldier System, Excalibur, and Intelligent Mine System (IMS). Completed ballistic survivability/vulnerability analysis for Mine Resistant Ambush Protected (MRAP) vehicle Test & Evaluation, Guided Multiple Launch Rocket system (GMLRS) Alternative Warhead Initial Operational Test and Evaluation (IOT&E) and Excalibur Live Fire Test and Evaluation (LFT&E) System Engineering Test-P1 test events, which included providing pre-shot predictions, performing damage assessments after each live fire test, completing post-shot analyses, behind armor debris (BAD) test/analyses, and crew survivability analysis and providing technical data required by ATEC for the Systems Evaluation Reports. Additionally, results and recommendations from our crosswalk of MRAP LFT&E assessed casualty/selected Theater casualty incidents were briefed to MRAP PM & vendors, ATEC, HQDA and the Director, Operational Test & Evaluation resulting in vehicle design improvements for MRAP platforms.

FY 2015 Accomplishments:
Conducted ballistic SLVA on AEC's highest priority platform and weapon systems, supporting LFT&E pre-shot predictions, damage assessments, post-shot analysis, and crew survivability analysis and provide technical data for system evaluation reports. Provided vulnerability reduction recommendations to PMs for those systems supported. For systems analyzed will provided data to the Army Materiel Systems Analysis Activity (AMSAA) for support of AR 5-5 and other Army studies. Conducted conventional and under-body blast vulnerability analyses for the M270A1 MLRS. Performed pre-shot predictions and prepared for the start of Paladin Integrated Management program's Full Up-System Level USL (FUSL) live-fire test in 1QFY16.

FY 2016 Plans:
Conduct ballistic SLVA on AEC's highest priority platform and weapon systems, supporting LFT&E pre-shot predictions, damage assessments, post-shot analysis, and crew survivability analysis and providing technical data for system evaluation reports. Provide vulnerability reduction recommendations to PMs for those systems supported. For systems analyzed will provide data to AMSAA for support of Army Analyses of Alternatives. Make the necessary preparations for the start of Armored Multi-PurposeP

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605604A / *Survivability/Lethality Analysis*	**Project (Number/Name)** 675 / *Army Survivability Analysis & Evaluation Supp*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Vehicle (AMPV) and Bradley full-up system-level LFT&E in FY17. Perform damage and crew casualty assessments as well as post-shot analyses during the Joint Light Tactical Vehicle (JLTV) and the Joint Assault Bridge (JAB) LFT&E programs; collected data incorporated into the DOT&E live-fire report to Congress as well as the System Evaluation Reports prepared by ATEC. ***FY 2017 Plans:*** Will conduct ballistic and other needed SLVA on AEC's highest priority platform and weapon systems, supporting LFT&E pre-shot predictions, damage assessments, post-shot analysis, and crew survivability analysis and providing technical data for system evaluation reports. Will provide vulnerability reduction recommendations to PMs for those systems supported. For systems analyzed will provide data to AMSAA for support of Army Analyses of Alternatives; collected data will be incorporated into the DOT&E live-fire report to Congress as well as the System Evaluation Reports prepared by ATEC.			
Title: Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) System Survivability Assessments ***Description:*** This effort produces assessments of the survivability of C4ISR systems in Electronic Warefare (EW) and cybersecurity threat environments and conducts Electronic Attack (EA) and Cybersecurity projects that reveal critical vulnerabilities in C4ISR systems. It also defines, demonstrates, and recommends mitigation options to proponents and evaluators of C4ISR. A cyber vulnerability database is maintained for the benefit of the community. ***FY 2015 Accomplishments:*** Conducted Electronic Protection (EP) and Cybersecurity survivability analysis investigations to help identify and mitigate capability gaps in areas such as: C4ISR, battle space awareness, joint fires, intelligence fusion with secure data sharing and combat identification. Worked in conjunction with AEC, product developers and TRADOC user communities to provide integrated SSurvivability/Vulnerability (SV) solutions that are necessary to counter increasingly smart and sophisticated evolving EW and cyber threats. Provided analysis of systems and networks during System-of-Systems Network Vulnerability Assessments and Network Integration Evaluations. Conducted modeling, simulation and testing on Warfighter Information Network – Tactical WIN-T Incincrement 3 in support of AEC's survivability evaluation of Joint C4ISR radio's Milestone (MS) C decision scheduled for FY16. Conduct analysis on both legacy and new Commercial Off-the-Shelf (COTS)Ts radios and waveforms as required. Conducted EW and cyber studies on Medium Altitude Reconnaissance and Surveillance System (MARSS), Distributed Common Ground GCSystem (DCGS), Prophet and Unmanned Aerial Systems (UAS) ISR, Advanced Field Artillery Tactical Data System (AFATDS) and Improved Position and Azimuth Determining System (IPADS). Advanced development of SAGE communication modeling environment in support of NIE and other field test environments. Developed a methodology to investigate and test Global Positioning System (GPS) reliant systems in an anechoic chamber. Continued developing tools and techniques to conduct software code analysis and the subsequent development of potential exploits. Furthered development of a large-scale mobile ad-	16.179	17.038	22.363

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605604A / *Survivability/Lethality Analysis*	**Project (Number/Name)** 675 / *Army Survivability Analysis & Evaluation Supp*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
hoc network simulation environment to determine potential vulnerabilities in systems before Developmental Test/Operational Test (DT/OT) test events. ***FY 2016 Plans:*** Analyze data for Joint Tactical Radio System (JTRS) Mid-Tier Networking Vehicular Radios (MNVR) Initial Operational Test & Evaluation (IOTE) (NIE 16.1) and Follow-On Operational Test & Evaluation (FOTE) (NIE 16.2). Analyze test data for the JTRS airborne radio systems. Conduct experimental and modeling analysis in support of Military GPS User Equipment (MGUE) Increment1/2 [support of ACD&P, Technical Risk Reduction, Electro-Motive Division / Production Phases, and MS_B/C]. Conduct experimental and modeling analysis in support of DCGS-A Development and Test Inc 2 Rel 1 Software, [support of DCGS-A(D07)Increment 2-Development Contract Award Increment 2 and MS_B 2QFY16]. Conduct experimental and modeling analysis in support of AFATDS Increment 2 V.7.0 Implementation / Deployment [support of Project DU5 Partial Deployment Decision (PDD) for V.7.0]. Conduct experimental and modeling analysis in support of Avenger Fire Control Computer (AFCC) software and hardware upgrades for Forward Area Air Defense (FAAD) [support AFCC-Revision (AFCC-R) Development ensure the system meets the latest Information Assurance (IA) requirements]. ***FY 2017 Plans:*** Will analyze Electronic Protection (EP) and cybersecurity for systems under test and systems under investigation in NIEs 16.1 and 16.2., and for additional highest priority technologies and developmental systems as specified by ATEC so as to reduce costs of downstream development by identifying and fixing vulnerabilities earlier and to assure that formal Army evaluations at Milestone decision points are fully informed on EP and cyber issues. Will mature cyber-attack M&S tools so as to more accurately assess the operational impact of such attacks on small unit mission accomplishment.			
Title: Survivability, Lethality, Vulnerability (SLV) Analyses for Developmental Air and Missile Defense Systems	1.554	1.554	1.554
Description: Conduct integrated SLV analyses for developmental air and missile defense systems, pre-planned product improvements of current systems, and recently fielded systems. These systems include the Ballistic Missile Defense System (BMDS), Terminal High Altitude Air Defense (THAAD), PATRIOT, Surface-Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM), Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS), and Sentinel. ***FY 2015 Accomplishments:*** Designed, developed, and employed advanced electronic attack countermeasures to assess Army Integrated Air and Missile Defense (AIAMD) system of systems. Provided advanced EA for Patriot PDB-08 limited user testing. Conducted cybersecurity testing on next iteration of Counter-Rocket Artillery and Mortar. Completed live-fire test and evaluation lethality assessment of the Patriot MSEMissile Segment Enhancement (MSE) missile. ***FY 2016 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605604A / *Survivability/Lethality Analysis*	**Project (Number/Name)** 675 / *Army Survivability Analysis & Evaluation Supp*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Design, develop, and employ advanced electronic attack countermeasures to assess AIAMD system of systems. Provide advanced EA and cybersecurity testing for Patriot Post Deployment Build-08 user operational test events. Provide additional EA and cybersecurity testing on other AMD systems as needed. ***FY 2017 Plans:*** Will design, develop, and employ advanced electronic attack countermeasures to assess AIAMD system of systems. Will provide advanced EA and cybersecurity testing for Patriot PDB-08 user operational test events. Will provide additional EA/EP and cybersecurity analysis for other Air Missile Defense systems as prioritized by ATEC.			
Accomplishments/Planned Programs Subtotals	33.210	33.246	38.571

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605606A / *Aircraft Certification*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	4.667	4.760	4.665	-	4.665	4.661	3.842	6.364	6.674	-	-
092: *Aircraft Certification*	-	4.667	4.760	4.665	-	4.665	4.661	3.842	6.364	6.674	-	-

A. Mission Description and Budget Item Justification

The Airworthiness Certification program ensures safe flight operation of Army aircraft and aviation systems by means of technical design approval and qualification of systems to appropriate airworthiness standards. It provides independent airworthiness qualification for all assigned developmental and in-production Army aircraft, both manned and unmanned, as required by AR 70-62, and is essential for ensuring the safe operation of Army aircraft. This program performs all engineering functions (design, analysis, testing, demonstrations, and system specification compliance) essential for certifying the airworthiness of assigned Army aircraft, to include performing safety-of-flight investigations/assessments, evaluating system risks, developing Airworthiness Impact Statements, developing Airworthiness Releases, and evaluating Safety of Flight Messages and Aviation Safety Action Messages for new and upgraded aircraft systems. This program also provides management/execution of the Army's Aeronautical Design Standards (ADS) program; management/execution of airworthiness approval for new systems and materiel changes for all assigned Army aircraft systems; airworthiness engineering support to the Program Executive Office for Aviation (PEO AVN) and the Technology Applications Program Office (TAPO, the Army's Special Operations Aircraft program office) in developing requirements for major development/modification and for any future systems/subsystems; and management of the test and evaluation process in support of the airworthiness qualification process. The Airworthiness Certification program also performs general research and development in support of aircraft qualification and overarching airworthiness projects that involve multiple aircraft models. Current ongoing programs requiring airworthiness qualification are PEO Aviation and TAPO Future Force systems including Longbow Apache E-model; Chinook F-model; Blackhawk M-model and; Special Operations MH-47G and MH-60M; Light Utility Helicopter; Gray Eagle unmanned aircraft system (UAS); Enhanced Multi-sensor Airborne Reconnaissance and Sensor System (EMARSS); and modified Shadow UAS. Additionally the Airworthiness Certification program supports application of other critical aviation subsystems onto Army aircraft, including Aircraft Survivability Equipment (e.g. Advanced Threat Infrared Countermeasures (ATIRCM), Common Missile Warning System (CMWS), Aviation Mission Equipment (e.g. advanced multiband avionics and Tactical Radio Systems and digital data links), Common Sensor (electro-optical multi-spectrum visual sensor), and Blue Force Tracker. The D092 funding profile partially funds the airworthiness certification program and therefore the effort will be limited to resourcing military use civil derivative aircraft technical qualification through the Federal Aviation Administration's Military Certification Office; development of airworthiness procedures, specifications, critical standards, and other design and qualification documents; participation in senior leadership mandated airworthiness tri-service activities (e.g. National Airworthiness Council, Joint Aeronautical Commanders Group) and international airworthiness related activities mandated by treaty (e.g. Flight Into Non-segregated Airspace (FINAS); and limited early airworthiness involvement in Technology Transition projects (e.g. Joint Multi Role (JMR) Technology Demonstrator and Future Vertical Lift aircraft) and other OSD initiatives.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*		R-1 Program Element (Number/Name) PE 0605606A *I Aircraft Certification*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	4.700	4.760	4.854	-	4.854
Current President's Budget	4.667	4.760	4.665	-	4.665
Total Adjustments	-0.033	0.000	-0.189	-	-0.189
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.033	-			
• Adjustments to Budget Years	-	-	-0.189	-	-0.189

Change Summary Explanation

FY17 decrease due to realignment to higher priority Army efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605606A / *Aircraft Certification*	Project (Number/Name) 092 / *Aircraft Certification*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
092: *Aircraft Certification*	-	4.667	4.760	4.665	-	4.665	4.661	3.842	6.364	6.674	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Airworthiness Certification program ensures safe flight operation of Army aircraft and aviation systems by means of technical design approval and qualification of systems to appropriate airworthiness standards. It provides independent airworthiness qualification for all assigned developmental and in-production Army aircraft, both manned and unmanned, as required by AR 70-62, and is essential for ensuring the safe operation of Army aircraft. This program, when fully funded, performs all engineering functions (design, analysis, testing, demonstrations, and system specification compliance) essential for certifying the airworthiness of assigned Army aircraft, to include performing safety-of-flight investigations/assessments, evaluating system risks, developing Airworthiness Impact Statements, developing Airworthiness Releases, and evaluating Safety of Flight Messages and Aviation Safety Action Messages for new and upgraded aircraft systems. This program also provides management/execution of the Army's Aeronautical Design Standards (ADS) program; management/execution of airworthiness approval for new systems and materiel changes for all assigned Army aircraft systems; airworthiness engineering support to the Program Executive Office for Aviation (PEO AVN) and the Technology Applications Program Office (TAPO, the Army's Special Operations Aircraft program office) in developing requirements for major development/modification and for any future systems/subsystems; and management of the test and evaluation process in support of the airworthiness qualification process. The Airworthiness Certification program also performs general research and development in support of aircraft qualification and overarching airworthiness projects that involve multiple aircraft models. Current ongoing programs requiring airworthiness qualification are PEO Aviation and TAPO Future Force systems including Longbow Apache E-model; Chinook F-model; Blackhawk M-model and; Special Operations MH-47G and MH-60M; Light Utility Helicopter; Gray Eagle unmanned aircraft system (UAS); Enhanced Multi-sensor Airborne Reconnaissance and Sensor System (EMARSS); and modified Shadow UAS. Additionally the Airworthiness Certification program supports application of other critical aviation subsystems onto Army aircraft, including Aircraft Survivability Equipment (e.g. Advanced Threat Infrared Countermeasures (ATIRCM), Common Missile Warning System (CMWS), Aviation Mission Equipment (e.g. advanced multiband avionics and Tactical Radio Systems and digital data links), Common Sensor (electro-optical multi-spectrum visual sensor), and Blue Force Tracker. The D092 funding profile partially funds the airworthiness certification program and therefore the effort will be limited to resourcing military use civil derivative aircraft technical qualification through the Federal Aviation Administration's Military Certification Office; development of airworthiness procedures, specifications, critical standards, and other design and qualification documents; participation in senior leadership mandated airworthiness tri-service activities (e.g. National Airworthiness Council, Joint Aeronautical Commanders Group) and international airworthiness related activities mandated by treaty (e.g. Flight Into Non-segregated Airspace (FINAS); and limited early airworthiness involvement in Technology Transition projects (e.g. Joint Multi Role (JMR) Technology Demonstrator and Future Vertical Lift aircraft) and other OSD initiatives.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Certification Assessments and Studies Force Modernization Aircraft	0.040	0.044	0.051
Description: Perform assessments and studies in support of Force Modernization Aircraft Systems			
FY 2015 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605606A / *Aircraft Certification*	**Project (Number/Name)** 092 / *Aircraft Certification*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Conducted technical and airworthiness qualification assessments and studies to demonstrate airworthiness and system performance for Army force modernization aircraft systems or multi-system programs (e.g. AH-64E, UH-60M, MH-47G, MH-60M, etc). ***FY 2016 Plans:*** Conduct technical and airworthiness qualification assessments and studies to demonstrate airworthiness and system performance for Army force modernization aircraft systems or multi-system programs (e.g. AH-64E, UH-60M, MH-47G, MH-60M, etc). ***FY 2017 Plans:*** Will conduct technical and airworthiness qualification assessments and studies to demonstrate airworthiness and system performance for Army force modernization aircraft systems or multi-system programs (e.g. AH-64E, UH-60M, MH-47G, MH-60M, etc).			
Title: Certification Requirements and Studies for Future Aircraft ***Description:*** Perform studies to support airworthiness certification requirements for Future Aircraft Systems ***FY 2015 Accomplishments:*** Conducted studies of Airworthiness Certification requirements for future aircraft systems and other technology transition programs (e.g. Joint Multi-Role Technology Demonstrator Aircraft, Future Vertical Lift Aircraft, Improved Turbine Engine Program) ***FY 2016 Plans:*** Conduct studies of Airworthiness Certification requirements for future aircraft systems and other technology transition programs (e.g. Joint Multi-Role Technology Demonstrator Aircraft, Future Vertical Lift Aircraft, Improved Turbine Engine Program) ***FY 2017 Plans:*** Will conduct studies of Airworthiness Certification requirements for future aircraft systems and other technology transition programs (e.g. Joint Multi-Role Technology Demonstrator Aircraft, Future Vertical Lift Aircraft, Improved Turbine Engine Program)	0.603	0.617	0.617
Title: Design Standards ***Description:*** Support the development, implementation and maintenance to support Army Aeronautical Design Standards, airworthiness procedures and tools, and overarching Airworthiness qualification documentation. ***FY 2015 Accomplishments:*** Developed, implemented, and maintained Army Aeronautical Design Standards, airworthiness procedures and tools, and overarching airworthiness qualification documentation. ***FY 2016 Plans:***	2.599	2.626	2.528

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605606A / *Aircraft Certification*	**Project (Number/Name)** 092 / *Aircraft Certification*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Develop, implement, and maintain Army Aeronautical Design Standards, airworthiness procedures and tools, and overarching airworthiness qualification documentation. ***FY 2017 Plans:*** Will develop, implement, and maintain Army Aeronautical Design Standards, airworthiness procedures and tools, and overarching airworthiness qualification documentation.			
Title: Certification Assessments of Technology Upgrades ***Description:*** Perform certification assessments of technology upgrades. ***FY 2015 Accomplishments:*** Conducted technical and airworthiness certification assessments of technology upgrades to Army force modernization aircraft systems or programs (e.g. Advanced Threat Infrared Countermeasures integration, Common Missile Warning System integration, Common Sensor integration). ***FY 2016 Plans:*** Conduct technical and airworthiness certification assessments of technology upgrades to Army force modernization aircraft systems or programs (e.g. Advanced Threat Infrared Countermeasures integration, Common Missile Warning System integration, Common Sensor integration). ***FY 2017 Plans:*** Will conduct technical and airworthiness certification assessments of technology upgrades to Army force modernization aircraft systems or programs (e.g. Advanced Threat Infrared Countermeasures integration, Common Missile Warning System integration, Common Sensor integration).	0.040	0.043	0.051
Title: Commercial Derivative Aircraft ***Description:*** Technical and airworthiness qualification for Commercial Derivative Aircraft ***FY 2015 Accomplishments:*** Provided technical and airworthiness qualification for Commercial Derivative Aircraft through the Federal Aviation Administration ***FY 2016 Plans:*** Provide technical and airworthiness qualification for Commercial Derivative Aircraft through the Federal Aviation Administration ***FY 2017 Plans:*** Will provide technical and airworthiness qualification for Commercial Derivative Aircraft through the Federal Aviation Administration.	0.420	0.430	0.446
Title: Technology Advancement	0.965	1.000	0.972

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605606A / *Aircraft Certification*	**Project (Number/Name)** 092 / *Aircraft Certification*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Support efforts to establish and maintain aircraft safety for a fleet of aircraft. ***FY 2015 Accomplishments:*** Lead and participated in national and international airworthiness certification committees, conferences and working groups responsible for establishing and maintaining aircraft safety for a fleet of aircraft (e.g. National Airworthiness Council, Joint Aeronautical Commanders Group, Joint Propulsion Coordinating Committee, North Atlantic Treaty Organization (NATO) Airworthiness working groups, Air and Space Interoperability Council (ASIC) Airworthiness Working Groups, Global Air Traffic Management working groups). ***FY 2016 Plans:*** Lead and participate in national and international airworthiness certification committees, conferences and working groups responsible for establishing and maintaining aircraft safety for a fleet of aircraft (e.g. National Airworthiness Council, Joint Aeronautical Commanders Group, Joint Propulsion Coordinating Committee, North Atlantic Treaty Organization (NATO) Airworthiness working groups, Air and Space Interoperability Council (ASIC) Airworthiness Working Groups, Global Air Traffic Management working groups). ***FY 2017 Plans:*** Will lead and participate in national and international airworthiness certification committees, conferences and working groups responsible for establishing and maintaining aircraft safety for a fleet of aircraft (e.g. National Airworthiness Council, Joint Aeronautical Commanders Group, Joint Propulsion Coordinating Committee, North Atlantic Treaty Organization (NATO) Airworthiness working groups, Air and Space Interoperability Council (ASIC) Airworthiness Working Groups, Global Air Traffic Management working groups).			
Accomplishments/Planned Programs Subtotals	4.667	4.760	4.665

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605702A / *Meteorological Support to RDT&E Activities*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	6.289	8.303	6.925	-	6.925	7.099	9.907	8.422	8.647	-	-
128: *Meteorological Support To RDT&E Activities*	-	6.289	8.303	6.925	-	6.925	7.099	9.907	8.422	8.647	-	-

A. Mission Description and Budget Item Justification

This project provides meteorological support to research, development, test, and evaluation (RDT&E) activities and provides standard and specialized weather forecasts and data for test reports to satisfy Army/Department of Defense RDT&E test requirements for modern weaponry, e.g., (1) unique atmospheric analysis and sampling to include atmospheric transmittance, extinction, optical scintillation, infrared temperature, aerosol/smoke cloud dispersion characteristics, and ballistic meteorological measurements; (2) test event forecasting to include prediction of sound propagation for ballistic firing tests, specialized prediction of light levels and target to background measurements, and predictions for electro-optical testing and ballistic artillery/mortar firing; and (3) advisory and warning products such as go/no-go test recommendations for ballistic and atmospheric probe missiles, smoke/obscurant tests, hazard predictions for chemical agent munitions disposal, monitoring dispersion of simulant clouds for chemical/biological detector tests, simulated nuclear blasts, and weather warnings for test range safety. Provides technical support to Army Program Executive Officers (PEOs), Project Managers (PMs), and the Army test ranges and sites at: White Sands Test Center (WSTC) White Sands Missile Range, New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; West Desert Test Center (WDTC), Dugway Proving Ground, Utah; Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; Redstone Test Center (RTC), Redstone Arsenal, Alabama; Yuma Test Center (YTC), Yuma Proving Ground, Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska); Operational Test Command (OTC), Fort Hood, Texas and Fort Bragg, North Carolina. This program develops methodologies and acquires instrumentation and systems that allow meteorological teams to support current and future Army/DoD RDT&E requirements. It finances indirect meteorological support operating costs not billable to customers and replacement/upgrade of meteorological instrumentation and support systems. Direct costs for meteorological support services are not funded by this PE, but are borne by the customer (i.e., materiel/weapons developers and project/product managers) in accordance with DoD Directive 7000.14R, October 1999. This program enables more effective test scheduling and execution, and is essential to the accomplishment of the Army's developmental and operational test mission in that precise weather modeling and measurements directly influence test item performance and quantify test item weather dependencies and vulnerabilities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*		R-1 Program Element (Number/Name) PE 0605702A / *Meteorological Support to RDT&E Activities*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	6.411	8.303	6.297	-	6.297
Current President's Budget	6.289	8.303	6.925	-	6.925
Total Adjustments	-0.122	0.000	0.628	-	0.628
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.122	-			
• Adjustments to Budget Years	-	-	0.628	-	0.628

