Department of Defense
Fiscal Year (FY) 2023 Budget Estimates

April 2022

Army

Justification Book Volume 2e of 2

Research, Development, Test & Evaluation, Army

RDT&E − Volume II, Budget Activity 5D

Volume 2e Table of Contents

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, $13,703,609,000.00 to remain available for obligation until September 30, 2024.

The FY 2023 Overseas Operations accounted for in the base budget are as follows:

Combat or direct combat support expenses that discontinue once combat operations end at major contingency location $12,800,000.

In-theater and in-CONUS expenses that remain after combat operations cease and have been previously funded in OCO $5,875,000.

COST STATEMENT

The following Justification Books were prepared at a cost of $474,495.00: Aircraft (ACFT), Missiles (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 5C, Budget Activity 5D, Budget Activity 6, Budget Activity 7, and Budget Activity 8.

FY 2023 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 2022.

2. Relationship of the FY 2023 Budget Submitted to Congress to the FY 2022 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.

New Start Programs:

Budget Activity	***OSDPE / Project***	***Project Title***
02	0602002A / DC4	Army Applied Innovation
02	0602002A / DC5	Team Ignite
02	0602141A / CI1	Advanced Armaments Lethality Technology
02	0602141A / CZ9	Foundational Hypersonic Weapons Research
02	0602144A / CV3	Engineer Enablers Maneuver, LOG, & Sustainment Apl
02	0602144A / DA1	SAFR Alternatives for Readiness Applied Research
02	0602145A / CU5	Platform Agnostic Armaments Applied Technology
02	0602146A / CU6	Adaptive Information Mediation and Analytics
02	0602146A / CV4	Pathfinder 3D Applied Technology
02	0602150A / CV7	High Energy Laser Direct Diode Apl Tech
02	0602150A / CV8	Vulnerability Modules for Multi-Domain Operations
02	0602150A / DA9	Radar Survivability through Dis Sensing Tech
02	0602180A / DA5	AI Enabled Talent Management Applied Research
02	0602180A / DA6	AI-Enabled Command and Coordination Apl Research
02	0602183A / CU7	Control & Autonomy for Tactical Superiority Tech
02	0602183A / CU8	Structures Tech for Enduring Efficient Resilience

02	0602183A / CU9	Systems Design Technology
02	0602184A / CV9	Technical-SAVVY Soldier Applied Research
03	0603025A / DA3	Army Advanced Innovation
03	0603040A / CN6	Predictive Maintenance Advanced Technology
03	0603040A / DA7	AI-Enabled Command and Coordination Adv Tech
03	0603041A / DA4	All Domain Convergence Engineering & Architectures
03	0603043A / CV1	Control & Autonomy for Tactical Superiority Adv
03	0603043A / CV2	Structures Platform Int Resilience & Efficiency
03	0603119A / CV5	Engineer Enablers Maneuver, LOG, & Sustainment Adv
03	0603119A / DA2	SAFR Alternatives for Readiness Advanced Tech
03	0603466A / CV6	Optimized High Energy Laser Source Adv Tech
03	0603466A / DB3	Radar Survivability through Dis Sensing Adv Tech
04	0604020A / DC8	Army Experimentation and Prototyping
05	0604641A / CF5	Robotic Combat Vehicle (BA5) NGCV-CFT
05	0604827A / S65	Platoon Power Generator
05	0604854A / 516	Paladin/FAASV
06	0605235A / CQ4	Mid-Range Capability

Program Element/Project Restructures:

Budget Activity	***Old OSDPE / Project: Title***	***New OSDPE / Project***
02	0602143A / BE6: Reactive/Resp Surfaces & Matls-Soldiers & Sys	0602184A / CW9
02	0602146A / AΘ2: Stand-In Advanced RF Effects (STARE)	0602146A / AP5
02	0602146A / AR3: Intelligent Environmental Battlefield Awareness	0602182A / CX3
02	0602146A / AR7: Sensing in Contested Environments Technology	0602182A / CX5
02	0602146A / AR9: Persistent Geophysical Sensing-Infrasound Tech	0602182A / CX4
02	0602146A / AT2: Subterranean Detection and Monitoring Technology	0602182A / CX6
02	0602146A / AV7: Atmospheric Modeling and Meterological Technology	0602182A / CW2
02	0602146A / CK1: Assurred PNT Enabling Technologies	0602182A / CZ6
02	0602148A / AI9: Future UAS Engine Technology	0602183A / CW6

02	0602148A / AJ2: Next Generation Rotorcraft Transmission Technology	0602183A / CW8
02	0602148A / AJ6: Advanced Rotors Technology	0602183A / CW3
02	0602148A / AJ8: Experimental and Computational Aeromechanics Techn	0602183A / CW5
02	0602148A / AL2: High Performance Computing for Rotorcraft App Tech	0602183A / DC2
02	0602148A / AL4: High Speed and Efficient VTOL Vehicle Technology	0602183A / CW7
02	0602148A / AL5: Air Vehicle Structures and Dynamics Technology	0602183A / CW4
02	0602148A / AL8: Holistic Situational Awareness and Dec Making Tech	0602141A / CG4
02	0602150A / AD2: High Energy Laser (HEL) Enabling and Support Techn	0602150A / DC1
02	0602150A / AD3: Maneuver Air Defense Technology	0603466A / AD4
02	0602182A / CM9: Convergent CEMA Deception	0602182A / CZ7
03	0602145A / BJ9: Autonomous Mobility Tech	0603462A / BK1
03	0602146A / AM8: Protected SATCOM Technology	0603463A / AM9
03	0602148A / AK4: Multi-Role Small Guided Missile Technology	0603465A / AK5
03	0603463A / AR4: Intelligent Env Battlefield Awareness Adv Tech	0603042A / CX7
03	0603463A / AS9: Persistent Geophysical Sensing-Infrasound Adv Tech	0603042A / CX8
03	0603463A / AR8: Sensing in Contested Environments Adv Technology	0603042A / CX9
03	0603463A / AT3: Subterranean Detection and Monitoring Adv Technology	0603042A / CZ5
03	0603465A / AJ7: Advanced Rotors Advanced Technology	0603043A / CX1
03	0603043A / AJ3: Next Generation Rotorcraft Transmission Adv Technology	0603043A / CX2
03	0603043A / AL3: HPC for Rotorcraft Applications Adv Tech	0603043A / DC3
03	0603463A / AU2: Optimization of Geospatial Data for Visualization	0603463A / AT8
03	0603463A / AV1: GEOInt/Ops Logistics Integration-Planning Adv Tech	0603463A / AU4
03	0602147A / AF1: Long Range Maneuverable Fires (LRMF) Technology	0603464A / AF2
03	0603464A / AE8: Land-Based Anti-Ship Missile (LBASM) Advanced Tech	0603464A / CZ8
03	0603465A / CH6: Adapt & Resilnt Tach Autnmy Cont&Struct Adv Tech	0603043A / CV1
03	0603465A / CH6: Adapt & Resilnt Tach Autnmy Cont&Struct Adv Tech	0603043A / CV2
03	0603465A / CH8: UAS Survivability Advance Technology	0603465A / AK3
03	0603465A / CH8: UAS Survivability Advance Technology	0603465A / CG1
03	0602148A / BZ7: Future Vertical Lift Medical Technologies	0603465A / CJ5
04	0603466A / AD1: High Energy Laser Tactical Vehicle Demo Adv Tech	0604019A / BU9
04	0305251A / FA8: Cyberspace Operations Forces and Force Support	0305251A / DD3
04	0603801A / B47: Future Vertical Lift	0603801A / CS7
04	0604117A / FI4: Maneuver - Short Range Air Defense (M-SHORAD)	0604117A / CR9
04	0605054A / FI3: Rapid Capability Development and Maturation	0604117A / CR9
04	0604117A / FI4: Maneuver - Short Range Air Defense (M-SHORAD)	0604117A / CS1

04	0604644A / MR1: Mobile Intermediate Range Missile	0604135A / MR2
04	0604644A / MR1: Mobile Intermediate Range Missile	0604135A / MR3
04	0604644A / MR1: Mobile Intermediate Range Missile	0604135A / MR4
04	0604182A / HX1: Long Range Hypersonic Weapon	0604182A / HX3
04	0604182A / HX1: Long Range Hypersonic Weapon	0604182A / HX4
04	0604182A / HX1: Long Range Hypersonic Weapon	0604182A / HX5
04	0604182A / HX1: Long Range Hypersonic Weapon	0604182A / HX6
05	0604818A / EJ5: Mounted Computing Environment (MCE)	0604805A / 593
05	0605013A / T05: Army Business System Modernization Initiatives	0605013A / BY3
05	0608041A / CD1: Defensive Cyber - Software Prototype Devel	0605041A / XU3
05	0605042A / FA1: Manpack Radio	0605236A / CQ1
05	0605042A / FA2: Rifleman Radio (RR)	0605236A / CQ1
06	0605602A / 628: Developmental Test Technology & Sustainment	0605602A / FJ3
06	0605602A / 62C: Modeling and Simulation Instrumentation	0605602A / FJ3
07	0303142A / 456: MILSATCOM System Engineering	0303142A / CO7
07	0205778A / EG2: GMLRS Alternative Warheads	0205778A / EG3

Program Terminations (including transfers to Procurement and Sustainment):

Budget Activity	***OSDPE / Project***	***Project Title***
01	0601104A / CI9	University & Industry Rsch Ctrs / Strategic University Basic Research Alliance
02	0602141A / CJ6	Lethality Technology / Advanced Energetics for Missile Technologies
02	0602143A / BB9	Soldier Lethality Technology / Human Performance Tech for Mobility & Lethality
02	0602144A / CG5	Ground Technology / Ground Vehicle Sensor Concepts and Technologies
02	0602146A / AR1	Network C3I Technology / Robust, Resilient and Intelligent C3I Technology
02	0602150A / AD5	Air and Missile Defense Technology / Next Generation Fires Radar Technology
03	0603002A / MN3	Medical Advanced Technology / Immediate Cardiopulmonary Stabilization Adv Tech
03	0603002A / MN4	Medical Advanced Technology / Advanced Life Support Advanced Technology
03	0603002A / MN5	Medical Advanced Technology / Next Generation Blood Products Advanced Technology
03	0603002A / MN9	Medical Advanced Technology / Far Forward Behavioral Health Care Advanced Tech

03	0603463A / AN2	Network C3I Advanced Technology / Narrowband SATCOM Advanced Technology
03	0603466A / AD4	Air and Missile Defense Adv Technology / Maneuver Air Defense Advanced Technology
04	0604785A / DS4	Integrated Base Defense / Integrated Base Defense
05	0604854A / HB6	Artillery Systems EMD / Mobile 155MM Howitzer

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.