Change Summary Explanation

FY 2017 increase is because of life cycle replacement for high performance system required to operate 4DWX weather model.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605702A / *Meteorological Support to RDT&E Activities*	Project (Number/Name) 128 / *Meteorological Support To RDT&E Activities*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
128: *Meteorological Support To RDT&E Activities*	-	6.289	8.303	6.925	-	6.925	7.099	9.907	8.422	8.647	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides meteorological support to research, development, test, and evaluation (RDT&E) activities and provides standard and specialized weather forecasts and data for test reports to satisfy Army/Department of Defense RDT&E test requirements for modern weaponry, e.g., (1) unique atmospheric analysis and sampling to include atmospheric transmittance, extinction, optical scintillation, infrared temperature, aerosol/smoke cloud dispersion characteristics, and ballistic meteorological measurements; (2) test event forecasting to include prediction of sound propagation for ballistic firing tests, specialized prediction of light levels and target to background measurements, and predictions for electro-optical testing and ballistic artillery/mortar firing; and (3) advisory and warning products such as go/no-go test recommendations for ballistic and atmospheric probe missiles, smoke/obscurant tests, hazard predictions for chemical agent munitions disposal, monitoring dispersion of simulant clouds for chemical/biological detector tests, simulated nuclear blasts, and weather warnings for test range safety. Provides technical support to Army Program Executive Officers (PEOs), Project Managers (PMs), and the Army test ranges and sites at: White Sands Test Center (WSTC) White Sands Missile Range, New Mexico; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; West Desert Test Center (WDTC), Dugway Proving Ground, Utah; Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; Redstone Test Center (RTC), Redstone Arsenal, Alabama; Yuma Test Center (YTC), Yuma Proving Ground, Arizona (including the Cold Regions Test Center (CRTC), Fort Greely, Alaska); Operational Test Command (OTC), Fort Hood, Texas and Fort Bragg, North Carolina. This program develops methodologies and acquires instrumentation and systems that allow meteorological teams to support current and future Army/DoD RDT&E requirements. It finances indirect meteorological support operating costs not billable to customers and replacement/upgrade of meteorological instrumentation and support systems. Direct costs for meteorological support services are not funded by this PE, but are borne by the customer (i.e., materiel/weapons developers and project/product managers) in accordance with DoD Directive 7000.14R, October 1999. This program enables more effective test scheduling and execution, and is essential to the accomplishment of the Army's developmental and operational test mission in that precise weather modeling and measurements directly influence test item performance and quantify test item weather dependencies and vulnerabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Civilian Pay and Support Costs	1.931	2.095	2.060
Description: Funding is provided for the following effort			
FY 2015 Accomplishments: Provided indirect costs (personnel salaries) for generating weather forecasts, severe weather warnings and advisories; staff meteorological services; and atmospheric measurements in support of Army/DoD tests and projects at eight Army sites/test ranges, and alternate test sites as required. Provided program management for meteorological support to the Army research, development, test and evaluation community and technical review/assistance to ranges and meteorological support teams.			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605702A / *Meteorological Support to RDT&E Activities*	**Project (Number/Name)** 128 / *Meteorological Support To RDT&E Activities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Included collaboration between Army meteorologists and the National Center for Atmospheric Research (NCAR) toward improvements to the Four-Dimensional Weather (4DWX) System. Conducted assessment of range support to gain efficiencies in light of future DA TDA reductions. ***FY 2016 Plans:*** Provides indirect costs (personnel salaries) for generating weather forecasts, severe weather warnings and advisories; staff meteorological services; and atmospheric measurements in support of Army/DoD tests and projects at eight Army sites/test ranges, and alternate test sites as required. Provides program management for meteorological support to the Army research, development, test and evaluation community and technical review/assistance to ranges and meteorological support teams. Includes collaboration between Army meteorologists and the National Center for Atmospheric Research (NCAR) toward improvements to the Four-Dimensional Weather (4DWX) System. ***FY 2017 Plans:*** Will provide indirect costs (personnel salaries) for generating weather forecasts, severe weather warnings and advisories; staff meteorological services; and atmospheric measurements in support of Army/DoD tests and projects at eight Army sites/test ranges, and alternate test sites as required. Will provide program management for meteorological support to the Army research, development, test and evaluation community and technical review/assistance to ranges and meteorological support teams. Will include collaboration between Army meteorologists and the National Center for Atmospheric Research (NCAR) toward improvements to the Four-Dimensional Weather (4DWX) System.			
Title: Four Dimensional Weather System (4DWX) and Instrumentation ***Description:*** Provides funding for meteorological instrumentation and technology to support RDT&E activities at Army test ranges. Includes funding for development and enhancement of the 4DWX system, an advanced meteorological support system that provides high-resolution weather forecasts and analyses. The 4DWX analyses and forecasts of the 3-dimensional structure of the atmosphere over time (4th dimension) are used in test planning, conduct, and forensic analyses. ***FY 2015 Accomplishments:*** Provided funding for meteorological instrumentation and technology to support RDT&E activities at Army test ranges. Included funding for development and enhancement of the 4DWX system, an advanced meteorological support system that provided high-resolution weather forecasts and analyses. The 4DWX analyses and forecasts of the 3-dimensional structure of the atmosphere over time (4th dimension) were used in test planning, conduct, and forensic analyses. ***FY 2016 Plans:*** Continues 4DWX system enhancements and modernization to improve forecast accuracy in support of Army RDT&E mission requirements, including development of probabilistic modeling, development and use of improved parameterizations of wind flow over complex terrain features; improved data assimilation procedures, and configuration of 4DWX for each test range	4.358	6.208	4.865

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605702A / *Meteorological Support to RDT&E Activities*	**Project (Number/Name)** 128 / *Meteorological Support To RDT&E Activities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
to optimize accuracy; and development of a Verification & Validation plan for 4DWX. Funds lifecycle replacement of high performance computing system required to operate the 4DWX weather model due to the current, aging system becoming obsolete. Instrumentation funding is used to continue a multiyear effort to replace/upgrade obsolete instrumentation, including upper-air sounding systems, upgrades to weather stations, replacement of radar wind profilers and Doppler acoustic sounders, and upgrade of data analysis and display software. ***FY 2017 Plans:*** Will continue 4DWX system enhancements and modernization to improve forecast accuracy in support of Army RDT&E mission requirements, including development of stream-flow prediction, development of a full-grid climatography using 4DWX final-analysis data, and further development of probabilistic modeling; improved data assimilation procedures, and configuration of 4DWX to optimize test range-specific accuracy; and continued 4DWX Verification and Validation efforts. Instrumentation funding will be used to continue a multiyear effort to replace/upgrade obsolete instrumentation, including upper-air sounding systems, upgrades to weather stations and replacement of radar wind profilers			
Accomplishments/Planned Programs Subtotals	6.289	8.303	6.925

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605706A *I Materiel Systems Analysis*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	20.578	20.403	21.677	-	21.677	22.087	21.639	22.054	22.453	-	-
541: *Materiel Sys Analysis*	-	20.578	20.403	21.677	-	21.677	22.087	21.639	22.054	22.453	-	-

A. Mission Description and Budget Item Justification

This program element funds Department of the Army (DA) civilians at the Army Materiel Systems Analysis Activity (AMSAA) to conduct responsive and effective materiel systems analysis in support of senior Army decision making for equipping the U.S. Army. AMSAA conducts systems and engineering analyses to support Army decisions in technology; materiel acquisition; and the design, development, fielding, and sustaining of Army weapon/materiel systems. As part of this mission, AMSAA develops and certifies systems performance data used in Army studies, and develops item-level performance methodology and Models and Simulations (M&S).

AMSAA exercises Headquarters Department of the Army (HQDA) responsibility for verification, validation, and accreditation of item-level performance M&S for combat effects, including the development and maintenance of common data formats. Similarly, AMSAA also exercises HQDA responsibility for developing, maintaining, improving, verifying, validating and accrediting item-level performance data and M&S for combat effects and logistics. In support of its materiel systems analysis mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and fielded systems. Unique models and methodologies have been developed to predict critical performance variables, such as weapon accuracy, target acquisition, rate of fire, and probability of inflicting catastrophic damage, survivability, mobility and system reliability. AMSAA generates performance and effectiveness measures and ensures their standard use across major Army and Joint studies. AMSAA conducts and supports various systems analysis efforts across the entire materiel system life cycle, such as: Analysis of Alternatives (AoAs); system cost/performance tradeoffs and early technology trade-offs to inform system and acquisition program risk assessments; weapons/systems mix analyses; business case analyses and cost benefit analyses; requirements analyses; technology insertion studies; reliability growth studies; Physics of Failure (PoF) analyses; and analytical support for Test and Evaluation. AMSAA also maintains, pursuant to Army Acquisition Executive direction, the Center for Army Acquisition and Materiel Lessons Learned (CAAMLL). These analyses are used by the Army Research, Development and Engineering Command; Army Materiel Command; Training and Doctrine Command; Army Test and Evaluation Command; Program Executive Officers/Project Managers; Headquarters, Department of the Army (HQDA) (both Army Staff and Assistant Secretaries in the HQDA Secretariat); and Office of Secretary of Defense (OSD)/Department of Defense (DoD) Leadership. AMSAA analyses and data are used by these organizations in making acquisition, procurement, and logistics decisions in order to provide quality equipment and procedures to the Soldier.

AMSAA's M&S capabilities support the development, linkage, and accreditation of live, virtual, and constructive simulations, and provide unique tools that support systems analysis of individual systems and the combined-arms environment. AMSAA maintains a significant number of models and simulations, most of which were developed in-house to address specific analytical requirements. This M&S infrastructure provides a hierarchical modeling process that is unique to AMSAA and allows for a comprehensive performance and effectiveness prediction capability that can be utilized to make trade-off and investment decisions prior to extensive and expensive hardware testing of proposed systems/technologies for Current and Future Force efforts. AMSAA is the Army's executive agent for the verification, validation, and accreditation of item/system level performance models. In this role, AMSAA assists model developers with the development and execution of verification and validation plans to ensure new models and simulations provide credible information/results for decision making.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605706A *I Materiel Systems Analysis*

AMSAA exercises HQDA responsibility for Army reliability methodology development. In this role, as the Army's Executive Agent for reliability and maintainability standardization improvement, AMSAA develops and implements reliability and maintainability reform initiatives that support acquisition decisions and lifecycle management. AMSAA develops and applies engineering approaches that assess the reliability of Army materiel and also provides recommendations on ways to improve reliability, thereby reducing logistics footprint, reducing life cycle costs, and extending failure-free periods for deployed equipment. AMSAA's electronic and mechanical Physics of Failure (PoF) program pioneered the Army's involvement in utilizing computer-aided engineering tools in the analysis of root-cause failure mechanisms at the component level during the system design process. AMSAA's reliability engineering and PoF tools/analyses have been used extensively to support the design improvement of developmental and fielded systems used in Current Operations resulting in improved reliability, reduced Operational and Support costs, and reduced logistics expenditures and footprint. AMSAA, in conjunction with the Army Evaluation Center, has formed the Center for Reliability Growth (CRG), which is developing critical tools, methodology, policies, formal guidance, and educational materials needed to help acquisition programs to achieve their required reliability during the acquisition process. The reliability improvements achieved for major weapon systems will translate into billions of dollars in operating and support cost savings across the life cycle.

AMSAA's unique analytical capabilities are supporting the Army Evaluation Center to assess and determine the essential analytical requirements to enhance Army evaluations and reduce extensive testing. AMSAA's support in this area improves evaluation products and result in better materiel solutions to the Warfighter. AMSAA assists in systems evaluations which support various Acquisition Category (ACAT) materiel system decisions, and provides quick response analyses in support of rapid initiatives for Current Operations.

As the Army's center for materiel systems analysis, AMSAA provides the technical capability to support Army and DoD decision makers throughout the entire acquisition process in responding to analytical requirements across the full spectrum of materiel. AMSAA's unique in-house, consistent, integrated analytical capability is a critical asset that provides Army leadership with timely, independent, unbiased, reliable, and high quality analysis to support complex decisions required for Current Operations and the development of the Future Force (Long-Range Investment Requirements Analysis (LIRA), Force 2025 and beyond). AMSAA's integrated set of skills and tools are focused on its core mission to be responsive to the breadth and depth of systems analysis requirements critical in supporting Army decisions.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	20.744	20.403	20.199	-	20.199
Current President's Budget	20.578	20.403	21.677	-	21.677
Total Adjustments	-0.166	0.000	1.478	-	1.478
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.166	-			
• Adjustments to Budget Years	-	-	1.478	-	1.478

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605706A *I Materiel Systems Analysis*

Change Summary Explanation

FY 2017 funding increase to support: 1) Cyberspace Operations (CO), Cybersecurity, and Cyber Electromagnetic Activities Modeling, Simulation and Analyses (MS&A); and 2) Software Analysis Capability to Support Test and Evaluation (T&E). This change holds true throughout the remaining Program Objective Memorandum (POM) years (FY2018 through FY2021) for continuous funding of these efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army										Date: February 2016		
Appropriation/Budget Activity 2040 / 6					R-1 Program Element (Number/Name) PE 0605706A / *Materiel Systems Analysis*				Project (Number/Name) 541 / *Materiel Sys Analysis*			
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
541: *Materiel Sys Analysis*	-	20.578	20.403	21.677	-	21.677	22.087	21.639	22.054	22.453	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program element funds Department of the Army (DA) civilians at the Army Materiel Systems Analysis Activity (AMSAA) to conduct responsive and effective materiel systems analysis in support of senior Army decision making for equipping the U.S. Army. AMSAA conducts systems and engineering analyses to support Army decisions in technology; materiel acquisition; and the design, development, fielding, and sustaining of Army weapon/materiel systems. As part of this mission, AMSAA develops and certifies systems performance data used in Army studies, and develops item-level performance methodology and Models and Simulations (M&S).

AMSAA exercises Headquarters Department of the Army (HQDA) responsibility for verification, validation, and accreditation of item-level performance M&S for combat effects, including the development and maintenance of common data formats. Similarly, AMSAA also exercises HQDA responsibility for developing, maintaining, improving, verifying, validating and accrediting item-level performance data and M&S for combat effects and logistics. In support of its materiel systems analysis mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and fielded systems. Unique models and methodologies have been developed to predict critical performance variables, such as weapon accuracy, target acquisition, rate of fire, and probability of inflicting catastrophic damage, survivability, mobility and system reliability. AMSAA generates performance and effectiveness measures and ensures their standard use across major Army and Joint studies. AMSAA conducts and supports various systems analysis efforts across the entire materiel system life cycle, such as: Analysis of Alternatives (AoAs); system cost/performance tradeoffs and early technology trade-offs to inform system and acquisition program risk assessments; weapons/systems mix analyses; business case analyses and cost benefit analyses; requirements analyses; technology insertion studies; reliability growth studies; Physics of Failure (PoF) analyses; and analytical support for Test and Evaluation. AMSAA also maintains, pursuant to Army Acquisition Executive direction, the Center for Army Acquisition and Materiel Lessons Learned (CAAMLL). These analyses are used by the Army Research, Development and Engineering Command; Army Materiel Command; Training and Doctrine Command; Army Test and Evaluation Command; Program Executive Officers/Project Managers; Headquarters, Department of the Army (HQDA) (both Army Staff and Assistant Secretaries in the HQDA Secretariat); and Office of Secretary of Defense (OSD)/Department of Defense (DoD) Leadership. AMSAA analyses and data are used by these organizations in making acquisition, procurement, and logistics decisions in order to provide quality equipment and procedures to the Soldier.

AMSAA's M&S capabilities support the development, linkage, and accreditation of live, virtual, and constructive simulations, and provide unique tools that support systems analysis of individual systems and the combined-arms environment. AMSAA maintains a significant number of models and simulations, most of which were developed in-house to address specific analytical requirements. This M&S infrastructure provides a hierarchical modeling process that is unique to AMSAA and allows for a comprehensive performance and effectiveness prediction capability that can be utilized to make trade-off and investment decisions prior to extensive and expensive hardware testing of proposed systems/technologies for Current and Future Force efforts. AMSAA is the Army's executive agent for the verification, validation, and accreditation of item/system level performance models. In this role, AMSAA assists model developers with the development and execution of verification and validation plans to ensure new models and simulations provide credible information/results for decision making.

AMSAA exercises HQDA responsibility for Army reliability methodology development. In this role, as the Army's Executive Agent for reliability and maintainability standardization improvement, AMSAA develops and implements reliability and maintainability reform initiatives that support acquisition decisions and lifecycle

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605706A / *Materiel Systems Analysis*	**Project (Number/Name)** 541 / *Materiel Sys Analysis*

management. AMSAA develops and applies engineering approaches that assess the reliability of Army materiel and also provides recommendations on ways to improve reliability, thereby reducing logistics footprint, reducing life cycle costs, and extending failure-free periods for deployed equipment. AMSAA's electronic and mechanical Physics of Failure (PoF) program pioneered the Army's involvement in utilizing computer-aided engineering tools in the analysis of root-cause failure mechanisms at the component level during the system design process. AMSAA's reliability engineering and PoF tools/analyses have been used extensively to support the design improvement of developmental and fielded systems used in Current Operations resulting in improved reliability, reduced Operational and Support costs, and reduced logistics expenditures and footprint. AMSAA, in conjunction with the Army Evaluation Center, has formed the Center for Reliability Growth (CRG), which is developing critical tools, methodology, policies, formal guidance, and educational materials needed to help acquisition programs to achieve their required reliability during the acquisition process. The reliability improvements achieved for major weapon systems will translate into billions of dollars in operating and support cost savings across the life cycle.

AMSAA's unique analytical capabilities are supporting the Army Evaluation Center to assess and determine the essential analytical requirements to enhance Army evaluations and reduce extensive testing. AMSAA's support in this area improves evaluation products and result in better materiel solutions to the Warfighter. AMSAA assists in systems evaluations which support various Acquisition Category (ACAT) materiel system decisions, and provides quick response analyses in support of rapid initiatives for Current Operations.

As the Army's center for materiel systems analysis, AMSAA provides the technical capability to support Army and DoD decision makers throughout the entire acquisition process in responding to analytical requirements across the full spectrum of materiel. AMSAA's unique in-house, consistent, integrated analytical capability is a critical asset that provides Army leadership with timely, independent, unbiased, reliable, and high quality analysis to support complex decisions required for Current Operations and the development of the Future Force (Long-Range Investment Requirements Analysis (LIRA), Force 2025 and beyond). AMSAA's integrated set of skills and tools are focused on its core mission to be responsive to the breadth and depth of systems analysis requirements critical in supporting Army decisions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Materiel Systems Analysis	20.578	20.403	21.677
Description: These funds are used by the US Army Materiel Systems Analysis Activity (AMSAA) to conduct various materiel systems analysis efforts in support of senior Army decision makers during FY15-21. AMSAA will continue to conduct analyses, materiel systems performance data generation and certification, methodology development, Modeling and Simulation (M&S) development, and verification, validation, and accreditation. The accomplishments include performance and combat effectiveness analyses of materiel systems and technology base programs for the Department of Army Secretariat/Staff, the Army Materiel Command, the Research, Development and Engineering Command, Program Executive Officers/Program Managers, the Training and Doctrine Command, the Army Service Component Commands, the Army Test and Evaluation Command, and the Office of the Secretary of Defense (OSD). These analyses form the basis for Analysis of Alternatives (AoAs), system cost/performance tradeoffs, early technology trade-offs, weapons/systems mix analyses, system risk assessments, business case analyses, cost benefit analyses, requirements analyses, technology insertion studies, reliability growth studies, Physics of Failure (PoF) analyses and analytical support for Test and Evaluation.			
FY 2015 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605706A / *Materiel Systems Analysis*	**Project (Number/Name)** 541 / *Materiel Sys Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Critical analyses from the US Army Materiel Systems Analysis Activity (AMSAA) continued to support Army key milestone decision reviews. AMSAA supported conceptual and developmental Acquisition Category ((ACAT) 1, ACAT 2, ACAT 3, and ACAT 4) programs, including but not limited to Improved Turbine Engine, Man Transportable Robotic System, Next Generation Diagnostic System, Personnel Decontamination, Pre-emptive Threat Detection, and the Maneuver Support Vessel-Light. In addition, AMSAA supported multiple trade-space efforts in support of the Deputy Under Secretary of the Army for Test and Evaluation (DUSA-TE), and provided analytical support to modify Test and Evaluation planning efforts to reduce testing through the use of modeling and simulation. AMSAA conducted follow-on studies for major Army programs undergoing engineering change proposals and continued to provide essential certified weapons system performance data for all major Army studies. AMSAAs technical work program relating to Analyses of Alternative (AoA) (both providing analytic input and certified data as well as leading specified AoAs), Business Case Analyses, Cost Benefit Analyses and Risk Assessments continued at a high level (similar to FY12 through FY14) as a result of DOD/DA efforts to meet the requirements laid out in the 2009 Weapons System Acquisition Reform Act. AMSAA realized an increase in analytical support to Army ACAT 3, and ACAT 4 systems due to budget restrictions and financial limitations. AMSAA continued efforts in support of the Army Center for Reliability Growth (CRG), the Center for Army Acquisition and Materiel Lessons Learned (CAAMLL) as well as efforts on current operations related tasks, analyses, and model enhancements, specifically those supporting system performance data development, and materiel system performance analysis. AMSAA continued to enhance its comprehensive set of essential verified and validated item/system level methodologies, tools, and models and simulations, insuring accurate and up-to-date analytical products across the full spectrum of Army capability/ commodity areas.			
FY 2016 Plans: Critical analyses from the US Army Materiel Systems Analysis Activity (AMSAA) continue to support Army key milestone decision reviews. AMSAA supports conceptual and developmental Acquisition Category ((ACAT) 1, ACAT 2, ACAT 3, and ACAT 4) programs, including but not limited to Joint Light Tactical Vehicle, Biometrics Enabling Capabilities, Multi-Function Electronic Warfare, Long Range Precision Fires, H-47 Block II, and Distributed Common Ground System – Army. In addition, AMSAA will support multiple trade-space efforts in support of the Deputy Under Secretary of the Army for Test and Evaluation (DUSA-TE), and provide analytical support to modify Test and Evaluation planning efforts, and reduce testing through the use of modeling and simulation. AMSAA will also analyze the use of software metrics for the DUSA-TE. AMSAA will conduct follow-on studies for major Army programs undergoing engineering change proposals and continue to provide essential certified weapons system performance data for all major Army studies. AMSAAs technical work program relating to Analyses of Alternative (AoA) (both providing analytic input and certified data as well as leading specified AoAs), Business Case Analyses, Cost Benefit Analyses and Risk Assessments will continue at a high level (similar to FY14 through FY15). AMSAA is anticipating an increase in analytical support to Army ACAT 3, and ACAT 4 systems due to budget restrictions and financial limitations. AMSAA will continue efforts in support of the Army Center for Reliability Growth (CRG), the Center for Army Acquisition and Materiel Lessons Learned (CAAMLL) as well as efforts on current operations related tasks, analyses, and model enhancements, specifically those supporting system performance data development, and materiel system performance analysis. AMSAA continues to enhance			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605706A / *Materiel Systems Analysis*	**Project (Number/Name)** 541 / *Materiel Sys Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
its comprehensive set of essential verified and validated item/system level methodologies, tools, and models and simulations to insure accurate and up-to-date analytical products across the full spectrum of Army capability/commodity areas. ***FY 2017 Plans:*** Critical analyses from the US Army Materiel Systems Analysis Activity (AMSAA) continue to support Army key milestone decision reviews. AMSAA supports Army conceptual and developmental Acquisition Category ((ACAT) 1, ACAT 2, ACAT 3, and ACAT 4) programs, including but not limited to: Dominate Mobility Through Terrain Shaping and Engagement; Autonomous Convoy Operations; Defense Cyberspace Operations; Army Cyber Situational Awareness; Assured Positioning, Navigation and Timing; Mission Command; Future Vertical Lift; Light Reconnaissance Vehicle; Synthetic Training Environment; and Force 2025. In addition, AMSAA will support multiple trade-space efforts in support of the Army Secretariat and Staff, and provide analytical support to modify Test and Evaluation planning efforts, and reduce testing through the use of modeling and simulation. AMSAA will also provide software analysis capability to support test and evaluation (T&E). AMSAA will conduct follow-on studies for major Army programs undergoing engineering change proposals and continue to provide essential certified weapons system performance data for all major Army studies. AMSAAs technical work program relating to Analyses of Alternative (AoA) (both providing analytic input and certified data as well as leading specified AoAs), Business Case Analyses, Cost Benefit Analyses and Risk Assessments will continue at a high level (similar to FY15 and FY16). AMSAA is anticipating an increase in analytical support to Army ACAT 3, and ACAT 4 systems due to budget restrictions and financial limitations. AMSAA will continue efforts in support of the Army Center for Reliability Growth (CRG), the Center for Army Acquisition and Materiel Lessons Learned (CAAMLL) as well as efforts on current operations related tasks, analyses, and model enhancements, specifically those supporting system performance data development, and materiel system performance analysis. AMSAA will continue to enhance its comprehensive set of essential verified and validated item/system level methodologies, tools, and models and simulations to insure accurate and up-to-date analytical products across the full spectrum of Army capability/commodity areas. Additional funding to support: 1) Cyberspace Operations (CO), Cybersecurity, and Cyber Electromagnetic Activities Modeling, Simulation and Analyses (MS&A); and 2) Software Analysis Capability to Support Test and Evaluation (T&E).			
Accomplishments/Planned Programs Subtotals	20.578	20.403	21.677

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605709A / *Exploitation of Foreign Items*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	8.418	10.396	12.415	-	12.415	12.624	12.980	13.212	13.437	-	-
C28: *Acq/Exploit Threat Items (MIP)*	-	8.418	10.396	12.415	-	12.415	12.624	12.980	13.212	13.437	-	-

A. Mission Description and Budget Item Justification

Program provides for the acquisition, exploitation, and inventory of foreign ground materiel with potential advanced technology threats to US systems, as well as emerging and destructive threats such as cyber vulnerabilities, biometric systems, and evolving improvised explosive devices. The primary aim of the program is to maximize the efficiency of research and development for force and materiel development by reducing the uncertainties associated with these threats. The program also answers scientific and technical intelligence requirements, provides materiel for realistic testing and training, and aids in the development of countermeasures to threat systems, materiel, and technologies. Operations have increased the amount of captured threat materiel that require immediate exploitation to develop countermeasures and force protection measures for US forces. Acquisition and exploitation are executed according to Army Foreign Materiel Program (FMP) Plan prioritization and with the approval of the Army Deputy Chief of Staff for Intelligence (G2).

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	7.015	10.396	7.664	-	7.664
Current President's Budget	8.418	10.396	12.415	-	12.415
Total Adjustments	1.403	0.000	4.751	-	4.751
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.403	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	4.751	-	4.751

Change Summary Explanation

Increase in funding classified - Army will provide under separate cover.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605709A / *Exploitation of Foreign Items*	Project (Number/Name) C28 / *Acq/Exploit Threat Items (MIP)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
C28: *Acq/Exploit Threat Items (MIP)*	-	8.418	10.396	12.415	-	12.415	12.624	12.980	13.212	13.437	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Program provides for the acquisition, exploitation, and inventory of foreign ground materiel with potential advanced technology threats to US systems, as well as emerging and destructive threats such as cyber vulnerabilities, biometric systems, and evolving improvised explosive devices. The primary aim of the program is to maximize the efficiency of research and development for force and materiel development by reducing the uncertainties associated with these threats. The program also answers scientific and technical intelligence requirements, provides materiel for realistic testing and training, and aids in the development of countermeasures to threat systems, materiel, and technologies. Operations have increased the amount of captured threat materiel that require immediate exploitation to develop countermeasures and force protection measures for US forces. Acquisition and exploitation are executed according to Army Foreign Materiel Program (FMP) Plan prioritization and with the approval of the Army Deputy Chief of Staff for Intelligence (G2).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Foreign Materiel Program (FMP) Acquisition	2.778	3.535	4.097
Description: Program provides for the acquisition of foreign ground materiel with potential advanced technology threats to US systems, as well as emerging and destructive threats such as cyber vulnerabilities, biometric systems, and evolving improvised explosive devices. The primary aim of the program is to maximize the efficiency of research and development for force and materiel development by reducing the uncertainties associated with these threats. The program also answers scientific and technical intelligence requirements, provides materiel for realistic testing and training, and aids in the development of countermeasures to threat systems, materiel, and technologies. Operations have increased the amount of captured threat materiel that require immediate exploitation to develop countermeasures and force protection measures for US forces. Acquisition and exploitation are executed according to Army Foreign Materiel Program (FMP) Plan prioritization and with the approval of the Army Deputy Chief of Staff for Intelligence (G2).			
FY 2015 Accomplishments: Continued to focus efforts on the acquisition of threat related foreign materiel systems and state-of-the-art technologies of military significance.			
FY 2016 Plans: Continues to focus efforts on the acquisition of threat related foreign materiel systems and state-of-the-art technologies of military significance.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605709A / *Exploitation of Foreign Items*	**Project (Number/Name)** C28 / *Acq/Exploit Threat Items (MIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will conduct Foreign Materiel Acquisition (FMA) of threat related foreign ground materiel systems and state-of-the-art technologies of military significance.			
Title: Army Foreign Materiel Program (FMP) Exploitation	5.640	6.861	8.318
Description: Program provides for the exploitation and inventory of foreign ground materiel with potential advanced technology threats to US systems, as well as emerging and destructive threats such as cyber vulnerabilities, biometric systems, and evolving improvised explosive devices. The primary aim of the program is to maximize the efficiency of research and development for force and materiel development by reducing the uncertainties associated with these threats. The program also answers scientific and technical intelligence requirements, provides materiel for realistic testing and training, and aids in the development of countermeasures to threat systems, materiel, and technologies. Operations have increased the amount of captured threat materiel that require immediate exploitation to develop countermeasures and force protection measures for US forces. Acquisition and exploitation are executed according to Army Foreign Materiel Program (FMP) Plan prioritization and with the approval of the Army Deputy Chief of Staff for Intelligence (G2). ***FY 2015 Accomplishments:*** Conducted Foreign Materiel Exploitation (FME) of threat related foreign ground materiel systems and state-of-the-art technologies of military significance. ***FY 2016 Plans:*** Conducts Foreign Materiel Exploitation (FME) of threat related foreign ground materiel systems and state-of-the-art technologies of military significance. ***FY 2017 Plans:*** Will conduct Foreign Materiel Exploitation (FME) of threat related foreign ground materiel systems and state-of-the-art technologies of military significance.			
Accomplishments/Planned Programs Subtotals	8.418	10.396	12.415

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605712A / *Support of Operational Testing*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	48.953	49.337	49.684	-	49.684	50.745	53.832	54.877	56.360	-	-
001: *ATEC Joint Tests And Follow-On Test & Eval*	-	0.000	0.000	0.077	-	0.077	0.089	0.114	0.136	0.150	-	-
V02: *ATEC Activities*	-	48.953	49.337	49.607	-	49.607	50.656	53.718	54.741	56.210	-	-

Note

Army Joint Test Element (JTE) moved from Program Element 0605898A, Project M65 to 0605712A, Project 001 in FY 2017.

A. Mission Description and Budget Item Justification

This Program Element (V02) provides the resources to operate the Army's Operational Test Command (OTC) which conducts independent operational tests that provide significant data to the Army decision-makers on key Army systems and concepts. This project finances recurring costs for OTC that are essential for conducting realistic and continuous testing in the critical areas of equipment, doctrine, force design and training. These recurring costs include civilian pay, requirements for test support contracts, temporary duty, training, supplies and equipment.

OTC consists of three forward Test Directorates (Airborne and Special Operations Test Directorate, Fort Bragg, North Carolina; Integrated Test and Evaluation Directorate, Fort Bliss, Texas; and the Fires Test Directorate, Fort Sill, Oklahoma) together with four other Test Directorates (Aviation; Maneuver; Mission Command; Maneuver Support and Sustainment) at Ft Hood, Texas. These activities support the development and fielding cycle of all Army acquisition programs including rapid fielding initiatives. The primary mission of these test directorates is to perform detailed planning, execution, and reporting of Initial Operational Test and Evaluation (IOTE), and Force Development Test and Experimentation (FDTE). Funding is also used to support the planning, execution and reporting of Intelligence and Electronic Warfare operational testing.

This project (001) also provides funding for the Army Joint Test Element (JTE) which examines Joint Service, Combatant Command (COCOM) and DoD agencies mission gaps, tactics and doctrine resulting in the development of Tactics Techniques and Procedures (TTP), Concept of Operations (CONOPS), and assessment documents. Products are developed through operational non-materiel solutions to urgent, specific, Joint Warfighter problems. The JTE coordinates and develops nominations for Quick Reaction Tests (QRTs), Joint Feasibility Studies (JFS); serves as the Operational Test Agency (OTA) for Army-led QRTs; and coordinates resources to support Joint Feasibility Studies (JFSs) and chartered Joint Tests (JT) under the Joint Test Unit (JTU) assigned to ATEC as the joint OTA. The ATEC Commanding General serves as the Executive Steering Committee (ESG) member, while the Executive Director serves as the Technical Advisory Board (TAB) member. DoDD 5010.41 provides policies and responsibilities for the JTE. The DA G-8 is the agent for JTE for operations and DoD level Senior Advisory Council (SAC) responsibly. Mission support also includes the support to two Joint Test Units (JTU) under the re-engineered Joint Test program. ATEC provides military resource support to Nellis Air Force Base, and Suffolk VA with Officer and Non-Commissioned Officer (NCO) support. Additional support to Joint Tests remains a requirement until the OSD Chartered projects are completed and transitioned to the respective Sponsoring COCOM.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*		R-1 Program Element (Number/Name) PE 0605712A / *Support of Operational Testing*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	49.217	49.337	49.644	-	49.644
Current President's Budget	48.953	49.337	49.684	-	49.684
Total Adjustments	-0.264	0.000	0.040	-	0.040
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.264	-			
• Adjustments to Budget Years	-	-	0.040	-	0.040

Change Summary Explanation

Army Joint Test Element (JTE) moved from Program Element 0605898A, Project M65 to 0605712A, Project 001 in FY 17.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605712A / *Support of Operational Testing*	Project (Number/Name) 001 / *ATEC Joint Tests And Follow-On Test & Eval*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
001: *ATEC Joint Tests And Follow-On Test & Eval*	-	0.000	0.000	0.077	-	0.077	0.089	0.114	0.136	0.150	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Army Joint Test Element (JTE) moved from Program Element 0605898A, Project M65 to 0605712A, Project 001 starting in FY 17.

A. Mission Description and Budget Item Justification

This project provides funding for the Army Joint Test Element (JTE) which examines Joint Service, Combatant Command (COCOM) and DoD agencies mission gaps, tactics and doctrine resulting in the development of Tactics Techniques and Procedures (TTP), Concept of Operations (CONOPS), and assessment documents. Products are developed through operational non-materiel solutions to urgent, specific, Joint Warfighter problems. The JTE coordinates and develops nominations for Quick Reaction Tests (QRTs), Joint Feasibility Studies (JFS); serves as the Operational Test Agency (OTA) for Army-led QRTs; and coordinates resources to support Joint Feasibility Studies (JFSs) and chartered Joint Tests (JT) under the Joint Test Unit (JTU) assigned to ATEC as the joint OTA. The ATEC Commanding General serves as the Executive Steering Committee (ESG) member, while the Executive Director serves as the Technical Advisory Board (TAB) member. DoDD 5010.41 provides policies and responsibilities for the JTE. The DA G-8 is the agent for JTE for operations and DoD level Senior Advisory Council (SAC) member. Mission support also includes supporting two Joint Tests under the Joint Test program, and assigned special projects. ATEC provides military resource support to Nellis Air Force Base, and Suffolk VA with Officer and Non-Commissioned Officer (NCO) support. Additional support to Joint Tests remains a requirement until the OSD Chartered projects are completed and transitioned to the respective Sponsoring COCOM.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Joint Test Element (JTE) Management Support	-	-	0.077
Description: This project funds Army's Joint Test Element (JTE) which is comprised of civilian and military personnel. The JTE is required to research COCOM Integrated Priorities, Generate/Develop/Support efforts through rigorous COCOM engagements, and provide support during QRT/JT support through the transition phase at the end of each directed project. As the OTA, the JTE is responsible to maintain oversight status for the OSD for all directed test efforts. In addition, JTE provides for handbook development for the Warfighter throughout the world in hard copy and in electronic book form. ***FY 2017 Plans:*** Will fund civilian labor and non-labor requirements such as supplies and travel in support of JTE initiatives, program support from remote JT stations and COCOM engagements.			
Accomplishments/Planned Programs Subtotals	-	-	0.077

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605712A / *Support of Operational Testing*	**Project (Number/Name)** 001 / *ATEC Joint Tests And Follow-On Test & Eval*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605712A / *Support of Operational Testing*	Project (Number/Name) V02 / *ATEC Activities*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
V02: *ATEC Activities*	-	48.953	49.337	49.607	-	49.607	50.656	53.718	54.741	56.210	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

The Operational Test Command (OTC) conducts independent operational tests that provide significant data to the Army decision-makers on key Army systems and concepts. This program element finances recurring costs for OTC that are essential for conducting realistic and continuous testing in the critical areas of equipment, doctrine, force design and training. These recurring costs include civilian pay, requirements for test support contracts, temporary duty, training, supplies and equipment.

OTC consists of three forward Test Directorates (Airborne and Special Operations Test Directorate, Fort Bragg, North Carolina; Integrated Test and Evaluation Directorate, Fort Bliss, Texas; and the Fires Test Directorate, Fort Sill, Oklahoma) together with four other Test Directorates (Aviation; Maneuver; Mission Command; Maneuver Support and Sustainment) at Ft Hood, Texas. These activities support the development and fielding cycle of all Army acquisition programs including rapid fielding initiatives. The primary mission of these test directorates is to perform detailed planning, execution, and reporting of Initial Operational Test and Evaluation (IOTE), Limited User Test (LUT), and Force Development Test and Experimentation (FDTE). USAOTC conducts operational tests required by public law (Title 10 USC 2399) that provide significant data to the Army decision-makers on key Army systems and concepts. Funding is also used to support the planning, execution and reporting of Intelligence and Electronic Warfare operational testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Operational Test Command (OTC) Activities	48.953	49.337	49.607
Description: Operational costs including: civilian pay, support contracts, temporary duty, supplies and equipment for subordinate elements of the Operational Test Command.			
FY 2015 Accomplishments: Operational costs included civilian pay, support contracts, temporary duty, supplies and equipment for the Operational Test Command.			
FY 2016 Plans: Operational costs included civilian pay, support contracts, temporary duty, supplies and equipment for the Operational Test Command.			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605712A / *Support of Operational Testing*	**Project (Number/Name)** V02 / *ATEC Activities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Operational costs will include civilian pay, support contracts, temporary duty, training, supplies and equipment for the Operational Test Command.			
Accomplishments/Planned Programs Subtotals	48.953	49.337	49.607

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605716A *I Army Evaluation Center*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	54.468	52.694	55.905	-	55.905	52.317	52.706	54.216	55.670	-	-
302: *Army Evaluation Center*	-	54.468	52.694	55.905	-	55.905	52.317	52.706	54.216	55.670	-	-

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This Program Element provides the resources to operate the Army Evaluation Center (AEC) which is responsible for all assigned developmental and independent operational evaluation of Army materiel, information and acquisition systems, an inherently government mission. This project funds direct civilian labor and minimum non-labor requirements to include: TDY, personnel training, career development, supplies and equipment, hardware, software, and other external OGA support for the RAM Center for Reliability Growth (CRG) and Underbody Blast Modeling and Simulation (UBM) initiatives. CRG improves reliability by providing policy, guidance, standards, methods, tools, and training resulting in increased materiel/operational availability, and initial operational testing success rates while decreasing support costs and logistics footprint. The UBM initiative identifies vehicle improvements directly impacting Soldier survivability.

AEC consists of seven directorates (Aviation-Fires Evaluation Directorate, BMD Evaluation Directorate (funded by MDA), C4ISR Evaluation Directorate, Integrated Suitability & Methodology Directorate, Mounted Systems Evaluation Directorate, Soldier & Support System Evaluation Directorate and Survivability Evaluation Directorate) and a headquarters element. AEC receives staff services from ATEC HQ. The primary competencies of these directorates is to evaluate effectiveness, suitability, survivability independently; determine if PM and user directed requirements are met, direct the test strategy and verify system safety.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	55.031	52.694	52.864	-	52.864
Current President's Budget	54.468	52.694	55.905	-	55.905
Total Adjustments	-0.563	0.000	3.041	-	3.041
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.563	-			
• Adjustments to Budget Years	-	-	3.041	-	3.041

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605716A *I Army Evaluation Center*

Change Summary Explanation

Increase in FY17, provides funding to support the labor of the AEC evaluators assigned to develop an independent operational evaluation of Army materiel, information and acquisition systems, which is an inherently government mission.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605716A / *Army Evaluation Center*	Project (Number/Name) 302 / *Army Evaluation Center*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
302: *Army Evaluation Center*	-	54.468	52.694	55.905	-	55.905	52.317	52.706	54.216	55.670	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This Program Element provides the resources to operate the Army Evaluation Center (AEC) which is responsible for all assigned developmental and independent operational evaluation of Army materiel, information and acquisition systems, an inherently government mission. This project funds direct civilian labor and minimum non-labor requirements to include: TDY, personnel training, career development, supplies and equipment, hardware, software, and other external OGA support for the RAM Center for Reliability Growth (CRG) and Underbody Blast Modeling and Simulation (UBM) initiatives. CRG improves reliability by providing policy, guidance, standards, methods, tools, and training resulting in increased materiel/operational availability, and initial operational testing success rates while decreasing support costs and logistics footprint. The UBM initiative identifies vehicle improvements directly impacting Soldier survivability.

AEC consists of seven directorates (Aviation-Fires Evaluation Directorate, BMD Evaluation Directorate (funded by MDA), C4ISR Evaluation Directorate, Integrated Suitability & Methodology Directorate, Mounted Systems Evaluation Directorate, Soldier & Support System Evaluation Directorate and Survivability Evaluation Directorate) and a headquarters element. AEC receives staff services from ATEC HQ. The primary competencies of these directorates is to evaluate effectiveness, suitability, survivability independently; determine if PM and user directed requirements are met, direct the test strategy and verify system safety.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Evaluation Center (AEC)	54.468	52.694	55.905
Description: Provide integrated technical and operational evaluations and continuous evaluation of assigned weapon systems and major automated information systems for major milestone decisions, materiel changes, and materiel releases in support of the Army Acquisition Executive and force development. Develop the evaluation strategy, design technical and operational tests, and evaluate the test results to address the combat effectiveness, suitability, and survivability factors pertinent to the decision process, of hundreds of systems/programs across the Army, other services and agencies. Prepare integrated System Evaluation Plans and conduct integrated technical and operational evaluations for all assigned systems. In support of Overseas Contingency Operations (OCO) and other real-world events, AEC continues to provide Capability & Limitation Reports and safety verification documents.			
FY 2015 Accomplishments: Funded the operational costs for the Army Evaluation Center (AEC) which includes civilian pay and non-labor costs (approximately 94% of AEC's total budget is civilian labor). Additionally, provided funding for the Underbody Blast Modeling and Simulation support that provides early identification of vehicle improvements that directly impact Soldier survivability; improved test			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605716A / *Army Evaluation Center*	**Project (Number/Name)** 302 / *Army Evaluation Center*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
design; provided additional evaluation data to support acquisition. Also, provided funding for the Center for Reliability and Growth in response to policies mandating Reliability Growth programs and periodic assessments for major systems. ***FY 2016 Plans:*** Funded the operational costs for the Army Evaluation Center (AEC) which includes civilian pay and non-labor costs (approximately 94% of AEC's total budget is civilian labor). Additionally, provide funding for the Underbody Blast Modeling and Simulation support that provides early identification of vehicle improvements that directly impact Soldier survivability; improves test design; provides additional evaluation data to support acquisition. Also, provide funding for the Center for Reliability and Growth in response to policies mandating Reliability Growth programs and periodic assessments for major systems. ***FY 2017 Plans:*** Funds the operational costs for the Army Evaluation Center (AEC) which includes civilian pay and non-labor costs (approximately 94% of AEC's total budget is civilian labor). Additionally, provides funding for the Underbody Blast Modeling and Simulation support that provides early identification of vehicle improvements that directly impact Soldier survivability; improves test design; provides additional evaluation data to support acquisition. Also, provides funding for the Center for Reliability and Growth in response to policies mandating Reliability Growth programs and periodic assessments for major systems. AEC is projected to support over 50 milestone decisions to include milestone A: Next Generation Chemical Detector (NGCD) Incr 4 (JPEO CBD); milestone B: Maneuver Support Vessel (L) (PEO CSCSS); milestone C: Bradley ECP 2 (PEO GCS), XM784/XM785 (PEO Ammo), JACM (PEO Missiles & Space); full rate production: WIN-T INC 3 (PEO C3T); and materiel release of 155mm-SCAM (PEO Ammo), Enhanced Night Vision Goggle (ENVG) (PEO Soldier) and AN/APR-39 (PEO IEW&S). AEC will continue to provide Capability & Limitation Reports and safety verification documents to support real-world operations.			
Accomplishments/Planned Programs Subtotals	54.468	52.694	55.905

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605718A *I Army Modeling & Sim X-Cmd Collaboration & Integ*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.081	0.938	7.959	-	7.959	1.654	3.189	2.409	2.455	-	-
S03: *Analysis M&S Tools and Services*	-	1.081	0.938	7.959	-	7.959	1.654	3.189	2.409	2.455	-	-

A. Mission Description and Budget Item Justification

PE 0605718A promotes the Army's Modeling and Simulation (M&S) strategy, defined by five guiding priorities: (1) formulate Army M&S policies; (2) develop and employ management processes for models, simulations and data; (3) develop M&S standards, architectures, networks and environments; (4) develop/employ new M&S tools and simulation technology; (5) develop an M&S workforce. PE 0605718A focuses on priorities 3 and 4.

M&S Standards, Architectures, Networks and Environments: The consistent use of standards, architectures, networks and environments advances the goal of interoperability. The Army coordinates with Joint, Interagency, Intergovernmental, and Multinational (JIIM) partners along with industry and academia to develop/employ standards that promote collaboration and facilitate the sharing of tools, data and information. The Army oversees procedures and processes for the appropriate use of standards to foster common formats and increase M&S and data reuse. The Army ensures these standards, architectures, networks and environments are readily accessible and can be reliably applied by users.

M&S Tools and Simulation Technology: The Army must have credible M&S tools and data to support the full range of Army organizational missions and functional responsibilities. M&S results that are timely and credible enhance decision making. The Army must develop and accredit reliable M&S tools so that decision makers and senior leaders benefit from the results and thus support the continued development, integration and use of such tools. To ensure credibility and reliability of results, M&S managers, developers and users must make the capabilities, constraints, limitations and assumptions of their M&S tools readily accessible. PE 0605718A provides for the development and employment of tools in the form of models, simulations and data that support the full range of Army interests and deliver timely information to enhance effective decision making. Moreover, these tools can be documented, verified, validated and accredited for their intended purpose in order to provide timely, credible results.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*			R-1 Program Element (Number/Name) PE 0605718A *I Army Modeling & Sim X-Cmd Collaboration & Integ*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	1.124	0.938	1.924	-	1.924
Current President's Budget	1.081	0.938	7.959	-	7.959
Total Adjustments	-0.043	0.000	6.035	-	6.035
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.043	-			
• Adjustments to Budget Years	-	-	6.035	-	6.035

Change Summary Explanation

FY 2017 increase to support new modeling and simulation tools and service requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605718A / *Army Modeling & Sim X-Cmd Collaboration & Integ*	Project (Number/Name) S03 / *Analysis M&S Tools and Services*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
S03: *Analysis M&S Tools and Services*	-	1.081	0.938	7.959	-	7.959	1.654	3.189	2.409	2.455	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

FY15-18 funds include those reprogrammed from PE0605718A, Project S05 - SIMTECH: $116,000, $117,000, $117,000, $118,000.

A. Mission Description and Budget Item Justification

The project "Analysis Tools and Services" has two functions:

Function 1 (priority 3 of the "Army M&S Strategy") -- Develop M&S standards, architectures, networks and environments that promote sharing, interoperability, access, and reliable application of tools, formats, data and information among/for users. M&S = Modeling and Simulation.

Function 2 (priority 4 of the "Army M&S Strategy") -- Develop and improve tools and technology in the form of models, simulations and data that support the full range of Army interests and deliver timely information to enhance effective decision making. These tools can be documented, verified, validated and accredited for their intended purpose.