Department of the Army
FY 2023 President's Budget
Exhibit R-1 FY 2023 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Apr 2022

Summary Recap of Budget Activities	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request
Basic Research	552,521	606,509	466,823
Applied Research	1,518,220	1,529,888	883,759
Advanced Technology Development	1,948,792	2,190,430	1,392,065
Advanced Component Development & Prototypes	3,589,313	3,818,276	4,098,749
System Development & Demonstration	2,979,946	3,254,230	4,031,334
Management Support	1,832,049	1,553,905	1,554,252
Operational Systems Development	1,719,691	1,466,180	1,188,403
Software and Digital Technology Pilot Programs	56,706	108,841	94,888
Total Research, Development, Test & Evaluation	**14,197,238**	**14,528,259**	**13,710,273**

Summary Recap of FYDP Programs			
General Purpose Forces	589,523	579,473	392,489
Intelligence and Communications	372,869	275,873	210,597
Research and Development	13,099,825	13,566,200	13,009,253
Central Supply and Maintenance	130,785	103,720	91,270
Administration and Associated Activities	253		
Classified Programs	3,983	2,993	6,664
Total Research, Development, Test & Evaluation	**14,197,238**	**14,528,259**	**13,710,273**

Department of the Army
FY 2023 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

Apr 2022

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

Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
1	0601102A	Defense Research Sciences	01	344,031	368,751	279,328	U
2	0601103A	University Research Initiatives	01	84,697	91,241	70,775	U
3	0601104A	University and Industry Research Centers	01	118,716	126,267	100,909	U
4	0601121A	Cyber Collaborative Research Alliance	01	5,077	5,067	5,355	U
5	0601601A	Artificial Intelligence and Machine Learning Basic Research	01		15,183	10,456	U
	Basic Research			**552,521**	**606,509**	**466,823**	
6	0602002A	Army Agile Innovation and Development-Applied Research	02			9,534	U
7	0602115A	Biomedical Technology	02	11,403	11,925		U
8	0602134A	Counter Improvised-Threat Advanced Studies	02	1,927	1,976	6,192	U
9	0602141A	Lethality Technology	02	117,484	91,626	87,717	U
10	0602142A	Army Applied Research	02	29,257	28,654	27,833	U
11	0602143A	Soldier Lethality Technology	02	201,511	205,058	103,839	U
12	0602144A	Ground Technology	02	159,358	216,550	52,848	U
13	0602145A	Next Generation Combat Vehicle Technology	02	258,341	245,525	174,090	U
14	0602146A	Network C3I Technology	02	202,256	164,804	64,115	U
15	0602147A	Long Range Precision Fires Technology	02	119,007	93,785	43,029	U
16	0602148A	Future Verticle Lift Technology	02	169,536	133,158	69,348	U
17	0602150A	Air and Missile Defense Technology	02	107,584	93,549	27,016	U
18	0602180A	Artificial Intelligence and Machine Learning Technologies	02		15,034	16,454	U
19	0602181A	All Domain Convergence Applied Research	02		25,967	27,399	U
20	0602182A	C3I Applied Research	02		12,406	27,892	U
21	0602183A	Air Platform Applied Research	02		6,597	41,588	U

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Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
22	0602184A	Soldier Applied Research	02		11,064	15,716	U
23	0602213A	C3I Applied Cyber	02	18,816	12,119	13,605	U
24	0602386A	Biotechnology for Materials - Applied Research	02		20,643	21,919	U
25	0602785A	Manpower/Personnel/Training Technology	02	20,399	18,701	19,649	U
26	0602787A	Medical Technology	02	101,341	120,747	33,976	U
	Applied Research			**1,518,220**	**1,529,888**	**883,759**	
27	0603002A	Medical Advanced Technology	03	95,146	137,804	5,207	U
28	0603007A	Manpower, Personnel and Training Advanced Technology	03	11,344	14,273	15,598	U
29	0603025A	Army Agile Innovation and Demonstration	03		22,231	20,900	U
30	0603040A	Artificial Intelligence and Machine Learning Advanced Technologies	03		909	6,395	U
31	0603041A	All Domain Convergence Advanced Technology	03		17,743	45,463	U
32	0603042A	C3I Advanced Technology	03		3,151	12,716	U
33	0603043A	Air Platform Advanced Technology	03		754	17,946	U
34	0603044A	Soldier Advanced Technology	03		890	479	U
35	0603115A	Medical Development	03	26,711	26,508		U
36	0603116A	Lethality Advanced Technology	03		8,066	9,796	U
37	0603117A	Army Advanced Technology Development	03	64,163	76,815	134,874	U
38	0603118A	Soldier Lethality Advanced Technology	03	154,161	152,369	100,935	U
39	0603119A	Ground Advanced Technology	03	196,055	280,490	32,546	U
40	0603134A	Counter Improvised-Threat Simulation	03	24,087	24,747	21,486	U
41	0603386A	Biotechnology for Materials - Advanced Research	03		53,736	56,853	U
42	0603457A	C3I Cyber Advanced Development	03	43,357	61,426	41,354	U

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Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
43	0603461A	High Performance Computing Modernization Program	03	221,161	229,123	251,964	U
44	0603462A	Next Generation Combat Vehicle Advanced Technology	03	309,860	299,712	193,242	U
45	0603463A	Network C3I Advanced Technology	03	215,337	211,068	125,565	U
46	0603464A	Long Range Precision Fires Advanced Technology	03	177,142	141,909	100,830	U
47	0603465A	Future Vertical Lift Advanced Technology	03	220,334	261,880	177,836	U
48	0603466A	Air and Missile Defense Advanced Technology	03	173,244	145,826	11,147	U
49	0603920A	Humanitarian Demining	03	16,690	19,000	8,933	U
		Advanced Technology Development		**1,948,792**	**2,190,430**	**1,392,065**	
50	0603305A	Army Missle Defense Systems Integration	04	139,518	56,702	12,001	U
51	0603308A	Army Space Systems Integration	04	25,584	25,755	17,945	U
52	0603327A	Air and Missile Defense Systems Engineering	04	47,098	15,000		U
53	0603619A	Landmine Warfare and Barrier - Adv Dev	04	56,067	46,637	64,001	U
54	0603639A	Tank and Medium Caliber Ammunition	04	106,881	73,844	64,669	U
55	0603645A	Armored System Modernization - Adv Dev	04	130,485	164,328	49,944	U
56	0603747A	Soldier Support and Survivability	04	5,312	2,897	4,060	U
57	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	182,400	113,365	72,314	U
58	0603774A	Night Vision Systems Advanced Development	04	15,179	62,820	18,048	U
59	0603779A	Environmental Quality Technology - Dem/Val	04	20,906	22,921	31,249	U
60	0603790A	NATO Research and Development	04	4,589	3,777	3,805	U
61	0603801A	Aviation - Adv Dev	04	694,296	1,178,460	1,162,344	U
62	0603804A	Logistics and Engineer Equipment - Adv Dev	04	15,287	11,055	9,638	U
63	0603807A	Medical Systems - Adv Dev	04	36,006	37,053	598	U

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64	0603827A	Soldier Systems - Advanced Development	04	23,905	25,925	25,971	U
65	0604017A	Robotics Development	04	92,401	80,525	26,594	U
66	0604019A	Expanded Mission Area Missile (EMAM)	04		27,872	220,820	U
67	0604020A	Cross Functional Team (CFT) Advanced Development & Prototyping	04			106,000	U
68	0604021A	Electronic Warfare Technology Maturation (MIP)	04	15,034			U
69	0604035A	Low Earth Orbit (LEO) Satellite Capability	04	21,850	19,638	35,509	U
70	0604036A	Multi-Domain Sensing System (MDSS) Adv Dev	04		50,548	49,932	U
71	0604037A	Tactical Intel Targeting Access Node (TITAN) Adv Dev	04		28,347	863	U
72	0604100A	Analysis Of Alternatives	04	9,714	10,091	10,659	U
73	0604101A	Small Unmanned Aerial Vehicle (SUAV) (6.4)	04	1,328	926	1,425	U
74	0604113A	Future Tactical Unmanned Aircraft System (FTUAS)	04	59,183	76,349	95,719	U
75	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04	308,805	297,629	382,147	U
76	0604115A	Technology Maturation Initiatives	04	141,109	132,561	269,756	U
77	0604117A	Maneuver - Short Range Air Defense (M-SHORAD)	04	5,776	39,376	225,147	U
78	0604119A	Army Advanced Component Development & Prototyping	04	167,990	189,483	198,111	U
79	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	115,688	83,952	43,797	U
80	0604121A	Synthetic Training Environment Refinement & Prototyping	04	112,093	206,335	166,452	U
81	0604134A	Counter Improvised-Threat Demonstration, Prototype Development, and Testing	04	13,326	13,379	15,840	U
82	0604135A	Strategic Mid-Range Fires	04			404,291	U
83	0604182A	Hypersonics	04	841,666	315,131	173,168	U
84	0604403A	Future Interceptor	04		6,895	8,179	U
85	0604531A	Counter - Small Unmanned Aircraft Systems Advanced Development	04		19,148	35,110	U

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Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
86	0604541A	Unified Network Transport	04	39,192	35,172	36,966	U
87	0604644A	Mobile Medium Range Missile	04	88,100	286,445		U
88	0604785A	Integrated Base Defense (Budget Activity 4)	04	2,020	2,040		U
89	0305251A	Cyberspace Operations Forces and Force Support	04	50,525	55,895	55,677	U
		Advanced Component Development & Prototypes		**3,589,313**	**3,818,276**	**4,098,749**	
90	0604201A	Aircraft Avionics	05	7,011	6,654	3,335	U
91	0604270A	Electronic Warfare Development	05	56,624	30,840	4,243	U
92	0604601A	Infantry Support Weapons	05	89,497	79,339	66,529	U
93	0604604A	Medium Tactical Vehicles	05	8,213	9,524	22,163	U
94	0604611A	JAVELIN	05	5,983	7,094	7,870	U
95	0604622A	Family of Heavy Tactical Vehicles	05	22,254	28,445	50,924	U
96	0604633A	Air Traffic Control	05	3,383	4,405	2,623	U
97	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05			115,986	U
98	0604642A	Light Tactical Wheeled Vehicles	05	4,371	2,055		U
99	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05	123,992	122,778	71,287	U
100	0604710A	Night Vision Systems - Eng Dev	05	52,959	43,417	62,679	U
101	0604713A	Combat Feeding, Clothing, and Equipment	05	2,734	1,658	1,566	U
102	0604715A	Non-System Training Devices - Eng Dev	05	27,013	26,514	18,600	U
103	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	62,058	59,518	39,541	U
104	0604742A	Constructive Simulation Systems Development	05	9,779	22,240	29,570	U
105	0604746A	Automatic Test Equipment Development	05	5,375	8,807	5,178	U
106	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	7,605	12,453	8,189	U

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Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
107	0604768A	Brilliant Anti-Armor Submunition (BAT)	05	20,175			U
108	0604780A	Combined Arms Tactical Trainer (CATT) Core	05	3,438			U
109	0604798A	Brigade Analysis, Integration and Evaluation	05	18,737	21,423	21,228	U
110	0604802A	Weapons and Munitions - Eng Dev	05	277,344	297,086	263,778	U
111	0604804A	Logistics and Engineer Equipment - Eng Dev	05	53,676	54,642	41,669	U
112	0604805A	Command, Control, Communications Systems - Eng Dev	05	10,674	20,107	40,038	U
113	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	48,285	44,400	5,513	U
114	0604808A	Landmine Warfare/Barrier - Eng Dev	05	9,239	29,137	12,150	U
115	0604818A	Army Tactical Command & Control Hardware & Software	05	126,676	155,017	111,690	U
116	0604820A	Radar Development	05	105,271	122,607	71,259	U
117	0604822A	General Fund Enterprise Business System (GFEBS)	05	15,428	15,979	10,402	U
118	0604823A	Firefinder	05	18,278			U
119	0604827A	Soldier Systems - Warrior Dem/Val	05	6,546	6,454	11,425	U
120	0604852A	Suite of Survivability Enhancement Systems - EMD	05	62,012	96,132	109,702	U
121	0604854A	Artillery Systems - EMD	05	36,187	25,000	23,106	U
122	0605013A	Information Technology Development	05	123,659	129,380	124,475	U
123	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	111,078	67,701	67,564	U
124	0605028A	Armored Multi-Purpose Vehicle (AMPV)	05	76,140	35,560		U
125	0605030A	Joint Tactical Network Center (JTNC)	05	15,671	16,350	17,950	U
126	0605031A	Joint Tactical Network (JTN)	05	30,540	28,905	30,169	U
127	0605033A	Ground-Based Operational Surveillance System - Expeditionary (GBOSS-E)	05	5,758			U
128	0605035A	Common Infrared Countermeasures (CIRCM)	05	29,770	16,630	11,523	U

Department of the Army
FY 2023 President's Budget
Exhibit R-1 FY 2023 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Apr 2022