Resources under Project S03 support the six M&S communities (Acquisition, Analysis, Experimentation, Intelligence, Test & Evaluation, Training) at the enterprise level through enabling efforts. These efforts include the following: (a) design models, simulations, data and tools that are resident within one organization but reusable and trusted by M&S users and specialists across the Army M&S Enterprise; (b) leverage industry and academia; (c) promote interoperability within M&S and between M&S and operational capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Develop M&S standards, architectures, networks and environments	0.352	0.310	2.625
Description: Develop M&S standards, architectures, networks and environments that promote sharing, interoperability, access, and reliable application of tools, formats, data and information among/for users. ***FY 2015 Accomplishments:*** FY15 funds are distributed among activities that promote the third priority of the Army M&S strategy: develop M&S standards, architectures, networks and environments. The specific distribution is based on requirements and priorities established prior to the start of and during FY15. ***FY 2016 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605718A / *Army Modeling & Sim X-Cmd Collaboration & Integ*	**Project (Number/Name)** S03 / *Analysis M&S Tools and Services*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY16 funds are distributed among activities that promote the third priority of the Army M&S strategy: develop M&S standards, architectures, networks and environments. The specific distribution will be based on requirements and priorities established prior to the start of FY16. ***FY 2017 Plans:*** FY17 funds will be distributed among activities that promote the third priority of the Army M&S strategy: develop M&S standards, architectures, networks and environments. The specific distribution will be based on requirements and priorities established prior to the start of and during FY17. Increase from last report will be applied to new requirements for M&S tools and services.			
Title: Develop M&S tools and technology ***Description:*** Develop and improve tools and technology in the form of models, simulations and data that support the full range of Army interests and deliver timely information to enhance effective decision making. These tools can be documented, verified and validated for their intended purpose. ***FY 2015 Accomplishments:*** FY15 funds are distributed among activities that promote the fourth priority of the Army M&S strategy: develop M&S tools and technology. The specific distribution is based on requirements and priorities established prior to the start of and during FY15. ***FY 2016 Plans:*** FY16 funds are distributed among activities that promote the fourth priority of the Army M&S strategy: develop M&S tools and technology. The specific distribution will be based on requirements and priorities established prior to the start of FY16. ***FY 2017 Plans:*** FY17 funds will be distributed among activities that promote the fourth priority of the Army M&S strategy: develop M&S tools and technology. The specific distribution will be based on requirements and priorities established prior to the start of and during FY17. Increase from last report will be applied to M&S tools and services.	0.729	0.628	5.334
Accomplishments/Planned Programs Subtotals	1.081	0.938	7.959

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605718A / *Army Modeling & Sim X-Cmd Collaboration & Integ*	**Project (Number/Name)** S03 / *Analysis M&S Tools and Services*

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605801A *I Programwide Activities*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	63.687	60.319	51.822	-	51.822	54.081	60.862	62.941	63.591	-	-
EU9: *Army Science Board*	-	0.000	0.000	1.561	-	1.561	1.585	1.639	1.681	1.771	-	-
M02: *Med Cmd Spt (Non-AMHA)*	-	25.386	24.769	26.071	-	26.071	26.035	27.004	28.305	29.067	-	-
M15: *ARI Mgmt/ADM Act*	-	3.388	3.493	3.369	-	3.369	3.436	3.517	3.599	3.678	-	-
M16: *Standardization Groups*	-	5.173	3.496	2.832	-	2.832	3.566	3.564	3.755	3.844	-	-
M42: *ARDEC Cmd/Ctr Support*	-	5.847	6.965	3.022	-	3.022	3.923	7.336	7.476	7.506	-	-
M44: *CECOM Cmd/Ctr Spt*	-	3.975	4.167	1.640	-	1.640	2.250	4.525	4.549	4.536	-	-
M46: *AMCOM Cmd/Ctr Spt*	-	8.717	3.634	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
M47: *TACOM Cmd/Ctr Spt*	-	2.734	3.382	3.239	-	3.239	3.142	3.204	3.277	3.287	-	-
M55: *Edgewood Chemical Biological Center*	-	6.335	6.550	6.835	-	6.835	6.819	6.622	6.702	6.183	-	-
M58: *SECOM CMD/CTR Spt*	-	0.936	2.146	2.105	-	2.105	2.141	2.198	2.287	2.379	-	-
M76: *Armament Group Support*	-	1.196	1.717	1.148	-	1.148	1.184	1.253	1.310	1.340	-	-

Note

New Project (EU9) in FY 2017 to support the Army Science Board.

A. Mission Description and Budget Item Justification

This program supports the non-Army Management Headquarters Activity RDT&E functions incident to the local operation and management of U.S. Army Research, Development and Engineering Command (RDECOM) Research Development and Engineering Centers, not identifiable with specific research and development projects.

Also supports the management and operation of multiple, globally-located RDECOM International Technology Centers (ITCs). The ITCs play an integral role in the U.S. Army efforts for international cooperative research, development and interoperability, and fulfill international memoranda of understanding requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*		R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*			
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	64.160	60.319	63.148	-	63.148
Current President's Budget	63.687	60.319	51.822	-	51.822
Total Adjustments	-0.473	0.000	-11.326	-	-11.326
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.473	-			
• Adjustments to Budget Years	-	-	-11.326	-	-11.326

Change Summary Explanation

FY17 decrease attributed to realignment to higher priority Army efforts. $4,836K was realigned from PE 0605801A, Project M46 (Anti-Tamper effort) to PE 0602705A, Project H94 and PE 0605024A, Project FB1.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) EU9 / *Army Science Board*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
EU9: *Army Science Board*	-	0.000	0.000	1.561	-	1.561	1.585	1.639	1.681	1.771	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New Project in FY 2017 to support the Army Science Board (ABS).

A. Mission Description and Budget Item Justification

The ASB is a federal advisory committee, organized under the Federal Advisory Committee Act (FACA) and the Government in the Sunshine Act, which provides the Secretary of the Army and Secretary of Defense with independent and transparent advice and recommendations on matters relating to scientific, technical, manufacturing, acquisition, logistics, and business management functions. The ASB dates to November 1951 when the Secretary of the Army, Honorable Frank Pace Jr., appointed twelve outstanding scientists and industrialists to a scientific advisory panel to assist him and the Army's leadership in creating an effective, economical, and progressive fighting force using existing technology and industrial resources. Three years later, this panel was expanded and officially designated the Army Scientific Advisory Panel (ASAP), with its first formal meeting held on November 16, 1954. In 1977, with the passage of FACA, the ASB was created to replace the ASAP.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Science Board (ASB)	-	-	1.561
Description: The ASB is a federal advisory committee, organized under the Federal Advisory Committee Act (FACA) and the Government in the Sunshine Act, which provides the Secretary of the Army and Secretary of Defense with independent and transparent advice and recommendations on matters relating to scientific, technical, manufacturing, acquisition, logistics, and business management functions. The ASB dates to November 1951 when the Secretary of the Army, Honorable Frank Pace Jr., appointed twelve outstanding scientists and industrialists to a scientific advisory panel to assist him and the Army's leadership in creating an effective, economical, and progressive fighting force using existing technology and industrial resources. Three years later, this panel was expanded and officially designated the Army Scientific Advisory Panel (ASAP), with its first formal meeting held on November 16, 1954. In 1977, with the passage of FACA, the ASB was created to replace the ASAP. ***FY 2017 Plans:*** Conduct four to six studies on behalf of the Secretary of the Army; likely in areas of Basic Science and Disruptive Technology; Weapons Systems; Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR); and Systems Engineering, Integrations, and Sustainment or other concerns related to the future of the force.			
Accomplishments/Planned Programs Subtotals	-	-	1.561

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** EU9 / *Army Science Board*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M02 / *Med Cmd Spt (Non-AMHA)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M02: *Med Cmd Spt (Non-AMHA)*	-	25.386	24.769	26.071	-	26.071	26.035	27.004	28.305	29.067	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides funding for authorized civilian workforce performing medical research, development,acquisition management and oversight that support the medical research, development, test, and evaluation (RDTE) programs at the U.S. Army Medical Research and Materiel Command (USAMRMC), Fort Detrick, Maryland to: (1) perform planning, programming, and budgeting; (2) manage resources; and (3) ensure compliance with U.S. Food and Drug Administration (FDA) and other regulatory and safety requirements. It also provides for continued operations of contracting and acquisition management functions performed by the U.S. Army Medical Research Acquisition Activity (USAMRAA) in support of the USAMRMC Medical RDTE Program.

Additionally, this project provides funding for the special immunization program (SIP). The SIP program provides FDA licensed vaccines and investigational new drug (IND) vaccines under informed consent to laboratory workers at the US Army Medical Research Institute of Infectious Diseases, and to other military, government, or contractor personnel who may be at risk of exposure to highly hazardous pathogenic microorganisms or toxins

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Civilian Authorized Salaries and other operational requirements	25.386	24.769	26.071
Description: Funding was provided for the following effort			
FY 2015 Accomplishments: Funded authorized civilian salaries and associated expenses (supplies, equipment, travel, etc) USAMRMC and USAMRAA. Also, provides regulatory, clinical monitoring and data support for the Special Immunization Program (SIP). This program provided non licensed vaccines under FDA oversight to personnel at risk of exposure to selected infectious diseases			
FY 2016 Plans: Funds authorized civilian salaries and associated expenses (supplies, equipment, travel, etc) USAMRMC and USAMRAA. Also, provides regulatory, clinical monitoring and data support for the Special Immunization Program (SIP). This program provides non licensed vaccines under FDA oversight to personnel at risk of exposure to selected infectious diseases			
FY 2017 Plans: Will fund authorized civilian salaries and associated expenses (supplies, equipment, travel, etc) at USAMRMC and USAMRAA. Also, will provide regulatory, clinical monitoring and data support for the Special Immunization Program (SIP). This program will provide non licensed vaccines under FDA oversight to personnel at risk of exposure to selected infectious diseases.			
Accomplishments/Planned Programs Subtotals	25.386	24.769	26.071

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M02 / *Med Cmd Spt (Non-AMHA)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M15 / *ARI Mgmt/ADM Act*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M15: *ARI Mgmt/ADM Act*	-	3.388	3.493	3.369	-	3.369	3.436	3.517	3.599	3.678	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) is the only Science and Technology (S&T) laboratory that conducts research to enhance the Soldier lifecycle (e.g., selection, assignment, training, leader development) and human relations (e.g., culture of dignity, respect, and inclusion). This project supports the non-Army Management Headquarters Activity (non-AMHA) management and administrative functions to enable ARI to accomplish its research mission and includes activities such as budget execution, procurement oversight, RDT&E program planning and evaluation, management control, security/safety, logistics, information technology, and personnel/manpower execution and oversight. ARI's behavioral and social science research provides effective non-materiel solutions to help the Army adjust to changes in force size and structure, a variety of mission demands and contexts, challenges in human relations, and budgetary constraints.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: ARI	3.388	3.493	3.369
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:*** Provided operation of management, administrative, personnel, budget, and support functions at a level consistent with Army and mission requirements to meet the needs of ARI as an Army Laboratory conducting the Army's personnel, training, leader development, and organizational performance R&D program. ***FY 2016 Plans:*** Providing operation of management, administrative, personnel, budget, and support functions at a level consistent with Army and mission requirements to meet the needs of ARI as an Army Laboratory conducting the Army's personnel, training, leader development, and organizational performance R&D program. ***FY 2017 Plans:*** Will provide operation of management, administrative, personnel, budget, and support functions at a level consistent with Army and mission requirements to meet the needs of ARI as an Army Laboratory conducting the Army's personnel, training, leader development, and organizational performance R&D program.			
Accomplishments/Planned Programs Subtotals	3.388	3.493	3.369

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M15 / *ARI Mgmt/ADM Act*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M16 / *Standardization Groups*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M16: *Standardization Groups*	-	5.173	3.496	2.832	-	2.832	3.566	3.564	3.755	3.844	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project M16 supports nine International Technology Centers (formerly known as Standardization Groups) in North America, South America, Asia, and Europe for personnel, travel and overhead costs, leases on buildings, and mandatory permanent change of station.

The mission of the International Technology Centers is to represent the Army and serve as in-country/region focal points for all international armaments cooperation relationship development in their areas (countries) of responsibility, including engagement with government agencies, academia, and defense industries.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: International Technology Centers Management	5.173	3.496	2.832
Description: Management / administrative support to International Technology Center			
FY 2015 Accomplishments: Provided management and administrative functions at a level consistent with mission requirements and supported needs at the nine International Technology Centers.			
FY 2016 Plans: Provide management and administrative functions at a level consistent with mission requirements and support needs at the nine International Technology Centers.			
FY 2017 Plans: Will provide management and administrative functions at a level consistent with mission requirements and will support needs at the nine International Technology Centers.			
Accomplishments/Planned Programs Subtotals	5.173	3.496	2.832

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M16 / *Standardization Groups*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M42 / *ARDEC Cmd/Ctr Support*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M42: *ARDEC Cmd/Ctr Support*	-	5.847	6.965	3.022	-	3.022	3.923	7.336	7.476	7.506	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Supports RDTE functions incident to the local operation and management of the U.S. Army Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, NJ, not identifiable with specific research and development projects financed under other program elements. Supported functions are necessary to sustain a viable Research Development and Engineering Center capable of providing essential management and administration of the ARDEC mission. Excludes Army Management Headquarters Activity (AMHA) management and administrative functions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management Support	5.847	6.965	3.022
Description: U.S. Army Armament Research, Development and Engineering Center (ARDEC) management / administrative efforts. ***FY 2015 Accomplishments:*** Provided management and administrative functions at a level consistent with mission requirements and support needs at ARDEC. ***FY 2016 Plans:*** Provide management and administrative functions at a level consistent with mission requirements and support needs at ARDEC. ***FY 2017 Plans:*** Will provide continued management and administrative functions at a level consistent with mission requirements and support needs at ARDEC.			
Accomplishments/Planned Programs Subtotals	5.847	6.965	3.022

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M44 / *CECOM Cmd/Ctr Spt*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M44: *CECOM Cmd/Ctr Spt*	-	3.975	4.167	1.640	-	1.640	2.250	4.525	4.549	4.536	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Supports RDTE functions incident to the local operation and management of the U.S. Army Communications-Electronics Research Development and Engineering Center (CERDEC), Aberdeen Proving Ground, MD, not identifiable with specific research and development projects financed under other program elements. Supported functions are necessary to sustain a viable Research Development and Engineering Center capable of providing essential management and administration of the CERDEC mission. Excludes Army Management Headquarters Activity (AMHA) management and administrative functions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management Support	3.975	4.167	1.640
Description: U.S. Army Communications-Electronics Research Development and Engineering Center (CERDEC) management and administrative efforts. ***FY 2015 Accomplishments:*** Provided management and administrative functions at a level consistent with mission requirements and support needs at CERDEC. ***FY 2016 Plans:*** Provide management and administrative functions at a level consistent with mission requirements and support needs at CERDEC. ***FY 2017 Plans:*** Will provide management and administrative functions at a level consistent with mission requirements and support needs at CERDEC.			
Accomplishments/Planned Programs Subtotals	3.975	4.167	1.640

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M44 / *CECOM Cmd/Ctr Spt*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M46 / *AMCOM Cmd/Ctr Spt*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M46: *AMCOM Cmd/Ctr Spt*	-	8.717	3.634	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

PE 0605801A, Project M46 (Anti-Tamper effort) to PE 0602705A, Project H94 and PE 0605024A, Project FB1.

A. Mission Description and Budget Item Justification

Supports RDTE functions incident to the local operation and management of the U.S. Army Aviation and Missile Research and Development Center (AMRDEC), Redstone Arsenal, AL, not identifiable with specific research and development projects financed under other program elements. Supported functions are necessary to sustain a viable Research Development and Engineering Center capable of providing essential management and administration of the AMRDEC mission. Excludes Army Management Headquarters Activity (AMHA) management and administrative functions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management Support	5.617	3.634	-
Description: U.S. Army Aviation and Missile Research and Development Center (AMRDEC) management and administrative efforts ***FY 2015 Accomplishments:*** Provided management and administrative functions at a level consistent with mission requirements and support needs at AMRDEC ***FY 2016 Plans:*** Provide management and administrative functions at a level consistent with mission requirements and support needs at AMRDEC			
Title: Protection Technology (PT) Program	3.100	-	-
Description: NOTE: Beginning in FY17, funding for the PT Program is realigned to 0602705A H94 and 0605024A FB1. The PT Program is a DOD program that encompasses the systems engineering activities intended to prevent and/or delay exploitation of critical technologies in U.S. weapons systems, to include reverse engineering of Anti-Tamper (AT) architecture on All Army Acquisition Programs. These activities involve the entire life-cycle of systems acquisition, including research, development, implementation and testing of PT measures. Protection of critical systems/technologies will help to impede technology transfer and alteration of system capability and prevent the development of countermeasures to US systems. Protection technology activities are covered by AR 70-77, “Program Protection”. ***FY 2015 Accomplishments:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M46 / *AMCOM Cmd/Ctr Spt*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Maintained the core team of subject matter experts (SMEs) available for this mission and conduct technical assessments of micro-electronic parts used in the electronic designs of a number of critical Army weapons systems.			
Accomplishments/Planned Programs Subtotals	8.717	3.634	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M47 / *TACOM Cmd/Ctr Spt*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M47: *TACOM Cmd/Ctr Spt*	-	2.734	3.382	3.239	-	3.239	3.142	3.204	3.277	3.287	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Supports RDTE functions incident to the local operation and management of the U.S. Army Tank Automotive Research Development Engineering Center (TARDEC), Warren, MI, not identifiable with specific research and development projects financed under other program elements. Supported functions are necessary to sustain a viable Research Development and Engineering Center capable of providing essential management and administration of the TARDEC mission. Excludes Army Management Headquarters Activity (AMHA) management and administrative functions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management Support	2.734	3.382	3.239
Description: U.S. Army Tank Automotive Research Development Engineering Center (TARDEC) management and administrative efforts. ***FY 2015 Accomplishments:*** Provided management and administrative functions at a level consistent with mission requirements and support needs at TARDEC. ***FY 2016 Plans:*** Provide management and administrative functions at a level consistent with mission requirements and support needs at TARDEC. ***FY 2017 Plans:*** Will provide management and administrative functions at a level consistent with mission requirements and support needs at TARDEC.			
Accomplishments/Planned Programs Subtotals	2.734	3.382	3.239

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M47 / *TACOM Cmd/Ctr Spt*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M55 / *Edgewood Chemical Biological Center*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M55: *Edgewood Chemical Biological Center*	-	6.335	6.550	6.835	-	6.835	6.819	6.622	6.702	6.183	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Supports RDTE functions incident to the local operation and management of the U.S. Army Edgewood Chemical Biological Center (ECBC), Aberdeen Proving Ground, MD, not identifiable with specific research and development projects financed under other program elements. Supported functions are necessary to sustain a viable Research Development and Engineering Center capable of providing essential management and administration of the ECBC mission. Excludes Army Management Headquarters Activity (AMHA) management and administrative functions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management Support	6.335	6.550	6.835
Description: U.S. Army Edgewood Chemical Biological Center (ECBC) management and administrative efforts. ***FY 2015 Accomplishments:*** Provided continued management and administrative functions at a level consistent with mission requirements and support needs at ECBC. ***FY 2016 Plans:*** Provide continued management and administrative functions at a level consistent with mission requirements and support needs at ECBC. ***FY 2017 Plans:*** Will provide continued management and administrative functions at a level consistent with mission requirements and support needs at ECBC.			
Accomplishments/Planned Programs Subtotals	6.335	6.550	6.835

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M55 / *Edgewood Chemical Biological Center*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*	Project (Number/Name) M58 / *SECOM CMD/CTR Spt*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
M58: *SECOM CMD/CTR Spt*	-	0.936	2.146	2.105	-	2.105	2.141	2.198	2.287	2.379	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Supports RDTE functions incident to the local operation and management of Natick Soldier Research, Development and Engineering Center (NSRDEC), Natick, MA, not identifiable with specific research and development projects financed under other program elements. Supported functions are necessary to sustain a viable Research Development and Engineering Center capable of providing essential management and administration of the NSRDEC mission. Excludes Army Management Headquarters Activity (AMHA) management and administrative functions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management Support	0.936	2.146	2.105
Description: Natick Soldier Research, Development and Engineering Center (NSRDEC) management and administrative functions			
FY 2015 Accomplishments: Provided continued management and administrative functions at a level consistent with mission requirements and support needs at NSRDEC.			
FY 2016 Plans: Provide continued management and administrative functions at a level consistent with mission requirements and support needs at NSRDEC.			
FY 2017 Plans: Will provide continued management and administrative functions at a level consistent with mission requirements and support needs at NSRDEC.			
Accomplishments/Planned Programs Subtotals	0.936	2.146	2.105

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M58 / *SECOM CMD/CTR Spt*

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army										Date: February 2016		
Appropriation/Budget Activity 2040 / 6					R-1 Program Element (Number/Name) PE 0605801A / *Programwide Activities*				Project (Number/Name) M76 / *Armament Group Support*			
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
M76: *Armament Group Support*	-	1.196	1.717	1.148	-	1.148	1.184	1.253	1.310	1.340	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The goal of this program is to expand worldwide allied standardization and interoperability through cooperative research and development (R&D) and technology sharing per SECDEF guidance and especially in support of the U.S. Army. This program partially funds the travel costs and administrative support (studies, analysis, interpretation, equipment, etc.) required to participate in international fora, such as the North Atlantic Treaty Organization (NATO) Army Armaments Group (NAAG), Defense Against Terrorism (DAT) and to pursue new cooperative R&D initiatives and international cooperative agreements such as memoranda of understanding. This program also includes: the United States' share of costs of the NATO Civil Budget, Chapter IX, which funds the NATO Industrial Advisory Group (NIAG) and the Special Fund for Cooperative Planning (U. S. Army is Executive Agent for this NATO bill); partially funds the Five Power Senior National Representatives, Army [SNR (A)], the Technical Cooperative Program, Bilateral SNR(A)s, and Army armaments working groups with many nations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Scientific Support NATO Army Armaments Group (NAAG)	0.349	0.304	0.202
Description: Funds supported Army subject matter experts to attend scientific and technological exchange, meetings, demonstrations, and/or simulations having military application and mutual benefits to the United States and its Allies. ***FY 2015 Accomplishments:*** Funds supported Army Subject Matter Experts to attend scientific and technological exchange, meetings, demonstrations, and/or simulations having military application and mutual benefits to the United States and its Allies. ***FY 2016 Plans:*** Funds support Army Subject Matter Experts (SME) to attend scientific and technological exchange, meetings, demonstrations, and/or simulations having military application and mutual benefits to the United States and its Allies. FY16 funds will fund 16 different working/capability groups that will meet twice a year at NATO Headquarters in Brussels. ***FY 2017 Plans:*** Funds will support NAAG Subject Matter Experts (SME) to attend scientific and technological exchange, meetings, demonstrations, and/or simulations having military application and mutual benefits to the United States and its Allies. FY17 funding will continue to fund different working/capability groups.			
Title: Executive Agent	0.847	1.413	0.946
Description: Funded the United States' share of the Mandatory NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this Mandatory NATO bill. In			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605801A / *Programwide Activities*	**Project (Number/Name)** M76 / *Armament Group Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Funded the United States' share of the NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this NATO bill. 2015 the Total NATO Bill was EU 880,445.70 equal to $985,444 US Dollars at the exchange rate of EU:0.893451. DAT and NIAG combined paid the nation's portion of the 2015 Civil Budget. ***FY 2016 Plans:*** Fund the United States' share of the NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this NATO bill. 2016 NATO Bill will be process for payment in May 2016 when the NATO releases the invoice requesting contribution towards financing the Defense Support DAT and NIAG portion of the 2016 Civil Budget. ***FY 2017 Plans:*** Fund the United States' share of the NATO Civil Budget, Chapter IX (Defense Support Programs). U. S. Army is Executive Agent for this NATO bill. In 2015 the Total NATO Bill was EU 880,445.70 equal to $985,444 US Dollars at the exchange rate of EU:0.893451.			
Accomplishments/Planned Programs Subtotals	1.196	1.717	1.148

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	28.781	28.478	33.323	-	33.323	32.701	30.540	31.520	39.858	-	-
720: *Tech Info Func Actv*	-	5.968	4.613	6.289	-	6.289	5.731	5.221	5.337	5.447	-	-
727: *Tech Info Activities*	-	5.664	9.039	11.134	-	11.134	11.463	10.030	10.342	10.549	-	-
730: *Pers & Trng Analys Act*	-	2.250	2.280	2.025	-	2.025	2.058	2.106	2.160	2.207	-	-
731: *Army High Performance Computing Centers*	-	5.180	4.021	4.544	-	4.544	4.368	4.477	4.578	4.677	-	-
733: *Acquisition Tech Act*	-	4.564	2.423	3.640	-	3.640	3.605	3.249	3.430	11.185	-	-
C16: *FAST*	-	1.415	1.966	1.596	-	1.596	1.464	1.502	1.543	1.575	-	-
C18: *BAST*	-	0.961	1.457	0.997	-	0.997	0.879	0.897	0.926	0.945	-	-
DW3: *Army Geospatial Enterprise Implementation*	-	2.779	2.679	3.098	-	3.098	3.133	3.058	3.204	3.273	-	-

A. Mission Description and Budget Item Justification

This program element(PE) supports upgrading the accuracy, timeliness, availability, and accessibility of scientific, technical, and management information at all levels of the Army Research and Development (R&D) community. Management of this information is critical to achieve the goals established by the Army's Senior Leadership. Use of accurate and timely technical information is essential to successfully meeting the milestones required on the path to the future force, allowing Army Science and Technology (S&T) leadership to refine investment strategy and quickly react to emerging opportunities and issues. This program includes initiatives to improve information derivation, storage, access, display, validation, transmission, distribution, and interpretation; to develop and enhance a single business model for Army S&T knowledge management information technology; to provide for Independent Review Team analysis of technology maturity as part of the Technology Area Readiness Assessment as required by DoDI 5000.2 dated May 12, 2003 as well as the Army Science Board (ASB) (projects 720 and 727). This program addresses the need to increase the competitiveness and availability of scientific, engineering, and technical skills in the DoD and National workforce through outreach programs aimed at middle school through college students and teachers. By providing direct working experience for these students in Army laboratories, the programs expose these students to the working world of science and engineering (project 729). The program includes funding for assessments in attitudes and opinions, longitudinal trends in Soldier and leader perceptions, and emerging issues to provide senior Army leaders with information on Soldiers' perceptions to inform personnel policy and program decision-making concerning manpower, personnel, and training issues (project 730). The program includes funding for support for Army high performance computing centers (project 731). The program includes funding for improvements to the Army's acquisition process (project 733). This program supports combatant commanders and major Army commands by providing science advisors to address scientific and technical issues and by providing engineering teams to solve field Army technical problems (project C16). Finally, this program funds studies by the Board on Army Science and Technology (BAST) (project C18). Coordination of this program with the other Services is achieved through inter-service working groups.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605803A *I Technical Information Activities*

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

Work in this PE is performed by the Research, Development, and Engineering Command (RDECOM), Aberdeen Proving Ground, MD, the Army Research Institute for the Behavioral and Social Sciences (ARI), Ft. Belvoir, VA, the Army Corps of Engineers' Engineer Research and Development Center (ERDC), Vicksburg, MS, Medical Research and Materiel Command (MRMC), Ft. Detrick, MD, Space and Missile Defense Command (SMDC), Huntsville, AL, and the Information Management Office, Arlington, VA.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	32.303	28.478	34.948	-	34.948
Current President's Budget	28.781	28.478	33.323	-	33.323
Total Adjustments	-3.522	0.000	-1.625	-	-1.625
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.500	-			
• SBIR/STTR Transfer	-1.022	-			
• Adjustments to Budget Years	-	-	-1.625	-	-1.625

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) 720 / *Tech Info Func Actv*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
720: *Tech Info Func Actv*	-	5.968	4.613	6.289	-	6.289	5.731	5.221	5.337	5.447	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides funding for technology transfer activities to support acquisition, storage, and utilization of technical information for both military and domestic applications. Effective exploitation of science and technology (S&T) information is critical to achieving the goals established by senior Army leadership. Activities include Army support for Federal Laboratory Consortium (FLC) as required by Public Law; the Army Science Board; the Army Science Conference; S&T database management efforts; and administration of the Army's Small Business Innovation Research (SBIR) and Small Business Technology Transfer Program (STTR) in accordance with the Small Business Innovation Development Act of 1982, the Small Business Research and Development Enhancement Act of 1992 and subsequent reauthorizing legislation. Technology transfer activities make technical information available to both the public and private sectors to reduce duplication in Research and Development programs and to increase competitiveness in the US business community. Database management efforts support development of decision aids, databases, and automation support for the management and execution of the Army Research, Development, Test and Evaluation (RDTE) appropriation. In addition, this project provides funding for patent legal expenses and fees for all U.S. Army Research, Development, and Engineering Command (RDECOM) subordinate commands and laboratories, as required by the Omnibus Budget Reconciliation Act.

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

Work is performed by the U.S. Army Research Development and Engineering Command (RDECOM), Aberdeen Proving Ground, MD and the U.S. Army Research Laboratory (ARL), Adelphi, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Provide Army Funding Support for Federal Laboratory Consortium as Required by Public Law 104-113	0.310	0.251	0.256
Description: Funding is provided for the following effort.			
FY 2015 Accomplishments: Provided Army funding support for Federal Laboratory Consortium as required by Public Law 104-113.			
FY 2016 Plans: Provide Army Funding Support for Federal Laboratory Consortium as Required by Public Law 104-113			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** 720 / *Tech Info Func Actv*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will provide Army funding support for Federal Laboratory Consortium as required by Public Law 104-113.			
Title: Provide Administrative and Contractual Support for the Army Science Board ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Provided administrative and contractual support for the Army Science Board.	0.954	-	-
Title: Administrative Support for the Army's SBIR and STTR Programs ***Description:*** Army Small Business Innovation Research (SBIR) and Army Small Business Technology Transfer (STTR) programs. In 1982, Congress, through the Small Business Innovation Development Act (P.L. 97-219) established the SBIR program to foster the involvement of U.S. based small businesses in federal research and development (R&D). The SBIR program is designed to increase the participation of small, high-technology firms in the federal R&D endeavor and give driven businesses the opportunity to provide innovative R&D solutions in response to critical Army needs. The STTR program expands the public/private sector partnership to include the joint venture opportunities for small business and the nation's premier nonprofit research institutions. The most important role of the STTR program is to foster the innovation necessary to meet the nation's scientific and technological challenges in the 21st century. The SBIR/STTR support services include program and technical advisory support services on a broad level. The Army SBIR/STTR Program Management Office mission requires synergized, integrated business solutions that concentrates on small business technological advances, and eliminates redundancy in a codified and consistent method that reduces confusion and ambiguity for the thousands of small businesses that participate in the SBIR and STTR programs. ***FY 2015 Accomplishments:*** Provided the Army SBIR/STTR Program Offices with the resources necessary to execute these Congressionally mandated Programs. The Army SBIR/STTR Program Offices procure program management and technical services required to support the programs. The support services include a broad range of program and technical assistance services such as programming; database support; drafting of letter reports, newsletters, briefings, presentation materials and correspondence; analyses; documentation for record keeping and reporting; and portal virtual machines development and support. The services assist the Program Offices in planning, coordinating, implementing, and orchestrating SBIR/STTR functions to include current and new approaches, processes and procedures as required by United States Code, Title 15, Section 638, Fiscal Year 2012 National Defense Authorization Act, Public Laws 112-81, and in Public Laws 97-219, 99-443, 102-564 and 106-554. ***FY 2016 Plans:*** Provide the Army SBIR/STTR Program Offices with the resources necessary to execute these Congressionally mandated Programs. The Army SBIR/STTR Program Offices procure program management and technical services required to support	0.889	1.029	1.283

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** 720 / *Tech Info Func Actv*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
the programs. The support services include a broad range of program and technical assistance services such as programming; database support; drafting of letter reports, newsletters, briefings, presentation materials and correspondence; analyses; documentation for record keeping and reporting; and portal virtual machines development and support. The services assist the Program Offices in planning, coordinating, implementing, and orchestrating SBIR/STTR functions to include current and new approaches, processes and procedures as required by United States Code, Title 15, Section 638, Fiscal Year 2012 National Defense Authorization Act, Public Laws 112-81, and in Public Laws 97-219, 99-443, 102-564 and 106-554. ***FY 2017 Plans:*** Will provide the Army SBIR/STTR Program Offices with the resources necessary to execute Congressionally mandated programs. The Army SBIR/STTR Program Offices procure program management and technical services required to support the programs. The support services include a broad range of program and technical assistance services such as programming; database support; drafting of letter reports, newsletters, briefings, presentation materials and correspondence; analyses; documentation for record keeping and reporting; and portal virtual machines (VM) development and support. The services assist the Program Offices in planning, coordinating, implementing, and orchestrating SBIR/STTR functions to include current and new approaches, processes and procedures as required by United States Code, Title 15, Section 638, Fiscal Year 2012 National Defense Authorization Act, Public Laws 112-81, and in Public Laws 97-219, 99-443, 102-564 and 106-554.			
Title: Provide Funding for Patent Fees and Patent Legal Expenses for U.S. Army Materiel Command (AMC) Commands and Laboratories ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Provided funding for patent fees and patent legal expenses for AMC commands and laboratories. ***FY 2016 Plans:*** Provide funding for patent fees and patent legal expenses for AMC commands and laboratories. ***FY 2017 Plans:*** Will provide funding for patent fees and patent legal expenses for AMC commands and laboratories.	1.158	1.164	1.069
Title: Provide Funding for S&T Strategic Planning and Support ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Provided funding for S&T Strategic Planning and Support. ***FY 2016 Plans:***	0.298	0.320	0.326

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** 720 / *Tech Info Func Actv*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Provide funding for S&T Strategic Planning and Support. ***FY 2017 Plans:*** Will provide funding for S&T Strategic Planning and Support.			
Title: Administer S&T Database Computer Engineering Support Contract and Support RDECOM Databases S&T Management Support ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Administered S&T database computer engineering support contract and supported RDECOM databases S&T management support. ***FY 2016 Plans:*** Administer S&T database computer engineering support contract and support RDECOM databases S&T management support. ***FY 2017 Plans:*** Will administer S&T database computer engineering support contract and support RDECOM databases S&T management support.	2.359	1.849	3.355
Accomplishments/Planned Programs Subtotals	5.968	4.613	6.289

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) *727 / Tech Info Activities*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
727: *Tech Info Activities*	-	5.664	9.039	11.134	-	11.134	11.463	10.030	10.342	10.549	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the development of decision aids, databases, and automation support for the management and execution of the Army Research, Development, Test, and Evaluation (RDTE) Appropriation. It includes the hardware, software, and contractor support required to develop and implement a set of management decision aids, databases, and hardware/software tools to support technical and budgetary decisions at the Office of the Secretary of Defense (OSD) and Department of the Army (DA). Most of the efforts in this project are on-going activities to support Army Research, Development, and Acquisition programs. Effective exploitation of S&T information is critical to achieving the goals established by Senior Army Leadership for the future force. Funding in this program supports Independent Review Team analysis of technology maturity as part of Technology Readiness Assessments as required by DoDI 5000.2.

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

Work in this project is performed by the Office of the Assistant Secretary of the Army, Acquisition, Logistics and Technology, The Pentagon, Washington, DC.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Conduct and support S&T program portfolio assessments and analysis. ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Conducted and supported S&T program portfolio assessments and analysis. ***FY 2016 Plans:*** Conduct and support S&T program portfolio assessments and analysis. ***FY 2017 Plans:*** Will conduct and support S&T program portfolio assessments and analysis.	0.759	1.257	1.720
Title: Support Army S&T strategic planning, analysis, and prioritization. ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:***	3.237	4.992	6.432

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** *727 / Tech Info Activities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Supported Army S&T strategic planning, analysis, and prioritization. ***FY 2016 Plans:*** Support Army S&T strategic planning, analysis, and prioritization. ***FY 2017 Plans:*** Will support Army S&T strategic planning, analysis, and prioritization.			
Title: Provide funding and support for Army Acquisition Program Technology Readiness Assessments for Program Milestone Decisions. ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Provided funding and support for Army Acquisition Program Technology Readiness Assessments for Program Milestone Decisions. ***FY 2016 Plans:*** Provide funding and support for Army Acquisition Program Technology Readiness Assessments for Program Milestone Decisions. ***FY 2017 Plans:*** Will provide funding and support for Army Acquisition Program Technology Readiness Assessments for Program Milestone Decisions.	1.068	1.800	1.912
Title: Provide Army support to Assistant Secretary of Defense for Research and Engineering Executive Staff for DoD-wide Science and Technology oversight. ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Provided Army support to Assistant Secretary of Defense for Research and Engineering Executive Staff for DoD-wide Science and Technology oversight. ***FY 2016 Plans:*** Provide Army support to Assistant Secretary of Defense for Research and Engineering Executive Staff for DoD-wide Science and Technology oversight. ***FY 2017 Plans:***	0.600	0.990	1.070

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** *727 / Tech Info Activities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will provide Army support to Assistant Secretary of Defense for Research and Engineering Executive Staff for DoD-wide Science and Technology oversight.			
Accomplishments/Planned Programs Subtotals	5.664	9.039	11.134

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) 730 / *Pers & Trng Analys Act*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
730: *Pers & Trng Analys Act*	-	2.250	2.280	2.025	-	2.025	2.058	2.106	2.160	2.207	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the Army's behavioral and social science research in attitudes and opinions assessment, longitudinal trends in Soldier and leader perceptions, and emerging issues. The research provides a unique capability to address a number of issues that directly or indirectly affect Soldier and unit performance and readiness, such as identifying the impact of personnel policies on Soldier outcomes and identifying emerging and potential personnel challenges. Requirements for this research is solicited on a recurring basis from the Secretary of the Army (SA), Chief of Staff of the Army (CSA), Army Deputy Chief of Staff (DCS G-1), and the Assistant Secretary of the Army for Manpower and Reserve Affairs (ASA(M&RA)).

Work in this project is managed by the US Army Research Institute for the Behavioral and Social Sciences (ARI), Ft. Belvoir, VA.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: PERS & TRNG ANALYS ACT	2.250	2.280	2.025
Description: Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Research conducted based on critical issues identified by the Secretary of the Army (SA), Chief of Staff of the Army (CSA), Deputy Chief of Staff G-1 (DCS G-1), and Assistant Secretary of the Army Manpower and Reserve (ASA(M&RA)). ***FY 2016 Plans:*** Conducting research on critical issues identified by the Secretary of the Army (SA), Chief of Staff of the Army (CSA), Deputy Chief of Staff G-1 (DCS G-1), and Assistant Secretary of the Army Manpower and Reserve (ASA(M&RA)). ***FY 2017 Plans:*** Will conduct reserach based on critical issues identified by the Secretary of the Army (SA), Chief of Staff of the Army (CSA), Deputy Chief of Staff G-1 (DCS G-1), and Assistant Secretary of the Army Manpower and Reserve (ASA(M&RA)).			
Accomplishments/Planned Programs Subtotals	2.250	2.280	2.025

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** 730 / *Pers & Trng Analys Act*

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) 731 / *Army High Performance Computing Centers*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
731: *Army High Performance Computing Centers*	-	5.180	4.021	4.544	-	4.544	4.368	4.477	4.578	4.677	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This project provides funding for the high performance computing (HPC) research environment, research, education, outreach, and sustainment infrastructure sustainment, and outreach support associated with the Army High Performance Computing Centers at the U.S. Army Research Laboratory (ARL) and the U.S. Army Tank and Automotive Research, Development, and Engineering Center (TARDEC). The Army High Performance Computing Centers provide high fidelity modeling, simulation, and analysis of materials, systems, and operational constructs. The Centers work with researchers at Army laboratories and research, development, and engineering centers to explore new HPC computing environments, algorithms in the computational sciences to address critical technology issues in computational research areas.

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

Work is performed by the U.S. Army Research Laboratory (ARL), Aberdeen Proving Ground, MD and the U.S. Army Tank and Automotive Research, Development, and Engineering Center (TARDEC), Warren, MI.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Sustain the High Performance Computing (HPC) Environment and Infrastructure in Support of the U.S. Army Research Laboratory (ARL)	3.580	3.601	4.264
Description: Funding is provided for the following effort.			
FY 2015 Accomplishments: Developed software for emerging central processing unit graphics processing unit (CPU-GPU) based heterogeneous computing architectures; maintained scalable software tools for Army users; maintained and developed software to support large data analysis support for petabytes of output; investigated emerging networking paradigm's for HPC networking R&D, classified SAP			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** 731 / *Army High Performance Computing Centers*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
scientific visualization, and software maintenance for Army-specific SAP projects; and researched computer systems to support fundamental and applied HPC research at ARL. ***FY 2016 Plans:*** Sustain HPC environment and infrastructure for armor/anti-armor, low observable technologies, large Army network data analytics for Army test and evaluation; validate and maintain software for emerging central processing unit graphics processing unit (CPU-GPU) based heterogeneous computing architectures; maintain software and hardware for ARL-specific applications, develop software engineering methods for maintaining scalable software tools for Army user; develop and provide software defined networking for HPC networking, classified SAP scientific visualization, and software maintenance for Army-specific SAP and related HPC projects; and research computer systems to support fundamental and applied HPC research for the Army. This effort supports (a) sustainment of SAP systems, software, visualization, (b) infrastructure support to emerging/future HPC systems (for example tactical cloudlet, heterogeneous computers), and (c) infrastructure for emerging networking (software defined networking). ***FY 2017 Plans:*** Will sustain computing infrastructure for ARL-specific special access facilities and Open Campus HPC systems; support advanced computing research architectures; maintain scalable software repository for the software developed under various Army funded research programs (e.g., Army High Performance Computing Research Center program, Army Research Office funded programs, University Affiliated Research Centers, Collaborative Technology and Research Alliances – specifically armor/anti-armor, low observable technologies, data intensive sciences software); support training and outreach activities (to facilitate training workforce in using new HPC technologies and parallel software); and support innovative hardware and software for next generation HPC networking, memory, and hierarchical storage pertaining to Supercomputers.			
Title: Sustain the High Performance Computing (HPC) Environment and Infrastructure in Support of the U.S. Army Tank and Automotive Research Development and Engineering Center (TARDEC) ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Sustained the HPC environment and infrastructure in support of the U.S. Army TARDEC. ***FY 2016 Plans:*** Sustain at reduced levels the HPC environment and infrastructure, classified and unclassified, at U.S. Army RDECOM-TARDEC in support of the execution of physics-based analyses performed on Army ground vehicles and platforms. ***FY 2017 Plans:***	1.600	0.420	0.280

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** 731 / *Army High Performance Computing Centers*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will transition from the HPC environment and infrastructure to utilizing the DoD Supercomputer Resource Center (DSRC) in support of the execution of physics-based analyses performed on Army ground vehicles and platforms.			
Accomplishments/Planned Programs Subtotals	5.180	4.021	4.544

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) 733 / *Acquisition Tech Act*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
733: *Acquisition Tech Act*	-	4.564	2.423	3.640	-	3.640	3.605	3.249	3.430	11.185	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds improvements to the Army's acquisition process by applying decision support and expert information systems, and by supporting analysis and evaluation of alternative acquisition strategies using techniques such as value-added analysis and analysis-of-alternatives. This project provides the environment for the analysis and evaluation of new information technologies, concepts, and applications for integrated management activities and support dynamic Army acquisition technology requirements. This program supports analysis efforts to conduct critical analyses for Army leadership in support of Army Transformation. These analyses are used by leadership in making acquisition, procurement, and logistics decisions in order to provide quality equipment and procedures to the Soldiers.

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

Work in this project is performed by the Army Acquisition Support Center, Ft. Belvoir, VA.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: ACQUISITION TECH ACT	4.564	2.423	3.640
Description: Distribute and beta test application programs and user interface utilities for executive level information systems that offer Standard Query Language services to Army Acquisition Corps corporate and global databases. Analyze acquisition program financial programming and budgeting requirements. Continue development of Weapon Systems Handbook, long-range planning and policy analysis, resource allocation analysis, cost tracking, and analysis.			
FY 2015 Accomplishments: Distributed and beta tested application programs and user interface utilities for executive level information systems that offer Standard Query Language services to Army Acquisition Corps corporate and global databases. Analyzed acquisition program financial programming and budgeting requirements. Continued development of long-range planning and policy analysis, resource allocation analysis, cost tracking, and analysis.			
FY 2016 Plans: Distribute and beta test application programs and user interface utilities for executive level information systems that offer Standard Query Language services to Army Acquisition Corps corporate and global databases. Analyze acquisition program financial			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** 733 / *Acquisition Tech Act*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
programming and budgeting requirements. Continue development of long-range planning and policy analysis, resource allocation analysis, cost tracking, and analysis. ***FY 2017 Plans:*** Will distribute and beta test application programs and user interface utilities for executive level information systems that offer Standard Query Language services to Army Acquisition Corps corporate and global databases; will analyze acquisition program financial programming and budgeting requirements; will continue development of long-range planning and policy analysis, resource allocation analysis, cost tracking, and analysis.			
Accomplishments/Planned Programs Subtotals	4.564	2.423	3.640

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) C16 / *FAST*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
C16: *FAST*	-	1.415	1.966	1.596	-	1.596	1.464	1.502	1.543	1.575	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides support for the Field Assistance in Science and Technology (FAST) program. The FAST program provides Science Advisors, recruited from Army Materiel Command (AMC) headquarters and all AMC Major Subordinate Commands (MSC) to serve combatant commands and major commands worldwide. FAST tours of duty provide significant professional growth opportunities for the Army's scientists and engineers and enable them to focus AMC resources on rapidly identifying and solving field technical problems that enable the improvement of readiness, safety, training, and reduce operations and support (O&S) costs. The FAST activity is supported by Quick Reaction Coordinators within the engineering centers. The FAST program recoups many times its cost in O&S savings. FAST also provides emerging technology demonstration opportunities to the engineering centers an Annual Program Review to facilitate sharing of lessons learned between science advisors at combatant commands, assists COCOMS with their annual Science and Technology Conferences. FAST also maintains close coordination with the Navy Science Advisor Program (Naval Fleet Forces Technology Integration Office).FAST supports warfighters in contingency operations with embedded Science and Technology Assistance Teams (STATs) as well as Science and Technology Acquisition Corps Advisors (STACAs).

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

Work in this project is performed by the US Army Materiel Command (AMC), Redstone Arsenal, AL Research, Development and Engineering Command (RDECOM), Aberdeen Proving Ground, MD.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Respond to combatant commanders worldwide with technological solutions.	1.415	1.966	1.596
Description: Funding is provided for the following effort.			
FY 2015 Accomplishments: Responded to combatant commanders worldwide with technological solutions to urgent materiel problems they identify; deploy science advisors with US Task Forces in support of combatant commanders; executed biannual Technology Applications Conference.			
FY 2016 Plans: Respond to combatant commanders worldwide with technological solutions to urgent materiel problems they identify; deploy science advisors with US Task Forces in support of combatant commanders; execute annual Program Review. Provide additional			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** C16 / *FAST*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
support needed to participate in combatant commander exercises; respond to corresponding Warfighter Requests for Information (RFI's) project support to offset capability gaps identified by the Warfighter. ***FY 2017 Plans:*** Will respond to combatant commanders worldwide with technological solutions to urgent materiel problems they identify; will deploy science advisors with US Task Forces in support of combatant commanders; will execute annual Program Review. Will provide additional support needed to participate in combatant commander exercises; will respond to corresponding Warfighter Requests for Information (RFI's) will provide project support to offset capability gaps identified by the Warfighter.			
Accomplishments/Planned Programs Subtotals	1.415	1.966	1.596

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) C18 / *BAST*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
C18: *BAST*	-	0.961	1.457	0.997	-	0.997	0.879	0.897	0.926	0.945	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Not applicable for this item.

A. Mission Description and Budget Item Justification

This project funds the Board on Army Science and Technology (BAST). The BAST functions under the auspices of the National Research Council (NRC) an organization within the National Academies of Sciences and provides an external, independent, and objective source of advice to the Army. The BAST serves as a convening authority for the discussion of science and technology issues of importance to the Army and oversees independent Army-related studies conducted by the National Academies. Working in close coordination with the Army, the BAST helps define problems, brings together experts to study these problems, and provides recommendations. Committees are assembled in accordance with established NRC procedures and BAST studies often take 12 months or more to conclude.

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

Work in this project is executed extramurally by the U.S. Army Research Laboratory, Army Research Office (ARO), Research Triangle Park, NC.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Provide Studies and Conduct Periodic Meetings to Help Identify, Assess, and Recommend Emerging Opportunities in Science and Technology (S&T) Fields Applicable to the U.S. Army. ***Description:*** Funding is provided for the following effort. ***FY 2015 Accomplishments:*** Studied emerging topics based on Army S&T strategy and senior leader initiatives. ***FY 2016 Plans:*** Study emerging topics based on Army S&T strategy and senior leader initiatives. ***FY 2017 Plans:*** Will study emerging topics based on Army S&T strategy and senior leader initiatives. Planning to initiate a new National Academies study.	0.961	1.457	0.997
Accomplishments/Planned Programs Subtotals	0.961	1.457	0.997

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** C18 / *BAST*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605803A / *Technical Information Activities*	Project (Number/Name) DW3 / *Army Geospatial Enterprise Implementation*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
DW3: *Army Geospatial Enterprise Implementation*	-	2.779	2.679	3.098	-	3.098	3.133	3.058	3.204	3.273	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Provides geospatial domain expertise to Mission Command (MC) in implementing the Army Geospatial Enterprise (AGE) across all MC Systems to ensure interoperability across the Army; Ensures Army systems can consume geospatial data from National-Geospatial Intelligence Agency (NGA) and with National System for Geospatial-Intelligence (NSG) partners as required by DoDI 5000.56; Standardizes geospatial data between echelons and ensures Standard, Sharable Geospatial Foundation (a Mission Command Essential Capability) across Mission Command; Sustains core mission of operations. Provides an interoperable geospatial baseline system of systems in theater, which is a near-term requirement that cannot be deferred. Geospatial is a Mission Command Essential Capability and a critical enabler for COE and the warfighter.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Geospatial Acquisition Support Office	2.779	2.679	3.098

Description: This effort supports the systems engineering, architecture, and test and certification of Army Acquisition Systems to support PEO/PM Computing Environment geospatial requirements to ensure that system's acquisition processes address geospatial concepts, technology and standards early in their development processes and provide an interoperable geospatial baseline system of systems in theater, which is a near-term requirement that cannot be deferred.

FY 2015 Accomplishments:

Extended Army Geospatial Enterprise (AGE) implementation within the Common Operating Environment (COE); developed and published geospatial data model ensuring integration between US Marine Corp and Army and aligning with updated National System for Geospatial Intelligence (NSG) standards; identified geospatial end state for COE version 3.0, provided experimentation and pilot support including geospatial expertise to COE pilot project; Developed, with industry, a geospatial data standard for mobile handheld devices called geopackage. Improved geospatial data exchange with mobile devices in a tactical environment.