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

Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
129	0605038A	Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite	05	4,669	7,618		U
130	0605041A	Defensive CYBER Tool Development	05	28,544	18,811	33,029	U
131	0605042A	Tactical Network Radio Systems (Low-Tier)	05	20,511	28,741	4,497	U
132	0605047A	Contract Writing System	05	22,025	20,960	23,487	U
133	0605051A	Aircraft Survivability Development	05	99,403	61,768	19,123	U
134	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05	152,399	182,257	131,093	U
135	0605053A	Ground Robotics	05	12,010	16,360	26,809	U
136	0605054A	Emerging Technology Initiatives	05	294,366	226,802	185,311	U
137	0605143A	Biometrics Enabling Capability (BEC)	05		4,326	11,091	U
138	0605144A	Next Generation Load Device - Medium	05		15,397	22,439	U
139	0605145A	Medical Products and Support Systems Development	05	919	962		U
140	0605148A	Tactical Intel Targeting Access Node (TITAN) EMD	05		54,972	58,087	U
141	0605203A	Army System Development & Demonstration	05	177,501	122,175	119,516	U
142	0605205A	Small Unmanned Aerial Vehicle (SUAV) (6.5)	05	5,780	2,275	6,530	U
143	0605224A	Multi-Domain Intelligence	05		9,313	19,911	U
144	0605225A	SIO Capability Development	05		22,713		U
145	0605231A	Precision Strike Missile (PrSM)	05		188,452	259,506	U
146	0605232A	Hypersonics EMD	05		111,473	633,499	U
147	0605233A	Accessions Information Environment (AIE)	05		16,790	13,647	U
148	0605235A	Strategic Mid-Range Capability	05			5,016	U
149	0605236A	Integrated Tactical Communications	05			12,447	U
150	0605450A	Joint Air-to-Ground Missile (JAGM)	05	7,566	2,134	2,366	U

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Exhibit R-1 FY 2023 President's Budget
Total Obligational Authority
(Dollars in Thousands)

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

Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
151	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	213,956	159,873	265,288	U
152	0605531A	Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration	05		33,386	14,892	U
153	0605625A	Manned Ground Vehicle	05	162,390	202,320	589,762	U
154	0605766A	National Capabilities Integration (MIP)	05	7,670	13,454	17,030	U
155	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	1,500	2,564	9,376	U
156	0605830A	Aviation Ground Support Equipment	05	1,413	1,201	2,959	U
157	0303032A	TROJAN - RH12	05	3,451	3,362	3,761	U
158	0303667A	Citizen Broadband Radio System	05	900			U
159	0303767A	AMBIT - Pre-Auctioned SRF	05	9,785			U
160	0304270A	Electronic Warfare Development	05	59,755	75,520	56,938	U
	System Development & Demonstration			**2,979,946**	**3,254,230**	**4,031,334**	
161	0604256A	Threat Simulator Development	06	41,487	61,422	18,437	U
162	0604258A	Target Systems Development	06	35,279	42,404	19,132	U
163	0604759A	Major T&E Investment	06	119,231	93,617	107,706	U
164	0605103A	Rand Arroyo Center	06	12,989	32,296	35,542	U
165	0605301A	Army Kwajalein Atoll	06	221,949	240,877	309,005	U
166	0605326A	Concepts Experimentation Program	06	46,847	79,585	87,122	U
167	0605502A	Small Business Innovative Research	06	369,715			U
168	0605601A	Army Test Ranges and Facilities	06	390,366	367,125	401,643	U
169	0605602A	Army Technical Test Instrumentation and Targets	06	81,829	59,253	37,962	U
170	0605604A	Survivability/Lethality Analysis	06	36,001	36,370	36,500	U
171	0605606A	Aircraft Certification	06	2,736	2,489	2,777	U

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Total Obligational Authority
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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
172	0605702A	Meteorological Support to RDT&E Activities	06	6,360	6,521	6,958	U
173	0605706A	Materiel Systems Analysis	06	21,830	21,558	22,037	U
174	0605709A	Exploitation of Foreign Items	06	8,936	13,631	6,186	U
175	0605712A	Support of Operational Testing	06	54,116	55,122	70,718	U
176	0605716A	Army Evaluation Center	06	56,827	65,854	67,058	U
177	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	2,478	2,633	6,097	U
178	0605801A	Programwide Activities	06	89,023	96,558	89,793	U
179	0605803A	Technical Information Activities	06	25,817	31,987	28,752	U
180	0605805A	Munitions Standardization, Effectiveness and Safety	06	50,648	63,042	48,316	U
181	0605857A	Environmental Quality Technology Mgmt Support	06	1,715	1,789	1,912	U
182	0605898A	Army Direct Report Headquarters - R&D - MHA	06	50,859	48,981	53,271	U
183	0606002A	Ronald Reagan Ballistic Missile Defense Test Site	06	74,089	80,921	90,088	U
184	0606003A	CounterIntel and Human Intel Modernization	06	5,200	5,363	1,424	U
185	0606105A	Medical Program-Wide Activities	06	18,973	39,041		U
186	0606942A	Assessments and Evaluations Cyber Vulnerabilities	06	6,496	5,466	5,816	U
187	0909999A	Financing for Cancelled Account Adjustments	06	253			U
		Management Support		**1,832,049**	**1,553,905**	**1,554,252**	
188	0603778A	MLRS Product Improvement Program	07	9,785	12,314	18,463	U
189	0605024A	Anti-Tamper Technology Support	07	8,436	8,868	9,284	U
190	0607131A	Weapons and Munitions Product Improvement Programs	07	24,666	35,828	11,674	U
191	0607134A	Long Range Precision Fires (LRPF)	07	100,146			U
192	0607136A	Blackhawk Product Improvement Program	07	8,300	14,773		U

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FY 2023 President's Budget
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Appropriation: 2040A Research, Development, Test & Eval, Army

Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
193	0607137A	Chinook Product Improvement Program	07	49,409	67,872	52,513	U
194	0607139A	Improved Turbine Engine Program	07	232,159	260,024	228,036	U
195	0607142A	Aviation Rocket System Product Improvement and Development	07	11,321	12,417	11,312	U
196	0607143A	Unmanned Aircraft System Universal Products	07	19,460	4,594	512	U
197	0607145A	Apache Future Development	07	52,502	10,067	10,074	U
198	0607148A	AN/TPQ-53 Counterfire Target Acquisition Radar System	07		47,752	62,559	U
199	0607150A	Intel Cyber Development	07	14,652	3,611	13,343	U
200	0607312A	Army Operational Systems Development	07	35,851	28,029	26,131	U
201	0607313A	Electronic Warfare Development	07		5,673	6,432	U
202	0607665A	Family of Biometrics	07	1,276	1,144	1,114	U
203	0607865A	Patriot Product Improvement	07	178,984	125,932	152,312	U
204	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	43,060	25,489	19,329	U
205	0203735A	Combat Vehicle Improvement Programs	07	213,726	280,107	192,310	U
206	0203743A	155mm Self-Propelled Howitzer Improvements	07	217,959	175,076	136,680	U
207	0203744A	Aircraft Modifications/Product Improvement Programs	07	11,261	10,000		U
208	0203752A	Aircraft Engine Component Improvement Program	07	80	132	148	U
209	0203758A	Digitization	07	4,351	3,903	2,100	U
210	0203801A	Missile/Air Defense Product Improvement Program	07	1,241	127	3,109	U
211	0203802A	Other Missile Product Improvement Programs	07	15,268	10,265	9,027	U
212	0205412A	Environmental Quality Technology - Operational System Dev	07	250	262	793	U
213	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	72,817	60,733	20,180	U
214	0208053A	Joint Tactical Ground System	07	9,510	13,379	8,813	U

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FY 2023 President's Budget
Exhibit R-1 FY 2023 President's Budget
Total Obligational Authority
(Dollars in Thousands)

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

Line No	Program Element Number	Item	Act	FY 2021 (Base + OCO)	FY 2022 Enactment	FY 2023 Request	Sec
216	0303028A	Security and Intelligence Activities	07	23,367	24,531		U
217	0303140A	Information Systems Security Program	07	28,270	15,680	17,209	U
218	0303141A	Global Combat Support System	07	70,652	45,297	27,100	U
219	0303142A	SATCOM Ground Environment (SPACE)	07	18,002	15,222	18,321	U
222	0305179A	Integrated Broadcast Service (IBS)	07	382	5,430	9,926	U
223	0305204A	Tactical Unmanned Aerial Vehicles	07	38,151	8,410	4,500	U
224	0305206A	Airborne Reconnaissance Systems	07	28,858	24,460	17,165	U
225	0305208A	Distributed Common Ground/Surface Systems	07	40,771			U
226	0307665A	Biometrics Enabled Intelligence	07		2,066		U
227	0708045A	End Item Industrial Preparedness Activities	07	130,785	103,720	91,270	U
9999	9999999999	Classified Programs		3,983	2,993	6,664	U
		Operational Systems Development		**1,719,691**	**1,466,180**	**1,188,403**	
228	0608041A	Defensive CYBER - Software Prototype Development	08	56,706	108,841	94,888	U
		Software and Digital Technology Pilot Programs		**56,706**	**108,841**	**94,888**	
Total Research, Development, Test & Eval, Army				**14,197,238**	**14,528,259**	**13,710,273**	

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 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	20.511	28.741	4.497	-	4.497	4.409	4.493	3.561	3.664	0.000	69.876
FA1: *Manpack Radio*	-	9.754	17.690	3.053	-	3.053	2.918	2.979	2.013	1.997	0.000	40.404
FA2: *Rifleman Radio (RR)*	-	10.757	11.051	1.444	-	1.444	1.491	1.514	1.548	1.667	0.000	29.472

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization Priority. This effort supports the Army Network Modernization Strategy Line of Effort 1, Unified Network.

Tactical Network Radio Systems (Low-Tier) provide both Classified and Unclassified communications. The radios provide the Single Channel Ground and Airborne Radio System (SINCGARS) waveform for Classified and Unclassified communications. They also provide advanced networking waveforms (e.g. TrellisWare TSM) that provide Secure but Unclassified (SBU) communications. The Manpack (MP) radio provides the Mobile User Objective System (MUOS) waveform for Tactical Satellite communications.

The Handheld, Manpack, and Small Form Fit (HMS) radio program is a single Acquisition Category 1C program encompassing handheld radios and manpack radios. Handheld radio variants include the legacy single-channel Rifleman Radio (RR), single-channel Single Channel Data Radio (SCDR), and two-channel Leader Radio (LR). The manpack variants include the legacy Generation 1 Manpack, and the current Generation 2 Manpack. HMS provides voice and data communication to the expeditionary Warfighter with an on-the-move, at-the-halt, and stationary Line of Sight (LOS)/Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. HMS radio systems are software reprogrammable, networkable, multi-mode systems capable of simultaneous voice and data communication. HMS radios supports a variety of other platforms, including tactical End User Devices (EUD) voice and data needs. HMS provides tailorable and scalable, software-defined radio systems meeting U.S. Army, Air Force, Navy, Marine Corps and Special Operations Command communications needs.

FY2019 - FY2022 RDT&E funds supported Integrated Tactical Network (ITN) testing and evaluation, of which HMS is a key component, in addition to HMS Program of Record (PoR) test events. The HMS radio systems serve as the backbone of the ITN architecture, supporting a converged Mission Command network. The ITN tests supported mature system development, integration, and demonstration in support of ITN evaluation to include: concept refinement, characterization, data collection, demos, integrated testing, and operational assessments. The ITN is a warfighter-enabling System of Systems comprised of key networking components including HMS PoR radio systems, advanced high capacity commercial radios, commercial phone technologies, and advanced radio-application gateway integration and interoperability technologies. These ITN technologies increase transport options and support a converged Mission Command network. The ITN introduces a new SBU security domain enhancing Mission Partner interoperability and significantly reducing key distribution and other security-related burdens for the Soldier at lower echelons. Starting in FY 2023, ITN funds have been realigned to PE 0605236A, CQ1.

HMS completed Initial Operational Test and Evaluation (IOT&E) during January 2021. Following the IOT&E test event, HMS outlined specific actions required to resolve test findings from the IOT&E event. FY2023 and beyond RDT&E funding supports testing activities including laboratory technical testing, Performance Verification Tests

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605042A *I Tactical Network Radio Systems (Low-Tier)*

(PVTs), and Operational User Assessments (OUAs). Each of these events provides both technical and operational user feedback on increased capabilities, future waveform incorporation, soldier usability, and life-cycle sustainment improvements.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	20.511	28.849	0.000	-	0.000
Current President's Budget	20.511	28.741	4.497	-	4.497
Total Adjustments	0.000	-0.108	4.497	-	4.497
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	4.497	-	4.497
• FFRDC Transfer	-	-0.108	-	-	-

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA1 / *Manpack Radio*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FA1: *Manpack Radio*	-	9.754	17.690	3.053	-	3.053	2.918	2.979	2.013	1.997	0.000	40.404
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Cross Functional Team. This effort supports the Army Network Modernization Strategy Line of Effort 1, Unified Network.