FY 2016 Plans:

Develop geospatial end state for the Army Geospatial Enterprise (AGE) implementation within the Common Operating Environment (COE) version 3.0; Update geospatial data model ensuring integration between US Marine Corp and Army and alignment with updated National System for Geospatial Intelligence (NSG) standards; Define National to tactical geospatial architecture for Mission Command (MC), Develop AGE certification processes (aligned with current and planned Army and National Geospatial-Intelligence Agency (NGA) certification processes) to ensure MC systems align with AGE standards and architectures and therefore can exchange geospatial data. Develop profile for geopackage within the COE to ensure standard

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605803A / *Technical Information Activities*	**Project (Number/Name)** DW3 / *Army Geospatial Enterprise Implementation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
implementation within Mission Command. Will identify implementation recommendations (standards profiles, architectures and data model improvements) for AGE for COE version 3.0. Will continue improving geospatial data exchange with users in a disconnected, intermittent, and limited network environment environment. ***FY 2017 Plans:*** Will extend Army Geospatial Enterprise (AGE) implementation within the Command Post Computing Environment (CP CE), Mounted and Mobile Hand-Held CE's; will develop alternatives for providing Standard, Sharable Geospatial Foundation ((SSGF) a Mission Command Essential Capability) to Mission Command Systems in a disconnected, Intermittent or Limited (DIL) environment; Will develop and recommend standards to distribute SSGF from National to Tactical; will develop "to be" AGE roadmap for Mission Command ensuring interoperability between Mission Command systems, the National System for Geospatial Intelligence (NSG) and our Joint, Inter-Agency, Inter-Governmental and Multi-National (JIIM) partners; will provide geospatial domain expertise for Cross-Cutting Capabilities for the Common Operating Environment			
Accomplishments/Planned Programs Subtotals	2.779	2.679	3.098

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	62.168	64.604	40.545	-	40.545	40.204	41.034	43.867	39.227	-	-
296: *Close Combat Technology*	-	4.537	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
297: *Mun Survivability & Log*	-	13.279	7.544	15.149	-	15.149	15.035	15.168	14.602	13.902	-	-
857: *DoD Explosives Safety Standards*	-	1.766	1.826	1.607	-	1.607	1.603	1.649	1.675	1.706	-	-
858: *Army Explosives Safety Management Program*	-	0.526	0.542	0.633	-	0.633	0.645	0.671	1.172	1.170	-	-
859: *Life Cycle Pilot Process*	-	19.433	22.101	4.863	-	4.863	5.243	5.343	5.438	5.568	-	-
862: *Indirect Fire And Fuze Technology*	-	7.594	15.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
F21: *Direct Fire Technology and NATO Ammo Eval*	-	6.607	0.000	0.650	-	0.650	0.665	0.680	0.675	0.000	-	-
F24: *Conventional Munitions Demil*	-	8.426	17.591	17.643	-	17.643	17.013	17.523	20.305	16.881	-	-

A. Mission Description and Budget Item Justification

This Program Element supports continuing technology investigations. It provides a coordinated tri-service mechanism for the collection and free exchange of technical data on the performance and effectiveness of all non-nuclear conventional munitions and weapons systems in a realistic operational environment. It provides for Joint munition effectiveness manuals used by all services; development of standardization agreements (STANAGS) and associated Manuals of Proof and Inspection (MOPI); operation of the North American Regional Test Center (NARTC); evaluation of demilitarization methods for existing conventional ammunition (F24); evaluation of useful shelf life, safety, reliability and producibility of pyrotechnic munitions; and improvement of explosives safety criteria for DOD munitions via the DOD Explosives Safety Board (857). Munitions Survivability and Logistics (297) will make Army units more survivable by applying technologies to reduce the sensitivity of munitions to unplanned stimuli (e.g. bullet impacts, fragment impacts, fast cook off, slow cook off, sympathetic detonation, shaped charge jets) and by testing and demonstrating munitions logistics system solutions that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Project 297 also supports the Army Insensitive Munitions (IM) Board's reviews. The Army Explosives Safety Management Program (858) was established in FY01. The U.S. Army Technical Center for Explosives Safety uses the funds in this project to evaluate current explosives safety standards and develop new, scientific and risk-based standards to meet U. S. Army explosives requirements. The Life Cycle Pilot Program (LCPP) (859) will assess production base capabilities and needs over the acquisition life cycle of various munitions and will address the producibility of ammunition including the transition to type classification and production, and the ability of the production base to cost effectively produce quality products on schedule.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605805A *I Munitions Standardization, Effectiveness and Safety*

The F21 Direct Fire Technology and North Atlantic Treaty Organization (NATO) Ammunition Evaluation program funding is used to support small caliber ammunition, 40mm grenade munitions, medium caliber cannon ammunition and large caliber ammunition enhancements to lethality, effectiveness, survivability, accuracy and general product improvements. In addition, this program assures interchangeability of direct fire ammunition and weapons among all the NATO countries with all of the associated logistic, strategic and tactical advantages of the alliance. Project involves development and testing compliance of NATO standardization agreements (STANAGS) and staffing of the North American Regional Test Center (NARTC).

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	64.027	32.604	24.915	-	24.915
Current President's Budget	62.168	64.604	40.545	-	40.545
Total Adjustments	-1.859	32.000	15.630	-	15.630
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	32.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.859	-			
• Adjustments to Budget Years	-	-	15.630	-	15.630

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2015	FY 2016
Project: 296: *Close Combat Technology*		
Congressional Add: *Radio Frequency (RF) Remote Activation Munitions (RAM)*	0.722	-
Congressional Add Subtotals for Project: 296	0.722	-
Project: 859: *Life Cycle Pilot Process*		
Congressional Add: *FY 2015 Congressional Add*	15.000	-
Congressional Add: *FY 2016 Congressional Add*	-	17.000
Congressional Add Subtotals for Project: 859	15.000	17.000
Project: 862: *Indirect Fire And Fuze Technology*		
Congressional Add: *Hybird Projectile Technology*	-	15.000
Congressional Add Subtotals for Project: 862	-	15.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605805A *I Munitions Standardization, Effectiveness and Safety*

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2015	FY 2016
Congressional Add Totals for all Projects	15.722	32.000

Change Summary Explanation

FY 2017 increase attributed to additional funding for Munitions Logistics System Improvements and DEMIL Research and Development efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) 296 / *Close Combat Technology*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
296: *Close Combat Technology*	-	4.537	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project 296 Close Combat Technology transferred to PE 0607131A - Weapons and Munitions Product Improvement Programs, Project ER2 in FY 2016.

A. Mission Description and Budget Item Justification

This project will support research, development and testing to identify, characterize and resolve reliability, safety, storage and manufacturing issues that impact production availability and field use of demolitions, grenades, shoulder launched munitions, mines and mine clearing charges and pyrotechnics, including training realism. Project will result in the development and demonstration of new, safe, reliable and environmentally acceptable munitions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Grenade Fuze Sychronization Effort ***Description:*** Program effort to adapt a M201 Fuze body with an interchangable Pyrotechnic delay cartridge that can be utilized as an M228, M208 or M213 Fuze. Program is a product effeciency which would significantly reduce manufacturing cost of fuzes, logistic burden, and engineering support cost while reducing critical inspections and pull force requirements across all grenades. ***FY 2015 Accomplishments:*** One Fuze across multiple grenades at a much lower cost. Preliminary design and drawings are available from the FTI (Fuze Technology Integration) and this would be a follow on effort to verify the production readiness and grenade integration impacts across multiple programs.	0.150	-	-
Title: Dual Payload (M206) ***Description:*** Add an extended source (Infrared Cloud) material to the M206 Flare. Justification: Test data has shown single flare effectiveness can be increased with the addition of an extended IR (Infrared) source. Impact: increased number of countermeasure dispenses and reduce logistical burden. ***FY 2015 Accomplishments:*** M206 countermeasure flare effectiveness will be improved by adding Special Material. Performance - Increased effectiveness by doubling the countermeasure engagements that can respond to missile threat. Performance & Efficiency - Increases mission flight profiles.	1.012	-	-
Title: Degradable Chaff & Low Frequency Chaff (M1/M839)	0.817	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 296 / *Close Combat Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Develop chaff that will: 1) After dispense, lose its RF (Radio Frequency) component. 2) Disperse and bloom rapidly with minimal clumping and birdnesting even when used at low speeds from a hovering helicopter. 3) Enhance coverage in the low frequency range. 4) Type classify RR170 Chaff for Army use. Justification: the long persistence of Chaff causes interference with fire control and air traffic control radar. Impact: Chaff will continue to interfere with control and tracking radar, limiting its use in the field and training. ***FY 2015 Accomplishments:*** The operationally degradable chaff will address operational and training issues with chaff persistence. Performance - Increase frequency coverage where current Chaff lacks. Performance - Reduction of clumping and birdnesting will make the chaff more effective. Safety - Reduce interference with Traffic Control radars and aircraft radar systems. Environmental - Mitigates impact to farm animals that eat active dipoles after chaff deployment.			
Title: MK3A2 Replacement, Concussion Grenade Optimization Effort ***Description:*** This effort incorporates modern materials and insensitive explosives to provide a safer, producible concussion grenade. Use of the MK3A2 offensive grenade has been suspended due to age and safety issues. The current MK3A2 can expose the Soldier to toxic levels of asbestos. War fighters cannot safely employ the offensive grenade. Alternate munitions such as the M84 do not satisfy User needs for incapacitation of the enemy. ***FY 2015 Accomplishments:*** 1) Fabrication of Multi Cavity Die and proveout. 2) Fuze and Packaging procurement. 3) Injection molding of 250 grenades. 4) LAP and Marking of grenades. 5) Engineering level testing.	1.320	-	-
Title: Claymore Force-on-Force TADSS Trainer ***Description:*** Claymore Force-on-Force TADSS Trainer ***FY 2015 Accomplishments:*** Develop an improved Claymore Force-on-Force Trainer. While the Claymore is one of the most popular items used by the soldier, the system does not have a TADSS trainer with sight, sound & MILES capability. Development of an improved Claymore trainer will allow Claymore to be trained at CTCs and will provide more realistic and effective training for the user when they are training Claymore as an end item and when training Claymore as initiated by Spider.	0.516	-	-
Accomplishments/Planned Programs Subtotals	3.815	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 296 / *Close Combat Technology*

	FY 2015	FY 2016
Congressional Add: Radio Frequency (RF) Remote Activation Munitions (RAM)	0.722	-
FY 2015 Accomplishments: A low cost reusable RF-RAMS MK16 receiver will be re-designed with state of the art controller and safety circuitry to reduce its size, cost and enhance safety. The current RF-RAMS receiver contract cost is approximately $3,000 in quantities above 930. The goal of this effort is to update the existing receiver design and implement improved manufacturing processes to reduce the cost. The low cost MK16 receiver will integrate several manufacturing and producibility improvements to reduce production costs from approximately $3,000 to a production unit cost goal of less than $1,000.		
Congressional Adds Subtotals	0.722	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) 297 / *Mun Survivability & Log*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
297: *Mun Survivability & Log*	-	13.279	7.544	15.149	-	15.149	15.035	15.168	14.602	13.902	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the future force by making Army units more survivable through the investigation, testing and demonstration of munitions logistics system improvements that prevent or minimize catastrophic explosive events and accelerate ammunition resupply. Key thrusts are munitions storage area survivability, Insensitive Munitions (IM) technology integration and compliance, ammunition management and asset visibility, weapon system rearm, munitions configured load enablers and advanced packaging and distribution system enhancements. Within each thrust, a broad array of solutions will be identified, tested, and evaluated against developed system measures of effectiveness. Optimum, cost effective and efficient solutions that enable the rapid projection of lethal and survivable forces will be demonstrated. The early stages of force deployment are especially critical. Theater ammunition storage areas are vulnerable and present the enemy with lucrative targets. These areas and distribution nodes contain the only available munitions stocks in theater. Loss of these munitions could cripple the force, jeopardize the mission, and result in high loss of life. This project mitigates vulnerabilities and ensures a survivable fighting force.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Munitions Predictive Life	1.472	1.059	1.916

Description: This program will demonstrate technologies and algorithms that can help assess munitions serviceability based upon aggregate environmental exposures, system cycling and munition degradation models. The program will provide life cycle management tools for risk mitigation strategies, while reducing testing, inspection & surveillance required and improving weapon system reliability & and warfighter effectiveness.

FY 2015 Accomplishments:

Completed all ISO container thermal data collection and coordinated with the Munitions History Program to incorporate temperature exposure algorithmic models of munitions that accurately estimate the temperature exposure of munitions based on location, storage area type, and munition type. Conducted validation testing of ammunition database analysis based reliability and risk evaluation algorithmic procedures that can be applied periodically to evaluate reliability and risk and determine functionality inspection requirements for the .50 caliber ammunition family and began development of threshold levels for 5.56mm and 7.62mm caliber ammunition families. Completed calibration of an embedded propellant reliability sensor device that enables real-time monitoring of the effects of environmental exposure on ammunition propellant stability/reliability. Developed imaging based application to increase the fidelity of the estimation of ammunition time/temperature exposure for Therm-E-Log passive temperature sensor.

FY 2016 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 297 / *Mun Survivability & Log*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Complete validation of temperature exposure algorithmic models of munitions for inclusion in the Munitions History Program. Develop reliability and risk evaluation algorithms and conduct validation testing for 5.56mm and 7.62mm caliber ammunition families and develop threshold levels for hand grenades and 40mm caliber ammunition families. Integrate chemical based propellant reliability sensor into ammunition packaging and conduct demonstration. Conduct long term propellant validation testing for a resistance based reliability sensor. Complete prototype design of next generation ammunition container based temperature/humidity exposure reliability sensor. Conduct market survey of passive Radio Frequency Identification and low cost active environmental sensors for munitions, select viable candidates, and test. ***FY 2017 Plans:*** Complete integration of temperature exposure algorithmic models of munitions into the Munitions History Program. Develop ammunition database analysis based reliability and risk evaluation algorithms and conduct validation testing for grenade ammunition families. Conduct a trade-off analysis between brilliant green and resistance based propellant sensors to identify specific use cases for each. Conduct long term operational evaluation of next generation ammunition container based temperature/humidity exposure reliability sensor. Conduct market survey of passive Radio Frequency Identification and low cost active environmental sensors for munitions, select viable candidates, and test. Conduct correlation testing on the passive time/ temperature exposure sensor with legacy ammunition items and integrate.			
Title: Insensitive Munitions (IM) Integration Program ***Description:*** Demonstrate multiple IM technologies and integrate into end item(s) to improve munitions survivability and warfighter safety. IM Technologies, using State-of-the-Art materials, will be developed in the areas of warhead, propulsion and propellants, explosives, packaging, and barriers. In addition, modeling and simulation will be used to reduce development and testing costs. Efforts will increase the number of IM compliant ammunition items fielded to mitigate munitions reaction to unplanned stimuli such as fire, fragments, cook-off, bullets, adjacent munitions reaction (sympathetic detonation), and shape charge jet attacks. ***FY 2015 Accomplishments:*** Transitioned to the Project Manager (PM) optimized IMX-101 loading parameters and methods for M795 Artillery rounds. Finalized and performed Insensitive Munition (IM) and engineering performance test of pressed IMX-104 explosive and transitioned pressed IMX-104 for use in M795 IM Precision Guidance Kit (PGK) compatible projectiles. Successfully tested a fully IM-compliant 105mm M1 artillery cartridge system. Down selected the two most optimal formulations for medium caliber propellants. Finalized the first phase to prove out a propellant high shear mixing process to enhance the shock response in propellants for medium caliber. Developed methods and equipment modifications to produce eutectic components for IM munitions requiring eutectic venting technology. Developed, for the 30mm M789, IM enhanced internal packaging dunnage and performed engineering and IM tests. Demonstrated cook-off mitigation through less expensive container venting techniques for multiple systems. Finalized the design of the packaging container catch cage enclosure for Hand Held Signals, and transitioned the program to the PM. Conducted	7.984	3.379	5.666

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 297 / *Mun Survivability & Log*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
engineering level testing on 30mm cartridge case vent plugs and warhead fuze adapters to separate fuze from projectile body. Performed integrated testing of all IM solutions for the 40mm M430A1 grenades. ***FY 2016 Plans:*** Finalize pallet barrier design and perform rough handling for the IM enhanced 105mm M1. Transition all 105mm IM Technologies to the PM to include pallet barriers, vented cylindrical containers and cartridge case spacer to produce an IM compliant 105mm M1 round. Finalize propellant lab scale methodologies and testing hardware. Transition processing methodologies and IM propellants to medium and large caliber ammo programs. Transition to PMs and base process and methodologies to produce affordable eutectic components, and transition eutectic producibility methodologies to the PMs. Prove out a reduced shock sensitivity high explosive formulation (MDNT) and transition to applicable munitions requiring small critical diameter explosives. Scale-up in-house operations to produce 20lbs of non-energetic DAMT, a precursor material for making MDNT. Demonstrate the performance of MDNT in small diameter munitions. Demonstrate the reduced shock response of propellants manufactured with high shear mixing. Transition a reduced-sensitivity flexible explosive to the PM. Develop sub-scale slow cook off (SCO) and fast cook off (FCO) tests for the evaluation of propellants. ***FY 2017 Plans:*** Conduct integration testing of all 30mm M788/M789 IM technologies and transition to the PM. Select candidate materials for thermal mitigation and conduct 40mm M430A1 integration testing and transition to the PM technologies for packaging and warhead venting. Continue development of IM propellants for medium and large caliber munitions. Finalize in-house evaluation tools for sub-scale SCO and FCO for propellants. Develop venting technologies and propellants for base bleed projectiles. Continue development of high energy aluminized energetics for use in multipurpose warheads. Leverage technologies from the M430A1 grenade to develop liner release and warhead venting solutions to mitigate cook off.			
Title: Improved Munitions Packaging ***Description:*** This program will demonstrate upgrades to existing packaging components and materials to improve legacy ammunition survivability. These upgrades will enhance ammunition survivability and reliability, improve field ammunition operations, and improve packaging producibility. ***FY 2015 Accomplishments:*** Conducted engineering testing of HDPE cylindrical containers as lighter, less expensive replacements for current 120mm tank and 120mm/81mm mortar packaging and completed design modifications. Developed a preliminary design of a plastic polymer container for 5.56mm ammunition containers to be used in conjunction with plastic sealed ammunition pouches to reduce packaging weight and production costs. Developed updates to military and commercial standards and specifications for alternative Environmental Protection Agency registered preservatives for wood ammunition packaging materials. Researched into stockpile reports and past tests as well as conducted several in-house tests to validate proposed potential changes to ammunition	2.272	1.502	2.947

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 297 / *Mun Survivability & Log*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
packaging test requirements/specifications. Performed a market research study on readily available Eco-Friendly packaging solutions in industry as well as technologies in development for potential application to ammunition packaging. ***FY 2016 Plans:*** Conduct sequential rough handling testing of redesigned advanced lightweight cylindrical ammunition container packaging. Complete prototype design and fabrication of a plastic polymer container for 5.56mm ammunition containers to reduce packaging weight and production costs. Design and perform engineering and environmental testing of plastic sealed ammunition pouch for 5.56mm clipped ammunition to be used with or without a point protector box. Coordinate the review and approval of updates to military and commercial standards and specifications for alternative Environmental Protection Agency registered preservatives for wood ammunition packaging materials. Implement ammunition packaging test requirement changes that eliminate redundancies while continuing to research the feasibility of changing more technically complex physical characteristic requirements. Perform a phase II study of Eco-Friendly packaging solutions that will include a characterization study as well as performance testing on candidate products that may be incorporated into ammunition end item container component designs. Complete prototype design and conduct engineering testing on an enhanced fiber tube innerpack that improves protection and handling for 120mm mortar munitions. Perform unit load and transportation testing of enhanced ammunition pallet retention system that is lighter and provides easier access, complete design drawings and transition. ***FY 2017 Plans:*** Complete prototype verification testing (Unit Load, Insensitive Munitions, Electromagnetic Environmental Effects) for HDPE cylindrical containers. Optimize design and perform verification testing of plastic polymer rectangular container for legacy 5.56mm ammunition. Optimize design for plastic sealed ammunition pouches and perform validation testing with 5.56mm ammunition items. Fabricate packaging components using selected eco-friendly materials and conduct performance testing. Complete design modifications for an enhanced fiber tube innerpack for 120mm mortar munitions and conduct verification testing. Complete modeling and simulation of a small caliber ammunition bulk packaging container for improved distribution and retrograde efficiency.			
Title: Ammo Provider ***Description:*** This program demonstrates technologies that will assure a survivable munitions logistics system by increasing distribution velocity and protecting ammo storage areas. Technology areas to be investigated include ammunition asset visibility (including environmental sensors, marking technologies, and supply chain modeling), ammunition management (including improvements in stockpile surveillance and condition based management), sustainment (including pre-configured loads (soldier to unit size), field ammo reconfiguration capability, robotic handling, and improved load building capability), and force protection (including site planning software and field storage protection). ***FY 2015 Accomplishments:***	1.551	1.604	4.620

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 297 / *Mun Survivability & Log*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Completed design and testing of a centrifugal clutch braking mechanism for the helicopter delivered emergency resupply speedbag that will expand its use for heavier payloads, higher drop heights, and variable impact velocities. Conducted bullet impact testing for best and worst case scenario reactions and began developing guidelines for configuring more survivable tactical ammunition delivery loads. Completed performance and user testing and evaluation of commercial airbags for use as a replacement for wood dunnage in ammunition shipping containers. Evaluated the feasibility of utilizing Raman spectroscopy to determine the remaining useful life of ammunition propellants and significantly reduce the cost of surveillance testing.			
FY 2016 Plans: Complete rope cutter design and integrate into centrifugal clutch mechanism of enhanced speedbag system and conduct safety testing. Conduct fragment impact testing on containerized small caliber ammunition to determine the feasibility of using these containers as an outer barrier to reduce the reaction levels of palletized ammunition. Develop design and conduct modeling and simulation of a unitization solution for tactical partial pallet ammunition loads to improve handling and transportation efficiency. Complete market survey of technologies for manufacturing ammunition inner packing material at the field level. Develop an integration architecture for incorporating automated Material Handling Equipment into the Automated Supply Point – Scalable (ASP-S) planning and control software system that will streamline supply point operations. Complete requirements development and concept evaluation for an Ammunition Quality Decision Tool (AQDT) that will improve stockpile management and reliability. Assess interface concepts and off the shelf solutions that provide similar capabilities to the Joint Modular Intermodal Container (JMIC) at lower cost.			
FY 2017 Plans: Complete design of a partial/mixed pallet tactical ammunition load unitization solution and fabricate prototypes. Complete evaluation of technologies for manufacturing ammunition inner packing material at the field level and develop recommendations. Continue integration of automated MHE into ASP-S and conduct Phase 1 demonstration. Build a graphical user interface for ammunition risk & reliability and thermal pallet algorithms, incorporate into the Ammunition Quality Decision Tool and evaluate tool effectiveness. Complete JMIC Cost Benefit Analysis and alternative prototype design. Complete design of an applique interface kit for manually operated MHE that links the MHE to the ASP-S planning and control system for seamless operations during the transition period from fully manual operations to fully autonomous operations. Evaluate requirements and modify design as needed of munitions health monitoring systems to provide stockpile management capability for and ensure interoperability with ASP-S hardware and software. Develop the design concept for an automated pallet scanning and weighing capability to enable rapid accountability and autonomous load building in the ASP-S. Complete design of a web based version of the Munitions Survivability Software (MSS) prototype that will permit the quick design and layout of safe ammunition storage areas and integrate into the Virtual Forward Operating Base (VFOB) site planning tool. Complete design of an Unmanned Aerial System (UAS) – Resupply Pod and unpowered descent system that will improve supply delivery accuracy and survivability and UAS			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 297 / *Mun Survivability & Log*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
maneuverability. Develop requirements and design architecture for an intelligent, anticipatory, real-time ammunition management software tool.			
Accomplishments/Planned Programs Subtotals	13.279	7.544	15.149

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) 857 / *DoD Explosives Safety Standards*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
857: *DoD Explosives Safety Standards*	-	1.766	1.826	1.607	-	1.607	1.603	1.649	1.675	1.706	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the Research, Development, Test, and Evaluation efforts of the DoD Explosive Safety Standards Board. It supports explosive safety effects research and testing to quantify hazards and to develop techniques to mitigate those hazards in all DoD manufacturing, testing, transportation, maintenance, storage, disposal of ammunition and explosives operations, and also to develop risk based explosives safety standards. Results are essential to the development and improvement of quantity-distance standards, hazard classification procedures, cost effective explosion-resistant facility design procedures, and personnel hazard/ protection criteria.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Explosive and Munitions Tests	0.113	-	0.500
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:*** Developed improved explosives and munitions tests and characterization data. Specifically, continue development of improved gap tests for rocket motors. ***FY 2017 Plans:*** Explsoion effects testing to provide data for increasingly accurate predictions of real world effects			
Title: Safety Guidelines	1.061	1.826	0.450
Description: Funding is provided for the following effort ***FY 2015 Accomplishments:*** Developed improved DoD and NATO explosives safety guidelines for munitions storage, explosives and field operation facilities. Prepare revised Dod 6055.9-STD and 4145.26M. ***FY 2016 Plans:*** Develop standards for modern (large, robust) magazine construction and munitions configurations (IM, enhanced energetics, nanotechnology) based on more accurate models based on small scale testing ***FY 2017 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 857 / *DoD Explosives Safety Standards*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will develop improved DoD and NATO explosives safety guidelines for munitions storage, explosives and field operation facilities. Prepare revised Dod 6055.9-STD and 4145.26M.			
Title: Analysis Tools ***Description:*** Funding is provided for the following effort ***FY 2015 Accomplishments:*** Developed and improved analysis tools for explosives safety. Develop sequence of operations prototype. ***FY 2017 Plans:*** Develop more accurate models based on results of small scale testing and tools to implement revised standards. Improve usability.	0.592	-	0.657
Accomplishments/Planned Programs Subtotals	1.766	1.826	1.607