MP radios provide both Classified and Unclassified communications. MP radios provide the Single Channel Ground and Airborne Radio System (SINCGARS) waveform for Classified and Unclassified communications. MP radios also provide advanced waveforms (e.g. TrellisWare TSM) that provide SBU communications. The MP radio provides the Mobile User Objective System (MUOS) waveform for Tactical Satellite communications. The HMS program received a positive Full Rate Production (FRP) decision in 2021 and plans to host two PVTs annually to verify vendor enhancements.

The Handheld, Manpack, and Small Form Fit (HMS) radio systems serve as the backbone of the Integrated Tactical Network (ITN) architecture, supporting a converged Mission Command network. FY2019 - FY2022 RDT&E funds supported ITN testing and evaluation, of which HMS is a key component, in addition to HMS Program of Record (PoR) test events. The ITN tests supported mature system development, integration, and demonstration in support of ITN evaluation to include: concept refinement, characterization, data collection, demos, integrated testing, and operational assessments. The ITN is a warfighter-enabling System of Systems comprised of key networking components including HMS PoR radio systems, advanced high capacity commercial radios, commercial phone technologies, and advanced radio-application gateway integration and interoperability technologies. These ITN technologies increase transport options and support a converged Mission Command network. The ITN introduces a new Secure But Unclassified (SBU) security domain enhancing Mission Partner interoperability and significantly reducing key distribution and other security-related burdens for the Soldier at lower echelons. Starting in FY 2023, ITN funds have been realigned to PE 0605236A, CQ1.

HMS completed Initial Operational Test and Evaluation (IOT&E) during January 2021. Following the IOT&E test event, HMS outlined specific actions required to resolve test findings from the IOT&E event. FY2023 and beyond RDT&E funding supports testing activities including laboratory technical testing, Performance Verification Tests (PVTs), and Operational User Assessments (OUAs). Each of these events provides both technical and operational user feedback on increased capabilities, future waveform incorporation, soldier usability, and life-cycle sustainment improvements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Program Management	2.262	1.158	0.118
Description: Program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning and Integrated Product Team meetings.			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: FY22 funds will provide overall management and oversight to implement HMS acquisition strategy and ITN evaluation - to include Matrix and Contractor support. ***FY 2023 Plans:*** FY 2023 funds will provide overall management and oversight to implement HMS acquisition strategy - to include Matrix and Contractor support. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds decreased from FY 2022 to FY 2023 due to ITN funds realigned out of FA1.			
Title: HMS Engineering/Technical Support ***Description:*** Overall technical analysis support to PdM HMS' Manpack and ITN products. ***FY 2022 Plans:*** FY 2022 funds will provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieve tactical radio objectives. Funds will facilitate technical test support for candidate products utilized within ITN's iterative evaluation and capability implementation strategy to include MP. ***FY 2023 Plans:*** FY 2023 funds will provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieve tactical radio objectives. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds decreased from FY 2022 to FY 2023 due to ITN funds realigned out of FA1.	3.866	3.123	1.768
Title: Test and Evaluation ***Description:*** Manpack's Test and Evaluation focuses on the key technical and operational characteristics of the system: Radio Frequency performance, security, Reliability, Availability & Maintainability, suitability and survivability requirements, in addition to operational environmental performance requirements as per the Capability Production Document. Results from OT will facilitate the delivery orders for Full Rate Production and inform any required delta testing. HMS funding supports delta testing and Performance Verification Tests (PVTs).	3.626	12.761	1.167

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
HMS also supports ITN's iterative evaluation and capability implementation strategy. HMS System of Systems product qualification testing (SoS PQT) included interoperability with the ITN evaluating and demonstrating the efficacy of the ITN Variable Height Antenna (VHA) and Tactical Radio Integration Kit (TRIK) components in expansion of HMS radio range and function. ***FY 2022 Plans:*** The FY 2022 funding will facilitate testing for HMS delta testing and candidate products utilized within ITN's iterative evaluation and capability implementation strategy to include MP. ***FY 2023 Plans:*** FY 2023 Research Development Test & Evaluation (RDT&E) funding supports HMS delta testing, Performance Verification Tests (PVTs), examination of modular and open system architectures to decrease future integration and waveform porting costs. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds decreased from FY 2022 to FY 2023 due to ITN funds realigned out of FA1.			
Title: SBIR/STTR Transfer ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	0.648	-
Accomplishments/Planned Programs Subtotals	9.754	17.690	3.053

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• FA2: *Rifleman Radio (RR)*	10.757	11.051	1.444	-	1.444	1.491	1.514	1.548	1.667	0.000	29.472
• B95004: *Handheld Manpack Small Form Fit (HMS)*	547.148	724.099	728.366	-	728.366	905.517	804.072	818.258	826.234	Continuing	Continuing

Remarks

D. Acquisition Strategy

MP Radio is currently executing a May 2014 approved acquisition strategy to procure Non-Developmental Items (NDI). Utilizing a full and open competition strategy, the MP base contract was awarded to all potential industry partners. The MP contract was awarded on 26 February 2016, and procures NDI MP radios for use in a classified environment. As laid out in the Acquisition Strategy, these candidate NDI radios will need to demonstrate through testing, compliance with program

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

requirements; assess effectiveness, suitability, and survivability; to obtain material release for Full Rate Production (FRP). The MP is currently capable of running the following waveforms: Single Channel Ground and Airborne Radio System (SINCGARS), Warrior Robust Enhanced Network (WREN) TSM, as well as legacy Satellite Communications (SATCOM) and the modernized, Navy managed Mobile User Objective System (MUOS) TACSAT waveform.

In 2023, HMS will begin the process of conducting a re-compete of the existing MP IDIQ contract in support of an FY25 award. The re-compete will include upgrades to the base contract including specific sustainment requirements, updated quantity pricing schedules, and other lessons-learned from the previous ID/IQ.

On 14 May 2019, the ITN gained approval from the Army Acquisition Executive to execute via the Middle Tier of Acquisition (MTA) Rapid Prototyping pathway. The ITN Rapid Prototyping MTA approach provides for the use of innovative technologies to rapidly develop fieldable prototypes to demonstrate new capabilities and meet emerging military needs. The ITN acquisition approach is based on integration of Commercial-Off-The-Shelf (COTS), Non-Developmental Item (NDI), and Government-Off-The-Shelf (GOTS) components. The accelerated schedule for the procurement of experimentation equipment was directed by the Army and driven by the ITN Directed Requirement (DR). Contract execution for ITN Non-POR equipment is being leveraged from existing indefinite delivery indefinite quantity (IDIQ) contracts. All contracts are competitive awards using FAR approved contracting vehicles, such as DLA, CHS, NASA SEWP, GSA (IDIQ) or direct contracts that have been established after a market survey has been completed. In FY 2023 and out, this funding transitions to PE 0605236A, CQ1.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA1 / *Manpack Radio*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Office Support	Various	PEO C3T & CECOM : Various; APG, MD	1.764	1.456		1.158		0.118		-		0.118	0.000	4.496	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.648		-		-		-	0.000	0.648	-
		Subtotal	1.764	1.456		1.806		0.118		-		0.118	0.000	5.144	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering/Technical Support	Various	PEO C3T, ARL, C5ISR, & ATC : Various	15.926	4.672		3.123		1.768		-		1.768	0.000	25.489	-
		Subtotal	15.926	4.672		3.123		1.768		-		1.768	0.000	25.489	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Follow on Delta Development & Testing	Various	EPG : Ft. Huachuca	2.447	1.651		1.556		1.167		-		1.167	0.000	6.821	-
Follow on Delta Development & Testing (2)	Various	OTC : Various	14.054	-		-		-		-		-	0.000	14.054	-
ITN Testing	Various	Various : TBD	1.709	1.975		11.205		-		-		-	0.000	14.889	-
		Subtotal	18.210	3.626		12.761		1.167		-		1.167	0.000	35.764	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.900	9.754		17.690		3.053		-		3.053	0.000	66.397	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

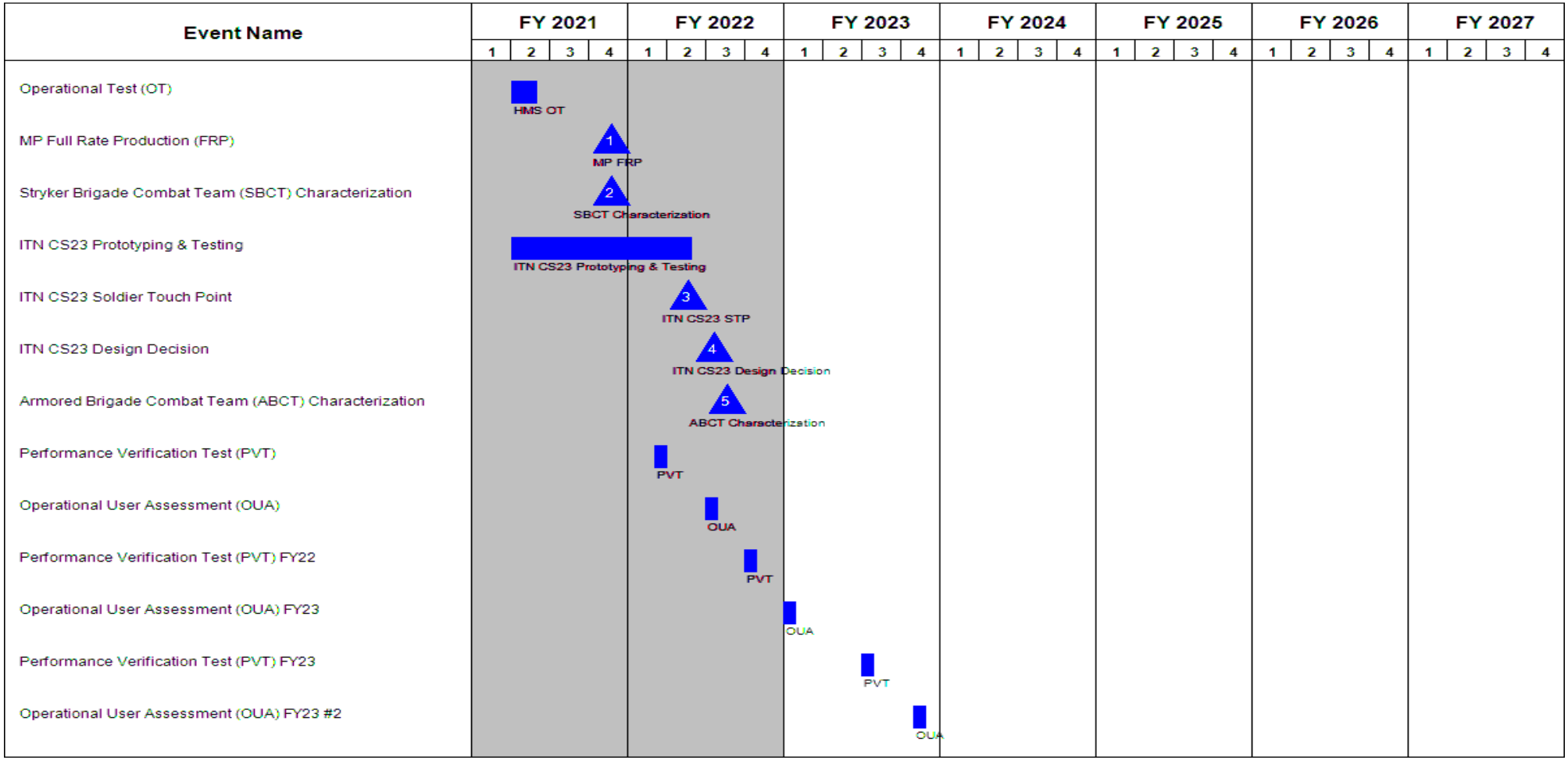


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

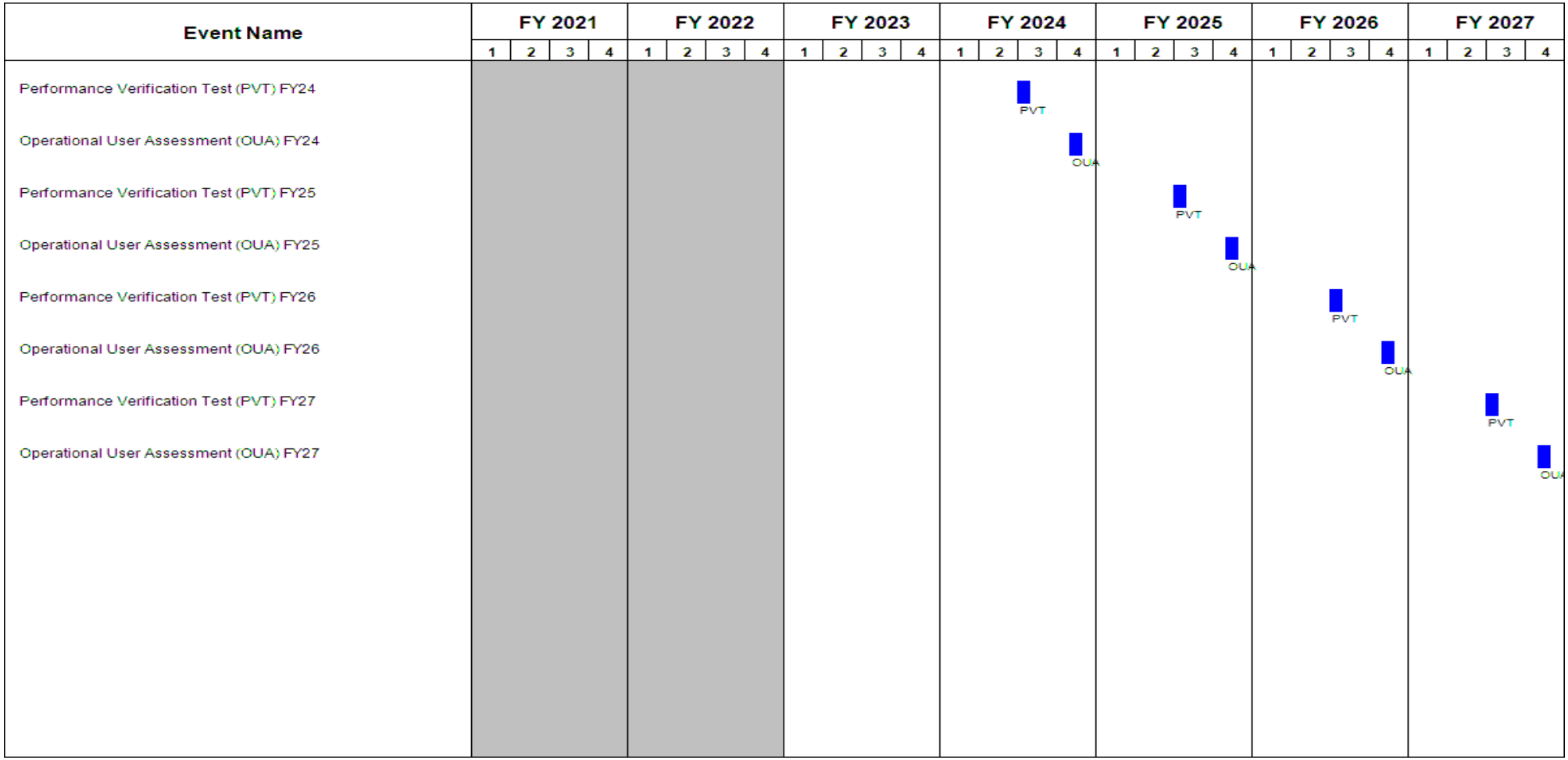


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Manpack (MP) Customer Test (CT)	2	2017	4	2017
MP Sandbox and Soldier Feedback Study	1	2018	2	2018
MP Field/Lab Base Risk Reduction Test (FBRR/LBRR)	3	2018	4	2018
NIE 18.2	1	2019	1	2019
MP Log Demo	2	2019	3	2019
MP MUOS MOT&E 2B	3	2019	3	2019
Integrated Tactical Network (ITN) CS21 LBRR	3	2019	4	2019
MP LBRR	2	2020	3	2020
ITN CS21 Design Decision	3	2020	3	2020
Operational Test (OT)	2	2021	2	2021
MP Full Rate Production (FRP)	4	2021	4	2021
Stryker Brigade Combat Team (SBCT) Characterization	4	2021	4	2021
ITN CS23 Prototyping & Testing	2	2021	2	2022
ITN CS23 Soldier Touch Point	2	2022	2	2022
ITN CS23 Design Decision	3	2022	3	2022
Armored Brigade Combat Team (ABCT) Characterization	3	2022	3	2022
Performance Verification Test (PVT)	1	2022	1	2022
Operational User Assessment (OUA)	3	2022	3	2022
Performance Verification Test (PVT) FY22	4	2022	4	2022
Operational User Assessment (OUA) FY23	1	2023	1	2023
Performance Verification Test (PVT) FY23	3	2023	3	2023
Operational User Assessment (OUA) FY23 #2	4	2023	4	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA1 / *Manpack Radio*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Performance Verification Test (PVT) FY24	3	2024	3	2024
Operational User Assessment (OUA) FY24	4	2024	4	2024
Performance Verification Test (PVT) FY25	3	2025	3	2025
Operational User Assessment (OUA) FY25	4	2025	4	2025
Performance Verification Test (PVT) FY26	3	2026	3	2026
Operational User Assessment (OUA) FY26	4	2026	4	2026
Performance Verification Test (PVT) FY27	3	2027	3	2027
Operational User Assessment (OUA) FY27	4	2027	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA2 / *Rifleman Radio (RR)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FA2: *Rifleman Radio (RR)*	-	10.757	11.051	1.444	-	1.444	1.491	1.514	1.548	1.667	0.000	29.472
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Cross Functional Team. This effort supports the Army Network Modernization Strategy Line of Effort 1, Unified Network.

Handheld radios provide both Classified and Unclassified communications. Handheld radios provide the Single Channel Ground and Airborne Radio System (SINCGARS) legacy waveform for Classified and Unclassified communications. Handheld radios also provide advanced waveforms (e.g. TrellisWare TSM) that provide SBU communications. The HMS program received a positive Full Rate Production (FRP) decision in 2021 and plans to host two PVTs annually to verify vendor enhancements.

The Handheld, Manpack, and Small Form Fit (HMS) radio systems serve as the backbone of the Integrated Tactical Network (ITN) architecture, supporting a converged Mission Command network. FY2019 - FY2022 Research Development Test & Evaluation (RDT&E) funds supported ITN testing and evaluation, of which HMS is a key component, in addition to HMS Program of Record (PoR) test events. The ITN tests supported mature system development, integration, and demonstration in support of ITN evaluation to include: concept refinement, characterization, data collection, demos, integrated testing, and operational assessments. The ITN is a warfighter-enabling System of Systems comprised of key networking components including HMS PoR radio systems, advanced high capacity commercial radios, commercial phone technologies, and advanced radio-application gateway integration and interoperability technologies. These ITN technologies increase transport options and support a converged Mission Command network. The ITN introduces a new Secure But Unclassified (SBU) security domain enhancing Mission Partner interoperability and significantly reducing key distribution and other security-related burdens for the Soldier at lower echelons. Starting in FY 2023, ITN funds have been realigned to PE 0605236A, CQ1.

HMS completed Initial Operational Test and Evaluation (IOT&E) during January 2021. Following the IOT&E test event, HMS outlined specific actions required to resolve test findings from the IOT&E event. FY2023 and beyond RDT&E funding supports testing activities including laboratory technical testing, Performance Verification Tests (PVTs), and Operational User Assessments (OUAs). Each of these events provides both technical and operational user feedback on increased capabilities, future waveform incorporation, soldier usability, and life-cycle sustainment improvements. Handheld radios provide voice/data communication to the expeditionary Warfighter with an on-the-move, at-the-halt, and stationary Line of Sight (LOS)/Beyond Line of Sight (BLOS) capability for both dismounted personnel and platforms. Handheld radio systems are software reprogrammable, networkable, multi-mode systems capable of simultaneous voice and data communication (RR/LR). Handheld radios will support a variety of other platforms, including tactical End User Devices (EUD) voice and data needs. HMS provides tailorable and scalable, software-defined radio systems meeting U.S. Army, Air Force, Navy, Marine Corps and Special Operations Command communications needs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Program Management	0.144	0.863	0.058

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Program management includes overall management of program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning and Integrated Product Team meetings. ***FY 2022 Plans:*** During this timeframe, funds will provide overall management and oversight to implement HMS acquisition strategy and ITN evaluation - to include Matrix and Contractor support. ***FY 2023 Plans:*** FY 2023 funds will provide overall management and oversight to implement HMS acquisition strategy - to include Matrix and Contractor support. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds decreased from FY 2022 to FY 2023 due to ITN funds realigned out of FA2.			
Title: HMS Engineering/Technical Support ***Description:*** Overall technical analysis support to PdM HMS' Handheld and ITN products. ***FY 2022 Plans:*** FY 2021 funds will provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieve tactical radio objectives. Funds will facilitate technical test support for candidate products utilized within ITN's iterative evaluation and capability implementation strategy to include LR. ***FY 2023 Plans:*** FY 2023 funds will provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieve tactical radio objectives. Funds will facilitate technical test support for candidate products utilized within ITN's iterative evaluation and capability implementation strategy to include LR. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds decreased from FY 2022 to FY 2023 due to ITN funds realigned out of FA2.	5.440	1.725	1.012
Title: Test and Evaluation ***Description:*** Handheld's Test and Evaluation focuses on the evaluation of key technical and operational characteristics of the system: Radio Frequency performance, security, Reliability, Availability & Maintainability, and survivability requirements, in	5.173	8.058	0.374

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
addition to operational environmental performance requirements as per the Capability Production Document. All previous testing on the Leader Radio, served as risk reduction and Operational Test (OT) preparations in support of FRP. Results from the OT will facilitate the delivery orders for Full Rate Production and inform any required delta testing. HMS funding supports delta testing and Performance Verification Tests (PVTs). HMS also supports ITN's iterative evaluation and capability implementation strategy. HMS System of Systems product qualification testing (SoS PQT) included interoperability with the ITN evaluating and demonstrating the efficacy of the ITN Variable Height Antenna (VHA) and Tactical Radio Integration Kit (TRIK) components in expansion of HMS radio range and function. ***FY 2022 Plans:*** The FY 2022 funding will facilitate testing for candidate products utilized within ITN's iterative evaluation and capability implementation strategy to include LR. ***FY 2023 Plans:*** FY 2023 Research Development Test & Evaluation (RDT&E) funding supports HMS delta testing, Performance Verification Tests (PVTs), examination of modular and open system architectures to decrease future integration and waveform porting costs. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds decreased from FY 2022 to FY 2023 due to ITN funds realigned out of FA2.			
Title: SBIR/STTR Transfer ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	0.405	-
Accomplishments/Planned Programs Subtotals	10.757	11.051	1.444

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• FA1: *Manpack Radio*	9.754	17.690	3.053	-	3.053	2.918	2.979	2.013	1.997	0.000	40.404
• B95004: *Handheld Manpack Small Form Fit (HMS)*	547.148	724.099	728.366	-	728.366	905.517	804.072	818.258	826.234	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

D. Acquisition Strategy

On 13 September 2016 the Army Acquisition Executive approved a decrease to the Basis of Issue (BOI) for the single channel RR, increase the BOI for the two channel LR and move forward with acquisition activities for the two channel LR. An acquisition strategy addendum adding LR was approved in March 2017. The addendum continued the multi-vendor approach utilizing the existing Indefinite Delivery Indefinite Quantity (IDIQ) RR base contract (awarded 29 April 2015) to on-ramp LR capabilities (18 September 2018). The LR effort is a separate competition under the Handheld radio suite. As laid out in the acquisition strategy, these candidate non-developmental radios will need to demonstrate through testing, compliance with program requirements; assess effectiveness, suitability, and survivability; to obtain material release for Full Rate Production (FRP).

The LR will simultaneously run Single Channel Ground and Airborne Radio System (SINCGARS) and other advanced networking waveforms, in one radio with both handheld and mounted configurations, for fixed and mobile sites.