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) 858 / *Army Explosives Safety Management Program*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
858: *Army Explosives Safety Management Program*	-	0.526	0.542	0.633	-	0.633	0.645	0.671	1.172	1.170	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project establishes, validates or modifies explosives technical safety requirements per Department of Defense Pamphlet 385-64, Ammunition and Explosives Safety Standards. Project activities promote RDT&E of new and innovative explosives safety technologies that improve the survivability of Army personnel, facilities, and equipment as well as improve the health, safety and welfare of the general public.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Risk based explosives safety criteria	0.185	0.130	0.150
Description: Development of risk based explosives safety criteria that will aid commanders and safety personnel in the transition from regulation to risk management. ***FY 2015 Accomplishments:*** Continued explosives testing and support of hazard research and exposure consequences. ***FY 2016 Plans:*** Continue explosives testing and support of hazard research and exposure consequences. ***FY 2017 Plans:*** Will continue explosives testing and support of hazard research and exposure consequences.			
Title: Development of enhanced protective structure designs	0.241	0.200	0.260
Description: Develop enhanced protective structure designs that improve the survivability of Army personnel, facilities and equipment. ***FY 2015 Accomplishments:*** Continued explosives testing and support for improving protective construction designs. ***FY 2016 Plans:*** Continue explosives testing and support for improving protective construction designs. ***FY 2017 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 858 / *Army Explosives Safety Management Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue explosives testing and support for improving protective construction designs.			
Title: Development of explosive safety tools ***Description:*** Develop explosive safety tools for use by Army personnel. Explosive safety tools allow commanders and safety personnel to make explosive safety decisions using risk management methodologies. ***FY 2015 Accomplishments:*** Continued development of new methods and tools for risk assessment to improve explosive safety risk management decisions. ***FY 2016 Plans:*** Continue development of new methods and tools for risk assessment to improve explosive safety risk management decisions. ***FY 2017 Plans:*** Will continue development of new methods and tools for risk assessment to improve explosive safety risk management decisions.	0.100	0.212	0.223
Accomplishments/Planned Programs Subtotals	0.526	0.542	0.633

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) 859 / *Life Cycle Pilot Process*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
859: *Life Cycle Pilot Process*	-	19.433	22.101	4.863	-	4.863	5.243	5.343	5.438	5.568	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the implementation of the Single Manager for Conventional Ammunition (SMCA) Industrial Base Strategic Plan through technology investigations, model based process controls, pilot prototyping, and industrial assessments. It will assess life cycle production capabilities required for all ammunition families, address design for manufacturability to facilitate economical production, identify industrial and technology requirements, and address the ability of the production base to rapidly and cost effectively produce quality products. Cost Reduction is an important part of the Life Cycle Pilot Process (LCPP). LCPP provides the resources to prototype critical technologies and develop the knowledge base to establish cost effective, environmentally safe and modern production processes in support of the munitions Industrial Base transformation. In addition, the LCPP program addresses Single Point Failures (SPFs)/No Source of supply within the National Technology Industrial Base (NTIB). LCPP provides support to reduce supply chain risk by investigating, developing and evaluating additional sources of supply for a known SPF.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Product Cost Thrust Area	0.662	0.319	1.424
Description: This thrust area seeks out new opportunities to reduce overall manufacturing costs of ammunition and ammunition components. RDTE efforts will review and analyze legacy manufacturing processing for opportunities to integrate new technology and lean manufacturing processes to reduce cost. ***FY 2015 Accomplishments:*** Completed multi-use ultrasound probe explosive process control project, foamed starter patch and Nitrocellulose (NC) model verification. Initiate shape charge jet disrupter manufacturing process development. Evaluate new technology for legacy processes to reduce overall production costs for the Army. ***FY 2016 Plans:*** Complete shape charge jet disrupter. Evaluate new technology for legacy processes to reduce overall production costs for the Army. ***FY 2017 Plans:*** Will evaluate, assess and transition new technology for legacy processes to reduce overall production costs for the Army. Technology transitions to affected Industrial Base via the Production Base Support Modernization program.			
Title: Single Point Failures	1.012	0.749	1.076

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 859 / *Life Cycle Pilot Process*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Project thrust area efforts will employ manufacturing technologies to address SPFs. These projects are part of the overall strategy to reduce the number of SPFs in the NTIB. Additionally, thrust area efforts address ammunition manufacturing capability shortfalls. This area leverages RDTE accomplishments and product knowledge to satisfy manufacturing requirements. ***FY 2015 Accomplishments:*** Completed mitigation of High Fragmentation-1 (HF-1) Steel single point failure. Complete Commercial Off-the Shelf (COTS) primer project. Initiate mitigation of antimony sulfide and smoke pot lid SPFs. Continue development of manufacturing technology and processes for SPFs. Efforts will address source of supply problems within the NTIB. ***FY 2016 Plans:*** Complete mitigation of single point failures for antimony sulfide and smoke pot lid. Continue development of manufacturing technology and processes for SPFs. Efforts will address source of supply problems within the NTIB. ***FY 2017 Plans:*** Will continue development of manufacturing technology and processes for SPFs. Efforts will address source of supply problems within the NTIB. Technology transitions and risk mitigation strategies are transferred to Product Managers (PMs)/Product Directors (PDs) for their use in assessing procurement strategies for affected SPF end items.			
Title: Manufacturing Technology for Industrial Base Transformation ***Description:*** Project thrust area identifies and develops technologies that can be utilized at multiple government and private ammunition manufacturing locations to transform the NTIB. ***FY 2015 Accomplishments:*** Completed ultrasound analyzer for process control in explosives manufacturing, NC model verification and Counter Current Ion Exchange for nitrate laden waste treatment. Initiate multi-axis platform for energetic manufacture, ultrasound applications to propellant extrusion and Metastable Interstitial Composite (MIC)/green primer pilot scale manufacturing. Investigate potential technologies to transform key manufacturing processes in the NTIB. Continue investigations, develop and document manufacturing technology for transition to the NTIB. ***FY 2016 Plans:*** Complete multi-axis platform for manufacture of energetic systems and ultrasound inspection of propellant during extrusion. Continue MIC/green primer pilot scale manufacturing. Continue investigations, develop and document manufacturing technology for transition to the NTIB. ***FY 2017 Plans:***	2.759	4.033	2.363

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 859 / *Life Cycle Pilot Process*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will continue MIC/green primer pilot scale manufacturing. Continue investigations, develop and document manufacturing technology for transition to the NTIB. Technology transitions to affected Industrial Base via the Production Base Support Modernization program.			
Accomplishments/Planned Programs Subtotals	4.433	5.101	4.863

	FY 2015	FY 2016
Congressional Add: FY 2015 Congressional Add ***FY 2015 Accomplishments:*** FY 2015 Congressional Add titled Program Increase	15.000	-
Congressional Add: FY 2016 Congressional Add ***FY 2016 Plans:*** FY 2016 Congressional titled program increase of $17M.	-	17.000
Congressional Adds Subtotals	15.000	17.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) 862 / *Indirect Fire And Fuze Technology*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
862: *Indirect Fire And Fuze Technology*	-	7.594	15.000	0.000	-	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project 862 Indirect Fire and Fuze Technology transferred to PE 0607131A - Weapons and Munitions Product Improvement, Project ER5 in FY 2016.

A. Mission Description and Budget Item Justification

This program will identify, study, analyze and support enhanced lethality, range extension and standardization to improve target engagement effectiveness; increase reliability, safety, and exportability; and reduce taxpayer costs including elimination of sole source supply of indirect fires ammunition materials as well as studies and analyses of such technology solutions in comparison to current stockpile indirect fire conventional munitions and their associated production processes. Additionally, environmental impacts of legacy propellants, explosives and metal parts will be studied. Replacement of hazardous materials such as Ammonium Perchlorate, Diphenylamine, Lead, etc. and addition of propellant anti-tubewear additives will remain a focus. This program supports the standardization and interoperability of legacy and new production ammunition to maximize munitions battlefield interchangeability/compatibility between 52 and 39 caliber guns under the auspices of the international Joint Ballistics Memorandum Of Understanding (JBMOU) as well as rifled and smooth-bore mortars. Maximizing standardization, interchangeability, and exportability will potentially increase FMS sales of US products to maintain domestic production and economies of scale.

This program will also identify, study, analyze and support fuzing and safe and arm devices. This program will implement these technologies into fuzing systems to preclude obsolescence, maximize standardization, enhance performance, and improve the safety and exportability of existing munitions. The project addresses two major areas: (1) analysis and (2) block upgrades. Analysis efforts will identify second sources for fuzing systems that may reduce cost by providing competition, and maintain production when sources or parts are no longer available. It will also allow for the performance enhancement of current ammunition items by conducting studies of major fuze components to detect and identify latent defects. The second major area is block upgrades, which will identify and perform studies on improvements to fuzes; increase commonality of fuze components and requirements. Block upgrades will enable the introduction of the latest technologies into fuzing, keep the fuzing design current to avoid obsolescence issues, and add capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Indirect Fire & Fuze ARDEC Support.	1.699	-	-
Description: Evaluate component alternatives. ***FY 2015 Accomplishments:*** Block Upgrades: Evaluated Micro Electro-Mechanical Systems (MEMS) component fabrication improvements to increase yield and lower cost. Conducted engineering tests to verify MEMS fabrication improvements. Studied improvements on M734A1/M783 mortar fuze delay primer for increased delay mode reliability. Conducted evaluations on electronics upgrades to M734A1 mortar			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** 862 / *Indirect Fire And Fuze Technology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
fuze for improved safety and increased performance reliability. Conducted evaluations and prove-out packing clip improvement on mortar training rounds. Implement with production fuzes. Studied M734A1/M783 impact switch upgrade concept for performance improvements. Identified & evaluated 40mm M550 setback spring interface improvements for increased throughput. Studied improvements on fuze setter interface.			
Title: Indirect fire & Fuze PM CAS Support ***Description:*** Study and analyze enhanced lethality technology to improve effectiveness and eliminate sole source High Fragmentation -1 steel indirect fires. ***FY 2015 Accomplishments:*** Studied, analyzed and supported enhanced lethality technology to improve effectiveness and eliminate sole source High Fragmentation (HF-1) steel in indirect fires. Examined alternate commercial AISI steel and advanced processes. Fabricated prototypes and conducted lethality testing to validate commercial steel producibility with novel controlled fragmentation processes. Conducted ballistic testing on M821 to verify firing tables. Conducted joint NATO/Allied Cannon Munitions Interchangeability analysis and support of battlefield interchangeability/compatibility of munitions and associated enabling technologies between 52 and 39 caliber 155mm guns. Activities included ballistic testing including firing tables, safety, reliability and performance.	5.895	-	-
Accomplishments/Planned Programs Subtotals	7.594	-	-

	FY 2015	FY 2016
Congressional Add: Hybird Projectile Technology ***FY 2016 Plans:*** Congressional Add for Hybird Projectile Technology. Army seeking to move Congressional Add for $15M for Hybrid Technology into appropriate 6.2 or 6.3 PE.	-	15.000
Congressional Adds Subtotals	-	15.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) F21 / *Direct Fire Technology and NATO Ammo Eval*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
F21: *Direct Fire Technology and NATO Ammo Eval*	-	6.607	0.000	0.650	-	0.650	0.665	0.680	0.675	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

New planned program in FY 2017: Support improvements in Direct Fire Propulsion Systems.

A. Mission Description and Budget Item Justification

The F21 Direct Fire Technology and North Atlantic Treaty Organization (NATO) Ammunition Evaluation program funding is used to support small caliber ammunition, 40mm grenade munitions, medium caliber cannon ammunition and large caliber ammunition enhancements to lethality, effectiveness, survivability, accuracy and general product improvements. In addition, this program assures interchangeability of direct fire ammunition and weapons among all the NATO countries with all of the associated logistic, strategic and tactical advantages of the alliance. Project involves development and testing compliance of NATO standardization agreements (STANAGS) and staffing of the North American Regional Test Center (NARTC).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: New Ammo Design Qualification & NATO Mission Support ***Description:*** This program assures complete interchangeability of small caliber, automated cannon-caliber, 40mm grenade ammunition and weapons among NATO countries to achieve the associated logistic, strategic and tactical advantages. ***FY 2015 Accomplishments:*** FY 2015 funds supported NATO small arms ammunition interchangeability group meetings and the purchase of skyscreens for NARTC. ***FY 2017 Plans:*** FY 2017 work supports NATO small arms ammunition interchangeability group meetings, documentation and test operations.	0.200	-	0.455
Title: Support improvements in Direct Fire Propulsion Systems ***Description:*** Improve Direct Fire Propulsion Systems to increase user survivability. ***FY 2017 Plans:*** FY 2017 work will explore additional sources of supply in the National Technology and Industrial Base (NTIB) to reduce the dependence on foreign suppliers and pursue improvements to address temperature sensitivities of energetics.	-	-	0.195
Title: Propellant Optimization	0.780	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** F21 / *Direct Fire Technology and NATO Ammo Eval*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Description: Develop optimized spherical propellant for reduced muzzle signature, fouling and chamber pressure. Cartridges containing alternate flash suppressants and deterrents will be manufactured and tested to determine optimum propellant composition. ***FY 2015 Accomplishments:*** FY 2015 funds used to optimize and evaluate improvements to flash suppression fouling and barrel wear technology for small caliber propellants.			
Title: Lightweight Ammunition ***Description:*** Investigate alternate cartridge case materials for cost and weight savings over conventional brass cartridge cases. ***FY 2015 Accomplishments:*** FY 2015 funds used to perform government testing and continued improvement of candidate designs.	1.200	-	-
Title: M433 Warhead Improvement ***Description:*** 40mm: Improve lethality (fragmentation) of the M433 grenade. ***FY 2015 Accomplishments:*** FY 2015 funds used to complete component and integration subsystem and system testing. Three hundred cartridges will be built and tested to complete qualifications of the cartridge.	2.347	-	-
Title: Target Practice Spotter Technology Insertion ***Description:*** Training Cartridge with impact initiated spotting charge. Goal is visible signature upon impact under all conditions. ***FY 2015 Accomplishments:*** The FY 2015 funds used to define and develope a pyrotechnic which met the User's reliability requirements. The FY 2015 effort also focused on a perchlorate free green pyrotechnic.	0.850	-	-
Title: Improved M789 Lethality, Warhead fragmentation improvement ***Description:*** Improve M789 warhead fragmentation for lethality by utilizing fragmentation sleeves, scoring or other technologies within the warhead to promote more efficient fragmentation. ***FY 2015 Accomplishments:***	0.500	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** F21 / *Direct Fire Technology and NATO Ammo Eval*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 funds used to complete developmental and demonstration testing of the M789 warhead, TDP development and fragmentation liner integration into shaped charge warhead.			
Title: DBX-1 Lead free replacement for Lead Azide ***Description:*** Integrate environmentally friendly lead free primary explosives into M789. Demonstration in this form factor will enable transition to other munitions of larger size. ***FY 2015 Accomplishments:*** FY 2015 funds used to iniate lead free testing into M789.	0.050	-	-
Title: Extruded Propellant ***Description:*** Develop and demonstrate a government owned alternate propellant for M855A1 using existing extruded propellant technology. ***FY 2015 Accomplishments:*** FY 2015 funds used for initiatives where Extruded Propellant closed out Phase I by concluding designs, propellant iterations, initial testing and culminating in a Preliminary Design Review (PDR). At the conclusion of PDR, the program moved into Phase II/III which consisted of larger scale testing, production testing, and working actions necessary for TDP finalization and ECP draft.	0.270	-	-
Title: Small Caliber Ammunition Training Range Impact Reduction Engineering Study ***Description:*** Perform an engineering study on the feasibility of reducing the surface danger zone of small caliber training ammunition while maintaining a ballistic match to the combat ammunition out to maximum effective range of the combat ammunition. The results of the study will assist in establishing the baseline requirements for future training ammunition. ***FY 2015 Accomplishments:*** FY 2015 funds used to complete testing of 7.62mm ball and trace potential candidates.	0.050	-	-
Title: 40mm Pyrotechnics Cartridges ***Description:*** Improve reliability and hang time. ***FY 2015 Accomplishments:*** FY 2015 funds used to complete initial phase of multiyear effort starting with reliability and hang time improvements.	0.250	-	-
Title: Close Combat Mission Capability Kit (CCMCK) ***Description:*** CCMCK is a user installed weapons modification system, which allows the Soldier to employ weapons at a short range for force-on-force training using low velocity marking ammunition while precluding the weapon from firing standard service	0.010	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** F21 / *Direct Fire Technology and NATO Ammo Eval*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
ammunition. The system provides normal environmental/weapon employment cues and immediate target feedback through force-on-force, interactive live fire scenario tasks, and mission execution. ***FY 2015 Accomplishments:*** FY 2015 funds used for engineering studies to analyze unmet user requirements.			
Title: Metastable Intermolecular Composite (MIC) Primer Lead free primer ***Description:*** Integrate environmental friendly lead free primary explosives within the primer of the M789 and remove lead Styphnate. Work small caliber 7.62mm and .50cal testing. ***FY 2015 Accomplishments:*** FY 2015 funds supported local functional testing of 7.62mm and .50cal primer mix. Also supported additional contracting cost for 7.62mm and .50cal tooling for pilot line.	0.100	-	-
Accomplishments/Planned Programs Subtotals	6.607	-	0.650

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	Project (Number/Name) F24 / *Conventional Munitions Demil*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
F24: *Conventional Munitions Demil*	-	8.426	17.591	17.643	-	17.643	17.013	17.523	20.305	16.881	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Conventional Munitions Demilitarization technology program supports the Single Manager for Conventional Ammunition (SMCA) responsibility per Department of Defense Instruction (DoDI) 5160.68 to plan, program, budget and fund a Joint Service Research and Development (R&D) program that develops capability and capacity as well as technology and facilities to support the SMCA mission to demil and dispose of conventional ammunition stored in the SMCA Resource, Recovery and Disposition Account (B5A). The program goals include SMCA efforts to increase efficiencies and effectiveness to reduce the demil stockpile; reduce processing costs including packaging, handling and crating; and increase capacity through improved demil capabilities and processes. Project F24 includes activities: (1) to establish requirements and develop processes to focus investments, assess capabilities, analyze alternatives, and recommend and implement R&D projects; (2) to improve products and processes that support existing capabilities; (3) to develop or improve demil methods and processes related to advance the primary demilitarization core thrust areas of destruction, disassembly, removal, resource recovery and recycling, and waste stream treatment; (4) to ensure safe and environmentally acceptable demil operations; (5) to transition R&D products to United States Army depots or plants as well as commercial facilities performing demil; and (6) to mitigate risk and close-out project activities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Advanced Destruction	4.900	6.460	7.967
Description: This effort focuses on developing capabilities and capacities for the destruction of munitions. ***FY 2015 Accomplishments:*** Continued Ammonium Perchlorate (AP) Rocket Motor Destruction (ARMD) at Letterkenny Munitions Center (LEMC); installed components of the Pollution Abatement System (PAS); completed factory acceptance test for the Remote Automated Motor Sealing, Loading, & Ignition Circuit Completion System; obtained necessary permits from Pennsylvania Department of Environmental Protection upon submission of Continuous Emissions Monitoring System Test Plan; completed inert testing at vendor site for Rocket Motor Segmenting (RMS). Continued the Munitions Cryofracture Demil Facility (MCDF) upgrade and Area Denial Artillery Munition (ADAM) Projectile download capability at McAlester Army Ammunition Plant (MCAAP); obtained safety certification approval for the Ammunition Peculiar Equipment 2253 for Improved Conventional Munitions download; completed low rate initial production (LRIP) and compiled data for submission to Department of Defense Explosive Safety Board. Continued the capability assessment for the Static Detonation Chamber (SDC) at Anniston Munitions Center (ANMC) and successfully			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** F24 / *Conventional Munitions Demil*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
processed DODICS N335, N412, M692, and M703. Completed and staffed statement of work and initiated contracting for the assessment of non-thermal demil capability for whole munitions on the Castalia Demil Demonstration project. ***FY 2016 Plans:*** Conduct Phase I integration testing for LEMC ARMD project; conduct inert motor tests on RMS at Redstone Arsenal and conduct prototype demonstration of Thermal Treatment Chamber (TTC) at LEMC. Plan and execute transition to production of the ADAM projectile download line at MCAAP. Complete the capability assessment for the SDC project at ANMC. Award contract for the Castalia Demil Demonstration and initiate project work in Greece; begin testing of the Castalia Demil system. Plan and initiate the cluster bomb unit (CBU) 100 (also called MK 20 Rockeye) demil project at Crane Army Ammunition Activity (CAAA); begin designing Rockeye download equipment for installation at CAAA. Design and build engine starter cartridge stands at MCAAP. ***FY 2017 Plans:*** Will conduct the ARMD TTC LRIP and transition operations to LEMC. Execute transition of MCDF capability to MCAAP. Analyze the results of the SDC capability assessment and conduct an analysis of alternatives; plan and initiate Phase II SDC project. Analyze the results of the Castalia Demil assessment and conduct an analysis of alternatives; plan and initiate Phase II Castalia Demil project. Begin fabrication of Rockeye download equipment.			
Title: Resource Recovery and Recycling (R3) ***Description:*** This effort focuses on enhancing existing methods of munitions R3. ***FY 2015 Accomplishments:*** Planned and initiated project to segment and washout 16-inch Navy gun projectiles at CAAA. ***FY 2016 Plans:*** Award contract and begin design of segmenting and washout equipment for 16-inch Navy gun projectiles at CAAA. ***FY 2017 Plans:*** Will design, fabricate and install equipment for the 16-inch Navy Gun projectile washout line at CAAA.	1.700	2.100	0.940
Title: Advanced Removal ***Description:*** This effort develops technology to remove propellant and energetics. ***FY 2015 Accomplishments:*** Fabricated components for Red Phosphorous (RP) demil line, assembled system components and integrated the capability with Phosphoric Acid Recovery Plant at CAAA. ***FY 2016 Plans:***	0.426	0.741	1.875

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** F24 / *Conventional Munitions Demil*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Complete the integrated demonstration/validation (dem/val) of the RP demil line at CAAA. Initiate and plan a closed disposal project for 155mm Copperhead Munitions at MCAAP. ***FY 2017 Plans:*** Will proveout a closed disposal capability for 155mm Copperhead Munitions at MCAAP.			
Title: Advanced Waste Stream Treatment ***Description:*** This effort focuses on handling waste streams from munitions items. ***FY 2016 Plans:*** Plan and initiate a feed system upgrade acquisition on the Rotary Kiln Process Improvement (RKPI) project and develop procurement package. Apply process efficiency changes to the environmental permitting process for the RKPI project. Perform stockpile analysis and determine parameters for organic incineration of CS gas (or tear gas); evaluate changes to air permit modifications needed to thermally treat CS gas. ***FY 2017 Plans:*** Will install the upgraded feed system on a rotary kiln incinerator at an organic location to be determined as per RKPI planning. Plan and initiate a closed disposal project for CS gas.	-	3.206	2.850
Title: Advanced Munitions Disassembly ***Description:*** This effort focuses on developing innovative and efficient processes to disassemble munitions. ***FY 2015 Accomplishments:*** Initiated project for Family of Scatterable Munitions (FASCAM) demil. Completed detailed design review, equipment fabrication and installation for CBU-87 project at Hawthorne Ammunition Depot (HWAD); completed successful test of single layer bomb live units-97 submunition open detonation configuration. Completed hardware changes on the Demil Induction Heating Meltout System (DIHMES) at HWAD and developed a test plan. ***FY 2016 Plans:*** Continue planning and support of FASCAM demil project; develop design to integrate the preprocessing cryofracture capability of FASCAM mines with thermal processing in the rotary kiln at CAAA. Finalize installation of CBU-87 download hardware, conduct dem/val and LRIP of CBU-87 download equipment to include open detonation of submunitions at HWAD. Plan and execute transition of production demil process for Liquid Rocket-62 Bullpup motors at ANMC. Conduct dem/val of the DIHMES capability on 60mm mortar bodies loaded with Comp B at HWAD. Plan and initiate a size reduction project for Reactive Armor Tiles to facilitate thermal treatment feeds. ***FY 2017 Plans:***	1.400	5.084	4.011

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605805A / *Munitions Standardization, Effectiveness and Safety*	**Project (Number/Name)** F24 / *Conventional Munitions Demil*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will finalize design for FASCAM capability, and begin fabrication and installation at CAAA. Design, fabricate and install size reduction hardware and conduct dem/val of size reduction hardware for Reactive Armor Tiles.			
Accomplishments/Planned Programs Subtotals	8.426	17.591	17.643

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605857A / *Environmental Quality Technology Mgmt Support*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	2.512	3.186	2.130	-	2.130	4.542	2.480	2.667	2.684	-	-
031: *Environmentally Sustainable Acquisition/Logistics*	-	2.250	2.914	2.020	-	2.020	4.208	2.269	2.325	2.375	-	-
06I: *POLLUTION PREVENTION TECH SUPPORT*	-	0.262	0.272	0.110	-	0.110	0.334	0.211	0.342	0.309	-	-

A. Mission Description and Budget Item Justification

This program resources environmental quality technology (EQT) related management support functions including support of research, development, test and evaluation required for EQT technical integration efforts at demonstration/validation test sites, technical information and activities, test facilities and general test instrumentation, and EQT requirement assessments. Funds required to support the management of technology transfer associated with technology demonstrated and validated as part of Army EQT projects are included in this program element. In addition, support to the Army weapon system acquisition community to address environmental quality requirements are included under the Environmentally Sustainable Acquisition/Logistics Program.