In 2022, HMS began the process of conducting a re-compete of the existing LR IDIQ contract in support of an FY24 award. The re-compete will include upgrades to the base contract including specific sustainment requirements, updated quantity pricing schedules, and other lessons-learned from the previous ID/IQ.

On 14 May 2019, the ITN gained approval from the Army Acquisition Executive to execute via the Middle Tier of Acquisition (MTA) Rapid Prototyping pathway. The ITN Rapid Prototyping MTA approach provides for the use of innovative technologies to rapidly develop fieldable prototypes to demonstrate new capabilities and meet emerging military needs. The ITN acquisition approach is based on integration of Commercial-Off-The-Shelf (COTS), Non-Developmental Item (NDI), and Government-Off-The-Shelf (GOTS) components. The accelerated schedule for the procurement of experimentation equipment was directed by the Army and driven by the ITN Directed Requirement (DR). Contract execution for ITN Non-POR equipment is being leveraged from existing indefinite delivery indefinite quantity (IDIQ) contracts. All contracts are competitive awards using FAR approved contracting vehicles, such as DLA, CHS, NASA SEWP, GSA (IDIQ) or direct contracts that have been established after a market survey has been completed. In FY 2023 and out, this funding transitions to PE 0605236A, CQ1.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	Project (Number/Name) FA2 / *Rifleman Radio (RR)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Office Support	Various	PEO C3T & CECOM : Various; APG, MD	2.590	0.441		0.863		0.058		-		0.058	0.000	3.952	Continuing
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.405		-		-		-	0.000	0.405	-
		Subtotal	2.590	0.441		1.268		0.058		-		0.058	0.000	4.357	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMS Engineering/ Technical Support	Various	PEO C3T, ARL, C5ISR, & ATC : Various	2.424	5.143		1.725		1.012		-		1.012	0.000	10.304	-
		Subtotal	2.424	5.143		1.725		1.012		-		1.012	0.000	10.304	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Follow on Delta Development & Testing	Various	EPG : Fort Huachuca	4.776	0.962		1.064		0.374		-		0.374	0.000	7.176	-
Follow on Delta Development & Testing (2)	Various	OTC : Various	10.251	-		-		-		-		-	0.000	10.251	-
ITN Testing	Various	Various : TBD	13.099	4.211		6.994		-		-		-	0.000	24.304	-
		Subtotal	28.126	5.173		8.058		0.374		-		0.374	0.000	41.731	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.140	10.757		11.051		1.444		-		1.444	0.000	56.392	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

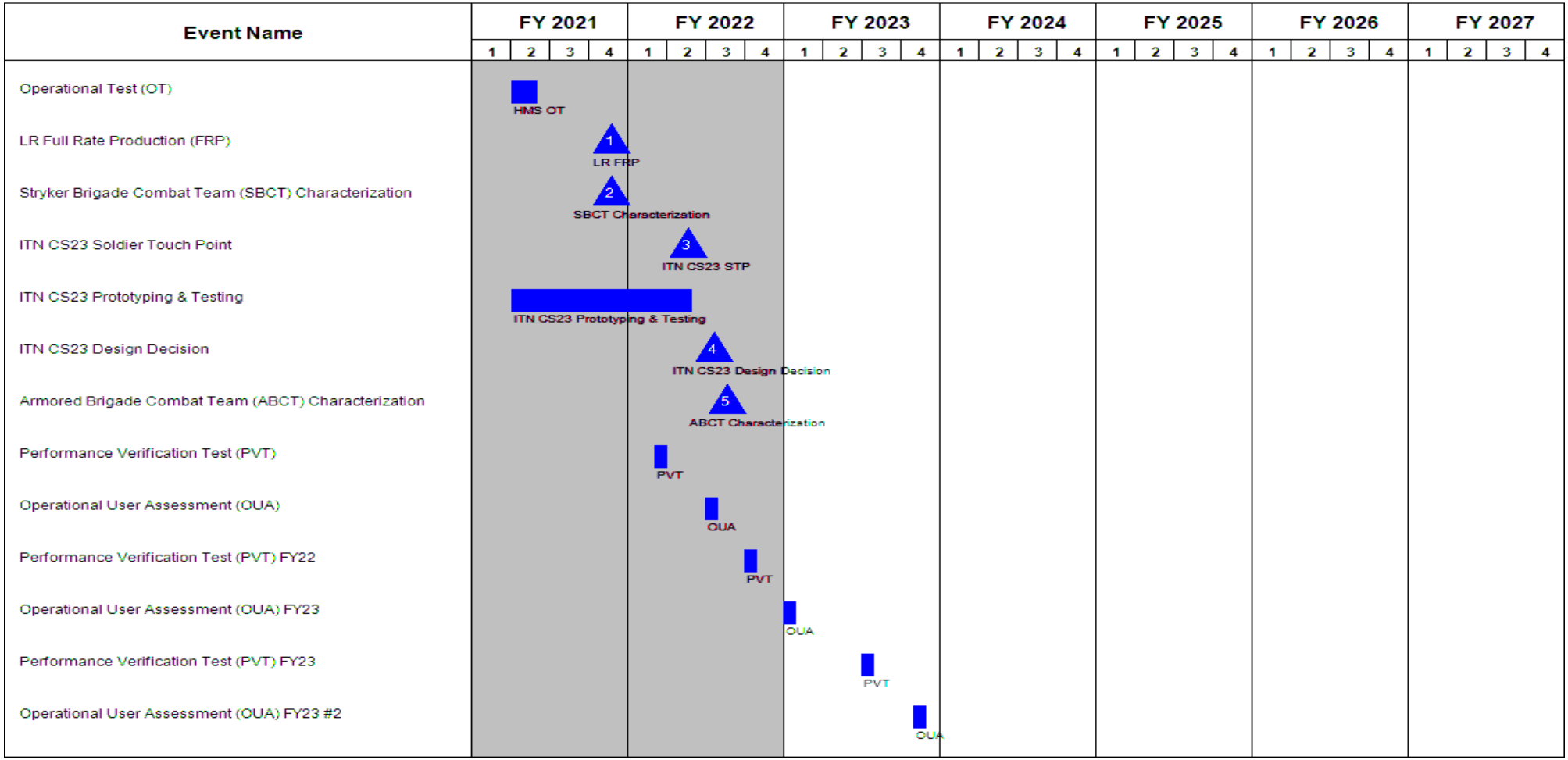


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

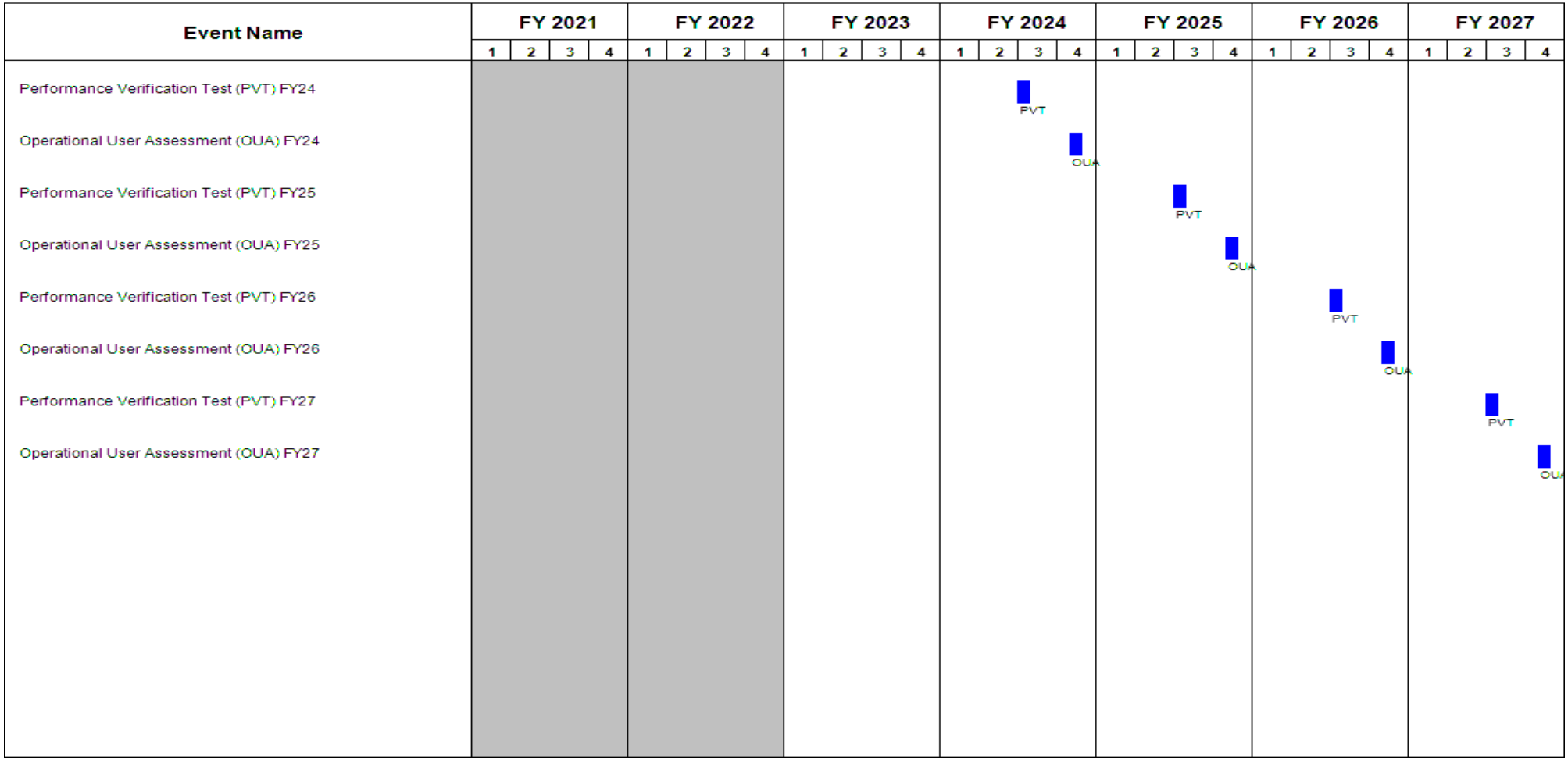


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Leader Radio (LR) Release For Proposal (RFP)	4	2017	4	2017
LR Qualification Test (QT)	1	2018	2	2018
LR Lab Based Risk Reduction	4	2018	4	2018
LR Contract Award	4	2018	4	2018
LR Early User Assessment (EUA)	3	2019	4	2019
Production Qualification Test (PQT)	4	2019	2	2020
Integrated Tactical Network (ITN) CS21 LBRR	3	2019	4	2019
LR Lab Based Risk Reduction (LBRR)	2	2019	4	2019
LR EUA	4	2019	2	2020
ITN CS21 Design Decision	3	2020	3	2020
Operational Test (OT)	2	2021	2	2021
LR Full Rate Production (FRP)	4	2021	4	2021
Stryker Brigade Combat Team (SBCT) Characterization	4	2021	4	2021
ITN CS23 Soldier Touch Point	2	2022	2	2022
ITN CS23 Prototyping & Testing	2	2021	2	2022
ITN CS23 Design Decision	3	2022	3	2022
Armored Brigade Combat Team (ABCT) Characterization	3	2022	3	2022
Performance Verification Test (PVT)	1	2022	1	2022
Operational User Assessment (OUA)	3	2022	3	2022
Performance Verification Test (PVT) FY22	4	2022	4	2022
Operational User Assessment (OUA) FY23	1	2023	1	2023
Performance Verification Test (PVT) FY23	3	2023	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605042A / *Tactical Network Radio Systems (Low-Tier)*	**Project (Number/Name)** FA2 / *Rifleman Radio (RR)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Operational User Assessment (OUA) FY23 #2	4	2023	4	2023
Performance Verification Test (PVT) FY24	3	2024	3	2024
Operational User Assessment (OUA) FY24	4	2024	4	2024
Performance Verification Test (PVT) FY25	3	2025	3	2025
Operational User Assessment (OUA) FY25	4	2025	4	2025
Performance Verification Test (PVT) FY26	3	2026	3	2026
Operational User Assessment (OUA) FY26	4	2026	4	2026
Performance Verification Test (PVT) FY27	3	2027	3	2027
Operational User Assessment (OUA) FY27	4	2027	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605047A *I Contract Writing System*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	22.025	20.960	23.487	-	23.487	0.000	0.000	0.000	0.000	Continuing	Continuing
FA7: *Contract Writing System*	-	22.025	20.960	23.487	-	23.487	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Contract Writing System (ACWS) will be the Army's single, next-generation, enterprise-wide contract writing, management, execution, and close-out software system. ACWS will facilitate the standardization of Army Procurement business processes and streamline the integration with Army Enterprise Resource Planning (ERP) systems. As a financial feeder system, ACWS will meet the full scope of Army contracting requirements, including those in secure and non-secure locations, those supporting combat or noncombat contingencies, those within or outside the borders of the Continental United States, those supporting grants and assistance agreements, and those performing weapons systems, construction, installation, other specialized contracting activities, and the Federal Financial Management Improvement Act of 1996.

Initial Operating Capability (IOC) was planned for January 2022. However, following the testing results in December of 2021, the Army changed strategy to focus on alternative solutions. The new approach will leverage existing contract writing solutions from other services and technologies. The Army will pivot to an iterative design, development, testing and cyber security strategy for an integrated system that will support functionality required to begin decommissioning of SPS and PADDS, on-boarding Joint Base and National Guard Bureau users, and integrating existing business intelligence capabilities.

FY2022 RDTE Funding supports a risk reduction effort to to refine the Army roadmap and strategic plan to deliver requirements, conduct business process re-engineering, establish environments, begin initial development through an Inter Agency Agreement (IAA) with the United States Department of Agriculture (USDA) to deliver a minimal viable product leveraging existing contract writing technologies.

FY2023 RDTE funding supports obtaining an Authority to Operate (ATO), release of a Minimum Viable Product (MVP) and includes building grants and agreements capabilities, construction contracting, financial system integration and standards, and activities focused on the decommission of the Standard Procurement System (SPS) and Procurement Automated Document and Data System (PADDS).

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605047A / *Contract Writing System*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	22.025	22.960	0.000	-	0.000
Current President's Budget	22.025	20.960	23.487	-	23.487
Total Adjustments	0.000	-2.000	23.487	-	23.487
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	23.487	-	23.487

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605047A / *Contract Writing System*	Project (Number/Name) FA7 / *Contract Writing System*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FA7: *Contract Writing System*	-	22.025	20.960	23.487	-	23.487	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Army Contract Writing System (ACWS) will be the Army's single, next-generation, enterprise-wide contract writing, management, execution, and close-out software system. ACWS will facilitate the standardization of Army Procurement business processes and streamline the integration with Army Enterprise Resource Planning (ERP) systems. As a financial feeder system, ACWS will meet the full scope of Army contracting requirements, including those in secure and non-secure locations, those supporting combat or noncombat contingencies, those within or outside the borders of the Continental United States, those supporting grants and assistance agreements, and those performing weapons systems, construction, installation, other specialized contracting activities, and the Federal Financial Management Improvement Act of 1996.

Initial Operating Capability (IOC) was planned for January 2022. However, following the testing results in December of 2021, the Army changed strategy to focus on alternative solutions. The new approach will leverage existing contract writing solutions from other services and technologies. The Army will pivot to an iterative design, development, testing and cyber security strategy for an integrated system that will support functionality required to begin decommissioning of SPS and PADDS, on-boarding Joint Base and National Guard Bureau users, and integrating existing business intelligence capabilities.

FY2022 RDTE Funding supports a risk reduction effort to to refine the Army roadmap and strategic plan to deliver requirements, conduct business process re-engineering, establish environments, begin initial development through an Inter Agency Agreement (IAA) with the United States Department of Agriculture (USDA) to deliver a minimal viable product leveraging existing contract writing technologies.

FY2023 RDTE funding supports obtaining an Authority to Operate (ATO), release of a Minimum Viable Product (MVP) and includes building grants and agreements capabilities, construction contracting, financial system integration and standards, and activities focused on the decommission of the Standard Procurement System (SPS) and Procurement Automated Document and Data System (PADDS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Program Office	4.533	3.203	3.775
Description: These resources in the ACWS Program Management Office include Government, matrixed, and SETA contractor support for capability development, enterprise architecture, contract management, management analysis, capital/ financial planning, life cycle planning, risk management, schedule management, and facilities (for both Government and contractor staff).			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Program management support in the ACWS Government Program Management Office includes contractor support, CECOM, DASA(P), and other contractor support for resource planning, capability development, life cycle planning, risk management, schedule management, and facilities. ***FY 2023 Plans:*** Program management support in the ACWS Government Program Management Office includes contractor support, CECOM, DASA(P), and other contractor support for resource planning, capability development, life cycle planning, risk management, schedule management, and facilities. FY23 will continue to focus on planning and execution of the solution implementation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 funding increase supports the management, planning, and execution of the new strategy.			
Title: Product Development ***Description:*** Product development is responsible for design and development of the solution for Army contract writing. This cross-functional team of Government and contractor staff analyze and design the requirements to efficiently ensure completeness in satisfying system requirements. Efforts required by system interface partners, hosting infrastructure (using Infrastructure as a Service [IaaS]) and managed services are also included as a requirement of the solution for Army contract writing. ***FY 2022 Plans:*** FY2022 RDTE Funding supports a risk reduction effort to to refine the Army roadmap and strategic plan to deliver requirements, conducts business process reengineering, establishes environments (development, test, production), begins initial development through an Inter Agency Agreement (IAA) with the United States Department of Agriculture (USDA) to deliver a minimal viable product leveraging existing contract writing technologies. ***FY 2023 Plans:*** FY2023 RDTE funding supports obtaining an Authority to Operate (ATO), release of a Minimum Viable Product (MVP) and includes building grants and agreements capabilities, construction contracting, financial system integration and standards, and activities focused on the decommission of the Standard Procurement System (SPS) and Procurement Automated Document and Data System (PADDS). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 funding increase supports the management, planning, and execution of the new strategy.	15.821	11.120	15.029
Title: Security	0.753	2.450	1.594

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Security related costs all include Information Assurance (IA)/ Risk Management Framework (RMF) activities, and cyber security support for the Cloud Solution Provider's government approved hosting environment complementing the Interim Authorization to Test (IATT) and Authority to Operate (ATO) controls. ***FY 2022 Plans:*** System integrator costs to support cybersecurity vulnerability scanning, system hardening, Risk Management Framework costs, and audit readiness. The Secure Activities capability will require a separate Authority to Operate (ATO) and additional work to update existing documentation for Full Deployment interfaces. There will also be extensive work to meet audit requirements in FY 2022. ***FY 2023 Plans:*** FY2023 funding supports the development and completion of controls associated with Authorization to Operate (ATO) for the new strategy, cyber security regulations, and Risk Management Framework. There will also be extensive work to meet audit requirements in FY2023. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 funding decrease supports the management, planning, and execution of the new strategy.			
Title: Test & Evaluation ***Description:*** Costs associated with The test and evaluation function to validate and inspect capability requirements ensuring they are satisfactorily addressed through design analysis and development of test scripts. The Army Test and Evaluation Command (ATEC) and Joint Interoperability Test Command (JITC) will support ACWS as testers of the system. ***FY 2022 Plans:*** Operational Evaluation(OE) led by ATEC to assess functionality meets user needs following capability increments. ***FY 2023 Plans:*** FY2023 resources support the planning and test of the new solution through Army partners, including interface partners, ATEC, JITC, and other users from the field. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 funding decrease supports the management, planning, and execution of the new strategy.	0.918	3.422	3.089
Title: FY2022 SBIR/STTR Transfer ***Description:*** Funding Transferred in accordance with Title 15 U.S. Code 638 ***FY 2022 Plans:***	-	0.765	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding Transferred in accordance with Title 15 U.S. Code 638			
FY 2022 to FY 2023 Increase/Decrease Statement: FY 2022 Funding transferred in accordance with Title 15 U.S. Code 638			
Accomplishments/Planned Programs Subtotals	22.025	20.960	23.487

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• B66001: *Contract Writing System*	2.459	14.957	17.701	-	17.701	-	-	-	-	0.000	35.117
• OMA - ERPB / 423612000 / 5T0: *ACWS Sustainment OMA*	7.338	12.826	6.602	-	6.602	6.526	6.536	6.602	-	0.000	46.430

Remarks

FY2023 OPA funds required to support training material development, dedicated training support personnel, and software user licenses.

FY 2023 OMA funding will be used for sustainment of sites that have already been deployed, license maintenance, hosting, sustainment, cyber security posture activities, and service desk activities.

D. Acquisition Strategy

Through full and open competition, ACWS awarded a Single Award ID/IQ contract with a 10-year ordering period to CGI Federal Inc. on 22 May 2017. Task Order 0002 was issued in August 2018 and extended into FY2022 to support the deployment of IOC to three (3) pilot locations. IOC was planned for January 2022, however following the outcome of Software Qualification Testing (SQT) in December 2021, Army Senior leadership directed to pivot to leverage solutions currently in place with other services.

The Army will pivot to an iterative design, development, testing and cyber security of an integrated system that will support functionality required to begin decommissioning of SPS and PADDS, on-board Joint Base and National Guard Bureau users, and business intelligence capabilities. In FY2022, the program will refine its initial acquisition plan to include cloud infrastructure stand-up, achieve Authority to Operate (ATO), requirements decomposition, train program staff, and introduce specialized skill sets to support agile development practices.

FY2023 funding supports the release of a Minimum Viable Product (MVP) and future capability for grants and agreements, financial system integration and standards, and activities associated with the development and testing of the secure contracting and disconnected contracting capabilities

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605047A / *Contract Writing System*	Project (Number/Name) FA7 / *Contract Writing System*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office	Various	PdM ACWS : Arlington, VA	26.931	4.533	Oct 2020	3.203	Oct 2021	3.775	Oct 2022	-		3.775	0.000	38.442	-
FY 2022 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.765		-		-		-	0.000	0.765	-
		Subtotal	26.931	4.533		3.968		3.775		-		3.775	0.000	39.207	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	Various	PdM ACWS : Arlington, VA	61.605	15.821	Oct 2020	11.120	Oct 2021	15.029	Oct 2022	-		15.029	0.000	103.575	-
		Subtotal	61.605	15.821		11.120		15.029		-		15.029	0.000	103.575	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Security	MIPR	PdM ACWS : Arlington, VA	4.213	0.753	Oct 2020	2.450	Oct 2021	1.594	Oct 2022	-		1.594	0.000	9.010	-
		Subtotal	4.213	0.753		2.450		1.594		-		1.594	0.000	9.010	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	ATEC & JTIC & PdM ACWS : Arlington, VA	3.413	0.918	Oct 2020	3.422	Oct 2021	3.089	Oct 2022	-		3.089	0.000	10.842	-
		Subtotal	3.413	0.918		3.422		3.089		-		3.089	0.000	10.842	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605047A / *Contract Writing System*	Project (Number/Name) FA7 / *Contract Writing System*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	96.162	22.025		20.960		23.487		-		23.487	0.000	162.634	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