The Environmentally Sustainable Acquisition/Logistics project includes program management for developing acquisition strategies that both achieve system key performance parameters and sustain the environment without permanent and unacceptable change in the natural environment or human health from system concept refinement through disposal. It includes systematic consideration of environmental impacts, energy use, natural resources, installation impacts, economics, and quality of life. It provides support to the system acquisition community, e.g., program and project managers, to integrate environmental quality analyses into the system acquisition process. The goal is to resolve environmental quality issues related to weapon systems that are identified during design, development, testing, operation, or support to reduce Army environmental liabilities and total ownership costs and includes efforts to eliminate the use of hazardous and ozone-depleting materials from weapon systems and facilities and to ensure the availability of Halon 1301 to support weapon system fire suppression requirements.

The Pollution Prevention Tech Support project funds the management support costs to execute the Toxic Metals Reduction and Airborne Lead Reduction environmental quality technology programs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army					Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*			R-1 Program Element (Number/Name) PE 0605857A / *Environmental Quality Technology Mgmt Support*		
B. Program Change Summary ($ in Millions)	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**
Previous President's Budget	2.611	3.186	3.402	-	3.402
Current President's Budget	2.512	3.186	2.130	-	2.130
Total Adjustments	-0.099	0.000	-1.272	-	-1.272
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.099	-			
• Adjustments to Budget Years	-	-	-1.272	-	-1.272

Change Summary Explanation

FY17 reductions attributed to realignment to other higher priority Army programs.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605857A / *Environmental Quality Technology Mgmt Support*	Project (Number/Name) 031 / *Environmentally Sustainable Acquisition/Logistics*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
031: *Environmentally Sustainable Acquisition/Logistics*	-	2.250	2.914	2.020	-	2.020	4.208	2.269	2.325	2.375	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Environmentally Sustainable Acquisition/Logistics (ESAL) project provides support to the system acquisition community to integrate environmental quality issues and concerns into the life cycle system acquisition process. To a much lesser extent, safety, occupational health and energy efficiency are also addressed. The focus of ESAL is on improving readiness, improving acquisition processes, reducing supportability burden, and minimizing total ownership cost. The Assistant Secretary of the Army for Installations, Energy and Environment has defined the functions of the ESAL project in coordination with the Army Acquisition Executive and the Assistant Secretary of the Army (Acquisition, Logistics, and Technology). This project provides direct support to the Army acquisition community to pursue environmental sustainability and comply with legal statutes, policies and regulations during the life cycle of Army materiel. ESAL helps the Army achieve compliance with its weapon systems, industrial base, field and deployed activities directed by international treaties, Federal statutes, Executive Orders, Department of Defense (DoD) and Army policies and regulations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Environmental Quality (EQ) Support	1.020	1.150	0.963
Description: Provide EQ Support to Acquisition Programs			
FY 2015 Accomplishments: Provided support to Program Executive Officers and Program Managers (PEOs/PMs) to integrate Environmental Quality (EQ) considerations into systems engineering activities. This included fulfillment of National Environmental Policy Act requirements, definition of EQ technology needs to meet operational requirements, analysis of technical data to support implementation decisions, participation in technical and cost risk assessment activities, and assessment and revision of contractual and operational requirements for successful technology integration, operation and support. Analyzed impending legal statutes impacting production, operation and support of weapon systems. Assessed weapon system readiness impacts (e.g., production levels, training, operational tempo and maintenance activities) resulting from EQ issues affecting industrial base and garrisons. Provided Army acquisition community representation in select Office of the Secretary of Defense (OSD) and Department of the Army (DA) committees addressing environmental legislation and rulemaking.			
FY 2016 Plans: Provide support to PEOs/PMs to integrate EQ considerations into systems engineering activities. This includes fulfillment of National Environmental Policy Act requirements, definition of EQ technology needs to meet operational requirements, analysis of technical data to support implementation decisions, participation in technical and cost risk assessment activities, and assessment			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605857A / *Environmental Quality Technology Mgmt Support*	**Project (Number/Name)** 031 / *Environmentally Sustainable Acquisition/Logistics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
and revision of contractual and operational requirements for successful technology integration, operation and support. Analyze impending legal statutes impacting production, operation and support of weapon systems. Assess weapon system readiness impacts (e.g. production levels, training, operational tempo and maintenance activities) resulting from EQ issues affecting industrial base and garrisons. Provide Army acquisition community representation in select OSD and DA committees addressing environmental legislation and rulemaking. ***FY 2017 Plans:*** Will provide support to PEOs/PMs to integrate EQ considerations into systems engineering activities. This will include fulfillment of National Environmental Policy Act requirements, definition of EQ technology needs to meet operational requirements, analysis of technical data to support implementation decisions, participation in technical and cost risk assessment activities, and assessment and revision of contractual and operational requirements for successful technology integration, operation and support. Will analyze impending legal statutes impacting production, operation and support of weapon systems. Will assess weapon system readiness impacts (e.g., production levels, training, operational tempo and maintenance activities) resulting from EQ issues affecting industrial base and garrisons. Will provide Army acquisition community representation in select OSD and DA committees addressing environmental legislation and rulemaking.			
Title: Environmental Quality (EQ) Technology Management ***Description:*** Provide management support for Army EQ technology efforts. ***FY 2015 Accomplishments:*** Provided system acquisition support to the Army's EQ technology program and coordination of EQ-related systems' needs for expanded Research, Development, Test, and Evaluation (RDT&E) efforts. Managed and oversaw technology integration efforts by Army Life Cycle Management Commands for weapon systems in all stages of design, procurement and operations/support. Coordinated RDT&E requirements among members of the Army EQ Technology Teams, coordinated technology evaluations and operational requirements in support of weapon system platform integration, managed and oversaw test plan development, oversaw testing activities, and analyzed test results to support weapon systems engineering decision making. ***FY 2016 Plans:*** Provide system acquisition support to the Army's EQ technology program and coordination of EQ-related systems' needs for expanded RDT&E efforts. Manage and oversee technology integration efforts by Army Life Cycle Management Commands for weapon systems in all stages of design, procurement and operations/support. Coordinate RDT&E requirements among members of the Army EQ Technology Teams, will coordinate technology evaluations and operational requirements in support of weapon system platform integration, will manage and oversee test plan development, will oversee testing activities, and will analyze test results to support weapon systems engineering decision making. ***FY 2017 Plans:***	0.835	0.865	0.659

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605857A / *Environmental Quality Technology Mgmt Support*	**Project (Number/Name)** 031 / *Environmentally Sustainable Acquisition/Logistics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Will provide system acquisition support to the Army's EQ technology program and coordination of EQ-related systems' needs for expanded RDT&E efforts. Will manage and oversee technology integration efforts by Army Life Cycle Management Commands for weapon systems in all stages of design, procurement and operations/support. Will coordinate RDT&E requirements among members of the Army EQ Technology Teams, will coordinate technology evaluations and operational requirements in support of weapon system platform integration, will manage and oversee test plan development, will oversee testing activities, and will analyze test results to support weapon systems engineering decision making.			
Title: Ozone Depleting Substance Management ***Description:*** Oversee Army efforts to manage the use/elimination of ozone depleting substances on Army weapon systems. ***FY 2015 Accomplishments:*** Oversaw Army efforts to manage the use/elimination of ozone-depleting substances on Army weapon systems. Monitored the Army's reserve of ozone-depleting substances that contained the Army's strategic supplies of Halon used for explosion and fire suppression systems and R-22 used in fielded environmental control units. Coordinated with Program Executive Officers and Program Managers (PEOs/PMs) to affect system replacement and retrofit to eliminate ozone depleting substances while minimizing greenhouse gases and obtained approval to require use of Halon in new contracts. ***FY 2016 Plans:*** Oversee Army efforts to manage the use/elimination of ozone-depleting substances on Army weapon systems. Monitor the Army's reserve of ozone-depleting substances that contains the Army's strategic supplies of Halon used for explosion and fire suppression systems and R-22 used in fielded environmental control units. Coordinate with PEOs/PMs to affect system replacement and retrofit to eliminate ozone depleting substances while minimizing greenhouse gases and to obtain approval to require use of Halon in new contracts. ***FY 2017 Plans:*** Will oversee Army efforts to manage the use/elimination of ozone-depleting substances on Army weapon systems. Will monitor the Army's reserve of ozone-depleting substances that contains the Army's strategic supplies of Halon used for explosion and fire suppression systems and R-22 used in fielded environmental control units. Will coordinate with PEOs/PMs to affect system replacement and retrofit to eliminate ozone depleting substances while minimizing greenhouse gases and to obtain approval to require use of Halon in new contracts.	0.395	0.410	0.398
Title: Headquarters Army Environmental System (HQAES) ***Description:*** Headquarters Army Environmental System (HQAES) support. ***FY 2016 Plans:***	-	0.489	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605857A / *Environmental Quality Technology Mgmt Support*	**Project (Number/Name)** 031 / *Environmentally Sustainable Acquisition/Logistics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Support Headquarters Army Environmental System (HQAES) modifications recommended by Configuration Control Management Board in order to support network security worthiness.			
Accomplishments/Planned Programs Subtotals	2.250	2.914	2.020

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0605857A / *Environmental Quality Technology Mgmt Support*	Project (Number/Name) 06I / *POLLUTION PREVENTION TECH SUPPORT*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
06I: *POLLUTION PREVENTION TECH SUPPORT*	-	0.262	0.272	0.110	-	0.110	0.334	0.211	0.342	0.309	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides RDTE Management Support for the demonstration and validation of weapon system pollution prevention technologies within the Army's Environmental Quality Technology program. The project increases operational sustainment and warfighter training capabilities by reducing soldier and worker health risks and environmental impacts that would otherwise result in restoration needs and compliance enforcement actions against installations while simultaneously increasing performance and standardization across the Army. This project provides for management of RDTE activities conducted under project 0603779A, Environmental Quality Technology Dem/Val (E21). The project expedites technology transition from the laboratory to operational use by supporting the demonstration of new materials and processes to fulfill the performance requirements outlined in Material Specifications, Depot Maintenance Work Requirements, Technical Manuals, Drawings and other technical data.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Management of Army Environmental Quality Technology Programs	0.262	0.272	0.110
Description: Manage and oversee the demonstration/validation of weapon system pollution prevention technologies within the Army's Environmental Quality Technology Program. ***FY 2015 Accomplishments:*** Managed and oversaw the demonstration/validation of two pollution prevention technology efforts: Toxic Metal Reduction in Surface Finishing of Army Weapon Systems, and Airborne Lead Reduction from Army Weapon Systems ***FY 2016 Plans:*** Manage and oversee the demonstration/validation of two pollution prevention technology efforts: Toxic Metal Reduction in Surface Finishing of Army Weapon Systems, and Airborne Lead Reduction from Army Weapon Systems. ***FY 2017 Plans:*** Will manage and oversee the demonstration/validation of two pollution prevention technology efforts: Toxic Metal Reduction in Surface Finishing of Army Weapon Systems, and Airborne Lead Reduction from Army Weapon Systems.			
Accomplishments/Planned Programs Subtotals	0.262	0.272	0.110

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605857A / *Environmental Quality Technology Mgmt Support*	**Project (Number/Name)** 06I / *POLLUTION PREVENTION TECH SUPPORT*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605898A / *Management HQ - R&D*							
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	48.951	48.955	49.885	-	49.885	49.742	45.816	39.744	33.125	-	-
M65: *Army Test and Evaluation Command*	-	48.951	48.955	49.885	-	49.885	49.742	45.816	39.744	33.125	-	-

Note

Planned Program Army Joint Test Element (JTE) move to PE 0605712, Project 001 in FY17.

A. Mission Description and Budget Item Justification

This project provides funding for the salaries and related personnel benefits for the authorized civilian personnel positions that provide for the management functions and the technical direction of the U.S. Army Test and Evaluation Command (ATEC) mission located at Aberdeen Proving Ground, Maryland. ATEC plans, conducts and integrates developmental testing, independent operational testing, independent evaluations, assessments and experiments to provide essential information to Soldiers and acquisition decision makers supporting the American Warfighter.

This project includes staff/management functions of resource management, human resources, safety, security, environmental, strategic planning and information/ technology support for command-wide databases in support of the developmental, evaluation and operational test mission with technical direction to the Army Evaluation Center (AEC), Aberdeen Proving Ground, Maryland; to the Operational Test Command (OTC), Fort Hood, Texas which consists of three forward Test Directorates (Airborne and Special Operations Test Directorate, Fort Bragg, North Carolina; Integrated Test and Evaluation Directorate, Fort Bliss, Texas; and the Fires Test Directorate, Fort Sill, Oklahoma) together with four other Test Directorates (Aviation; Maneuver; Mission Command; Maneuver Support and Sustainment) at Ft Hood, Texas; and to the seven Major Range and Test Facility Base (MRTFBs) and one non-MRTFB test range: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; West Desert Test Center (WDTC), at Dugway Proving Ground (DPG), Utah; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; White Sands Test Center (WSTC) at White Sands Missile Range (WSMR), New Mexico; Yuma Test Center (YTC) at Yuma Proving Ground (YPG), Arizona; Cold Regions Test Center (CRTC), Fort Greely, Alaska; and Tropic Regions Test Center (TRTC) at various locations, as well as for Redstone Test Center (RTC) Redstone Arsenal, Alabama. This is the operating budget for ATEC Headquarters, which provides technical direction for the annual execution of ~ 2,700 developmental tests; approximately ~70 operational events; and more than ~700 Evaluation and Safety documents supporting acquisition programs. ATEC's FY15 total authorized workforce is 8,282 with a $1.8 billion program.

The Army Joint Test Element (JTE) examines Joint Service, Combatant Command (COCOM) and DOD agencies mission gaps, tactics and doctrine resulting in the development of Tactics Techniques and Procedures (TTP), Concept of Operations (CONOPS), and assessment documents. Products are developed through operational non-materiel solutions to urgent, specific, Joint Warfighter problems. The JTE coordinates and develops nominations for Quick Reaction Tests (QRTs), Joint Feasibility Studies (JFS); serves as the Operational Test Agency (OTA) for Army-led QRTs; and coordinates resources to support Joint Feasibility Studies (JFSs) and chartered Joint Tests (JT) under the Joint Test Unit (JTU) assigned to ATEC as the joint OTA. The ATEC Commanding General serves as the Executive Steering Committee (ESG) member, while the Executive Director serves as the Technical Advisory Board (TAB) member. DoDD 5010.41 provides policies and responsibilities for the JTE. The DA G-8 is the agent for JTE for operations and DOD level Senior Advisory Council (SAC) responsibly. Mission support also includes the support to two

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0605898A *I Management HQ - R&D*

Joint Test Units (JTU) under the re-engineered Joint Test program. ATEC provides military resource support to Nellis Air Force Base, and Suffolk VA with Officer and Non-Commissioned Officer (NCO) support. Additional support to Joint Tests remains a requirement until the OSD Chartered projects are completed and transitioned to the respective Sponsoring COCOM.

This project does not finance test facility operations, test instrumentation or test equipment.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	49.583	48.955	50.090	-	50.090
Current President's Budget	48.951	48.955	49.885	-	49.885
Total Adjustments	-0.632	0.000	-0.205	-	-0.205
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.632	-			
• Adjustments to Budget Years	-	-	-0.205	-	-0.205

Change Summary Explanation

The FY17 reduction in funding is attributed to realignment of funds from Planned Program: Army Joint Test Element (JTE) (i.e., PE 0605898, Project M65) to PE 0605712, Project 001.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army											Date: February 2016	
Appropriation/Budget Activity 2040 / 6					R-1 Program Element (Number/Name) PE 0605898A / *Management HQ - R&D*				Project (Number/Name) M65 / *Army Test and Evaluation Command*			
COST ($ in Millions)	**Prior Years**	**FY 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
M65: *Army Test and Evaluation Command*	-	48.951	48.955	49.885	-	49.885	49.742	45.816	39.744	33.125	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Army Joint Test Element (JTE) will be moved to PE 0605712, Project 001 in FY17.

A. Mission Description and Budget Item Justification

This project provides funding for the salaries and related personnel benefits for the authorized civilian personnel positions that provide for the management functions and the technical direction of the U.S. Army Test and Evaluation Command (ATEC) mission located at Aberdeen Proving Ground, Maryland. ATEC plans, conducts and integrates developmental testing, independent operational testing, independent evaluations, assessments and experiments to provide essential information to Soldiers and acquisition decision makers supporting the American Warfighter.

This project includes staff/management functions of resource management, human resources, safety, security, environmental, strategic planning and information/ technology support for command-wide databases in support of the developmental, evaluation and operational test mission with technical direction to the Army Evaluation Center (AEC), Aberdeen Proving Ground, Maryland; to the Operational Test Command (OTC), Fort Hood, Texas which consists of three forward Test Directorates (Airborne and Special Operations Test Directorate, Fort Bragg, North Carolina; Integrated Test and Evaluation Directorate, Fort Bliss, Texas; and the Fires Test Directorate, Fort Sill, Oklahoma) together with four other Test Directorates (Aviation; Maneuver; Mission Command; Maneuver Support and Sustainment) at Ft Hood, Texas; and to the seven Major Range and Test Facility Base (MRTFBs) and one non-MRTFB test range: Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland; West Desert Test Center (WSTC) at Dugway Proving Ground (DPG), Utah; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; White Sands Test Center (WSTC) at White Sands Missile Range (WSMR), New Mexico; Yuma Test Center (YTC), at Yuma Proving Ground (YPG), Arizona; Cold Regions Test Center (CRTC), Fort Greely, Alaska; and Tropic Regions Test Center (TRTC) at various locations, as well as for Redstone Test Center (RTC) Redstone Arsenal, Alabama. This is the operating budget for ATEC Headquarters, which provides technical direction for the annual execution of ~ 2,700 developmental tests; approximately ~70 operational events; and more than ~700 Evaluation and Safety documents supporting acquisition programs. ATEC's FY15 total authorized workforce is 8,282 with a $1.8 billion program.

The Army Joint Test Element (JTE) examines Joint Service, Combatant Command (COCOM) and DOD agencies mission gaps, tactics and doctrine resulting in the development of Tactics Techniques and Procedures (TTP), Concept of Operations (CONOPS), and assessment documents. Products are developed through operational non-materiel solutions to urgent, specific, Joint Warfighter problems. The JTE coordinates and develops nominations for Quick Reaction Tests (QRTs), Joint Feasibility Studies (JFS); serves as the Operational Test Agency (OTA) for Army-led QRTs; and coordinates resources to support Joint Feasibility Studies (JFSs) and chartered Joint Tests (JT) under the Joint Test Unit (JTU) assigned to ATEC as the joint OTA. The ATEC Commanding General serves as the Executive Steering Committee (ESG) member, while the Executive Director serves as the Technical Advisory Board (TAB) member. DoDD 5010.41 provides policies and responsibilities for the JTE. The DA G-8 is the agent for JTE for operations and DOD level Senior Advisory Council (SAC) responsibly. Mission support also includes the support to two Joint Test Units (JTU) under the re-engineered Joint Test program. ATEC provides military resource support to Nellis Air Force Base, and Suffolk VA with Officer and

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605898A / *Management HQ - R&D*	**Project (Number/Name)** M65 / *Army Test and Evaluation Command*

Non-Commissioned Officer (NCO) support. Additional support to Joint Tests remains a requirement until the OSD Chartered projects are completed and transitioned to the respective Sponsoring COCOM.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Army Test and Evaluation Command (ATEC) ***Description:*** Civilian labor and other support required to manage and administer the Army test and evaluation mission at ATEC. ATEC plans, conducts and integrates developmental testing, independent operational testing, independent evaluations, assessments and experiments to provide essential information to Soldiers and acquisition decision makers supporting the American Warfighter. ***FY 2015 Accomplishments:*** Funded the authorized civilian salaries, associated expenses (supplies, equipment, travel, etc.) and other support required to manage and administer the Army test and evaluation mission at ATEC. ***FY 2016 Plans:*** Funds authorized civilian salaries, associated expenses (supplies, equipment, travel, etc.) and other support required to manage and administer the Army test and evaluation mission at ATEC. ***FY 2017 Plans:*** Will fund authorized civilian salaries, associated expenses (supplies, equipment, travel, etc.) and other support required to manage and administer the Army test and evaluation mission at ATEC.	48.691	48.692	49.885
Title: Army Joint Test Element (JTE) ***Description:*** This project also funds Army's Joint Test Element (JTE) which is comprised of civilian and military personnel. The JTE is required to research COCOM Integrated Priorities, Generate/Develop/Support efforts through rigorous COCOM engagements, and provide support during QRT/JT support through the transition phase at the end of each directed project. As the OTA, the JTE is responsible to maintain oversight status for the OSD for all directed test efforts. In addition, JTE provides for handbook development for the Warfighter throughout the world in hard copy and in electronic book form. ***FY 2015 Accomplishments:*** Funded the civilian labor and COCOM engagements, e-book development and exploring transition efforts to TRADOC/ARCIC. ***FY 2016 Plans:*** Funds civilian labor and COCOM engagements, e-book development and exploring transition efforts to TRADOC/ARCIC.	0.260	0.263	-
Accomplishments/Planned Programs Subtotals	48.951	48.955	49.885

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army		Date: February 2016
Appropriation/Budget Activity 2040 / 6	**R-1 Program Element (Number/Name)** PE 0605898A / *Management HQ - R&D*	**Project (Number/Name)** M65 / *Army Test and Evaluation Command*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Army	Date: February 2016
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0303260A *I DEFENSE MILITARY DECEPTION INITIATIVE*

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	2.000	-	2.000	2.000	0.000	0.000	0.000	-	-
FA9: *Security Initiatives*	-	0.000	0.000	2.000	-	2.000	2.000	0.000	0.000	0.000	-	-

A. Mission Description and Budget Item Justification

The Military Deception Initiative (DMDI) is response to the Secretariat and Global Security Initiatives to support identified Army RDT&E requirements to support capability, capacity and readiness of Army MILDEC capabilities. DMDI executes research, development, test, and evaluation (RDT&E) on MILDEC capabilities, next generation devices, and technologies to support Army's ability to meet current and emerging requirements. DMDI integrates RDT&E prototypes with Component programs for acquisition, sustainment and maintenance.

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	2.000	-	2.000
Total Adjustments	0.000	0.000	2.000	-	2.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	2.000	-	2.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Army			Date: February 2016
Appropriation/Budget Activity 2040 / 6	R-1 Program Element (Number/Name) PE 0303260A / *DEFENSE MILITARY DECEPTION INITIATIVE*	Project (Number/Name) FA9 / *Security Initiatives*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
FA9: *Security Initiatives*	-	0.000	0.000	2.000	-	2.000	2.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Military Deception Initiative (DMDI) is in response to Secretariat and Global Security Initiatives to support identified Army RDT&E requirements to support capability, capacity and readiness of Army MILDEC capabilities. DMDI executes research, development, test, and evaluation (RDT&E) on MILDEC capabilities, next generation devices, and technologies to support Army's ability to meet current and emerging requirements. DMDI integrates RDT&E prototypes with Component programs for acquisition, sustainment and maintenance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: Security Initiatives.	-	-	2.000
Description: The Military Deception Initiative (DMDI) is response to Secretariat and Global Security Initiatives to support identified Army RDT&E requirements to support capability, capacity and readiness of Army MILDEC capabilities. DMDI executes research, development, test, and evaluation (RDT&E) on MILDEC capabilities, next generation devices, and technologies to support Army's ability to meet current and emerging requirements. DMDI integrates RDT&E prototypes with Component programs for acquisition, sustainment and maintenance. ***FY 2017 Plans:*** Will research and develop high-fidelity next generation decoys and capabilities to meet identified Security Initiatives related to Secretary guidance.			
Accomplishments/Planned Programs Subtotals	-	-	2.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A