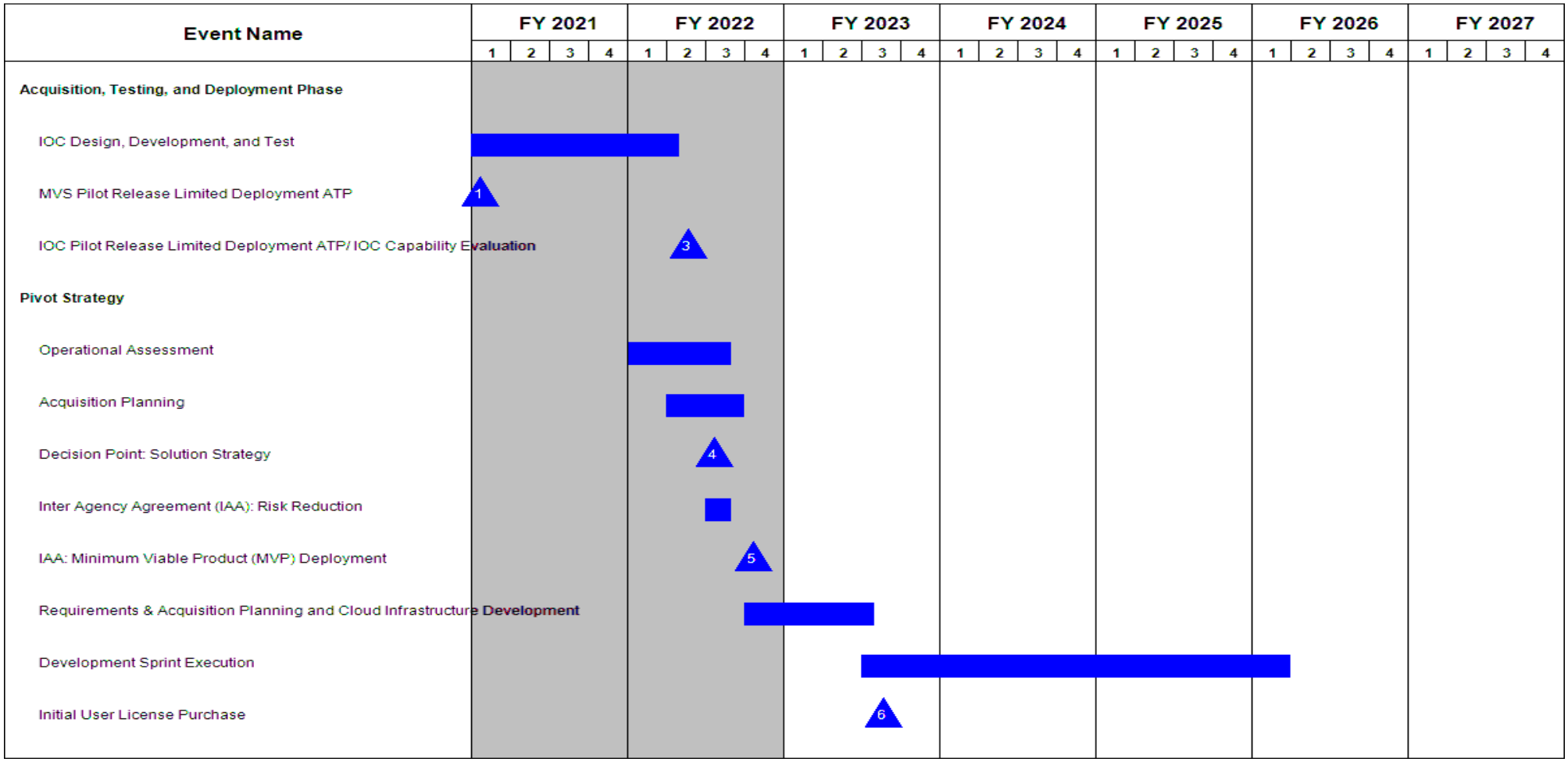


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

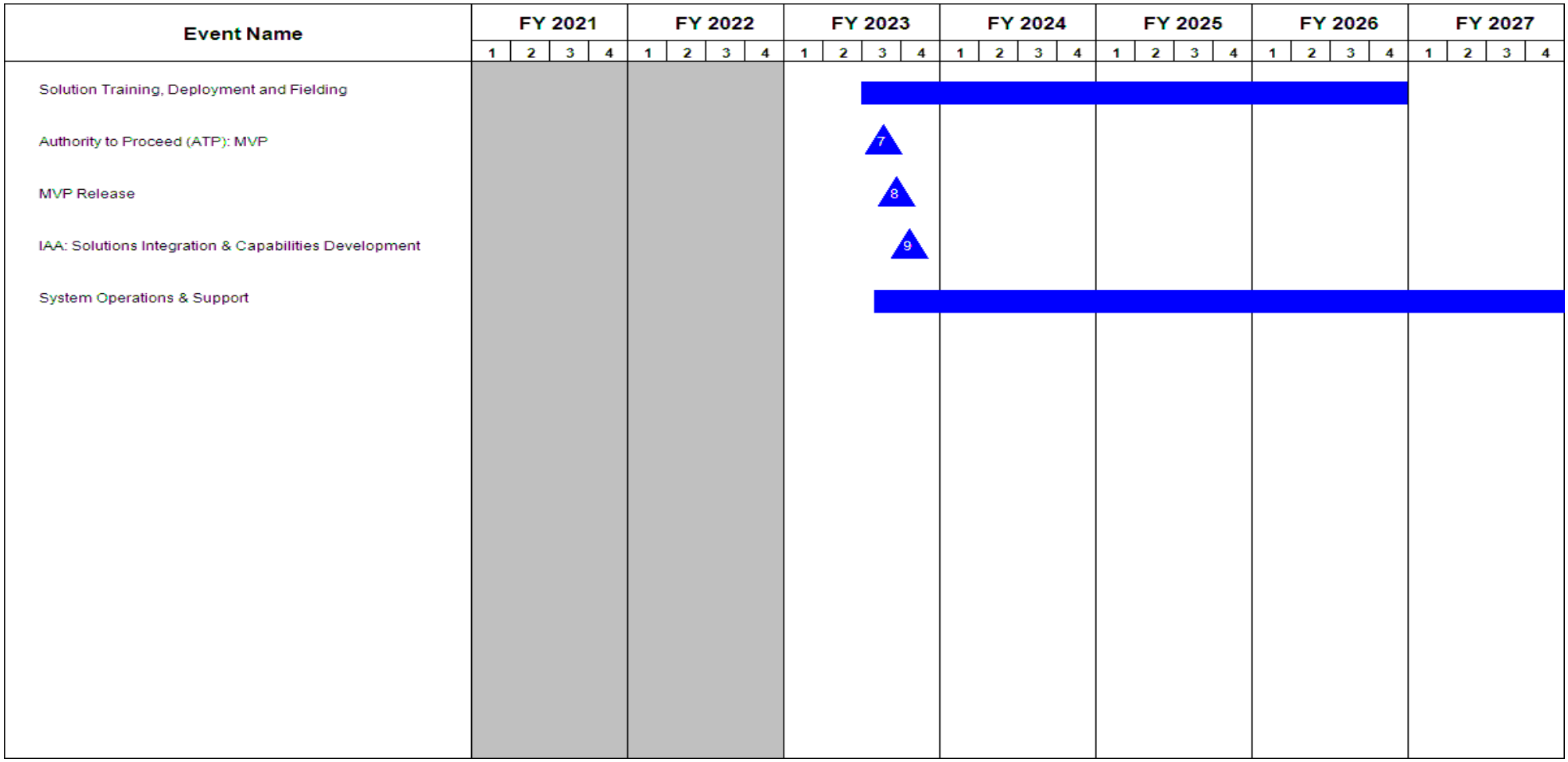


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605047A / *Contract Writing System*	**Project (Number/Name)** FA7 / *Contract Writing System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
RFP Release ADM (Material Solution Analysis Phase)	3	2016	3	2016
ATP-1 (MS A) / Contract Award - Task Order 0001	3	2017	3	2017
Risk Reduction Activities	3	2017	4	2018
Acquisition, Testing, and Deployment Phase	3	2016	3	2023
IOC Design, Development, and Test	4	2018	2	2022
Baseline ATP / Contract Award - MVS/IOC Release Task Order	4	2018	4	2018
MVS Pilot Release Limited Deployment ATP	1	2021	1	2021
MVS/IOC User Acceptance Testing (UAT) Events Complete	4	2020	4	2020
IOC Pilot Release Limited Deployment ATP/ IOC Capability Evaluation	2	2022	2	2022
Pivot Strategy	2	2022	2	2022
Operational Assessment	1	2022	3	2022
Acquisition Planning	2	2022	3	2022
Decision Point: Solution Strategy	3	2022	3	2022
Inter Agency Agreement (IAA): Risk Reduction	3	2022	3	2022
IAA: Minimum Viable Product (MVP) Deployment	4	2022	4	2022
Requirements & Acquisition Planning and Cloud Infrastructure Development	4	2022	3	2023
Development Sprint Execution	3	2023	1	2026
Initial User License Purchase	3	2023	3	2023
Solution Training, Deployment and Fielding	3	2023	4	2026
Authority to Proceed (ATP): MVP	3	2023	3	2023
MVP Release	3	2023	3	2023
IAA: Solutions Integration & Capabilities Development	4	2023	4	2023
System Operations & Support	3	2023	2	2032

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605051A *I Aircraft Survivability Development*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	99.403	61.768	19.123	-	19.123	16.610	13.368	14.853	14.997	0.000	240.122
ER7: *Aircraft Survivability Equipment Development*	-	31.323	38.329	12.083	-	12.083	8.456	8.047	9.936	10.033	0.000	118.207
ER8: *Common Missile Warning System (CMWS)*	-	68.080	23.439	7.040	-	7.040	8.154	5.321	4.917	4.964	0.000	121.915

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of the Aviation Survivability Equipment (ASE) as well as the Future Vertical Lift (FVL) Future Attack Reconnaissance Aircraft (FARA) and Future Long-Range Assault Aircraft (FLRAA) platforms. The Aircraft Survivability Development program includes Projects titled Aircraft Survivability Equipment Development (ER7) and Common Missile Warning System (CMWS) (ER8). This program also includes funding for Joint Urgent Operational Needs Statement (JUONS) SO-0010 Phase 2a, Headquarters Department of the Army (HQDA) Directed Requirement for Advanced Threat Warner (ATW) portion of Phase 3 ATW/Common Infrared Countermeasures Quick Reaction Capability (ATW/CIRCM QRC), and Limited Interim Missile Warning System Quick Reaction Capability (LIMWS QRC).

ER7: Aircraft Survivability Development.
The objective of the ASE Development project is to improve Radio Frequency (RF) ASE for Army Aviation. APR-39 Radar Warning Receiver (RWR) detects, categorizes, and prioritizes RF emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The Milestone Decision Authority (MDA) approved Phases 1 and 2 of a 3-phased path forward.

Phase 1, APR-39C(V)1/4, serves as an obsolescence / sustainment upgrade to the Processor Line Replaceable Unit (LRU) for AN/APR-39A(V) RWR implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3.

Phase 2A is RWR Modernization begins by adopting the United States Navy APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Phase 2B, the APR-39E(V)2, Modernized Radar Warning Receiver (MRWR), is an Army Engineering Change Proposal (ECP) to APR-39D(V)2, approved in the Acquisition Decision Memorandum (ADM) signed June 24, 2019. This ECP will implement enhanced hardware and software upgrades to keep APR-39 technically relevant against new and emerging agile threats. APR-39E(V)2 is part of the suite of ASE mission equipment for the FVL platforms.

Phase 3 adds active Radio Frequency Electronic Countermeasures (RF-ECM) capability for selected aircraft with Material Development Decision (MDD) planned in the future.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605051A *I Aircraft Survivability Development*

Justification: FY 2023 Base Research Development Technology & Evaluation (RDTE) funding of $12.083 million supports APR-39E(V)2 hardware and software system development, system government qualification, and performance testing.

ER8: Common Missile Warning System (CMWS).
The CMWS program is a missile warning system that cues both flare and laser-based countermeasures to defeat incoming Infrared (IR)-seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS Electronic Control Unit (ECU) receives ultraviolet (UV) missile detection data from Electro-Optic Missile Sensors (EOMS), which detect UV signals, and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently Common Infrared Countermeasures (CIRCM) -multiple platforms and Advanced Threat Infrared Countermeasures (ATIRCM)-equipped CH-47 platform only). In addition CMWS ECU receives from the EOMS unguided munitions detection data which it also passes to the aircrew through aural and visual alerts. The aircrew then applies the appropriate Tactics, Techniques and Procedures (TTPs) to break contact or engage the enemy with own-ship ordnance. CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding materiel release conditions and ensure protection against emerging IR-guided missile threats. Due to evolving threats, CMWS will remain in the Army inventory beyond 2040 and must remain relevant against emerging threats.

The A-Kit for CMWS includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

As a part of Phase 2a of the JUONS (SO-0010) program, the Army integrated the Department of the Navy Large Aircraft Infrared Countermeasure (DoN LAIRCM) system onto the Army and Special Operations Aircraft platforms. Due to a number of challenges, circumstances, and variables, the Army updated the Advanced Threat Warning/CIRCM QRC and LIMWS Directed Requirements (dated November 16, 2018). The updated requirements extend the utilization of ATW DoN LAIRCM on conventional Army aircraft and cancel the need for the ATW/CIRCM QRC system for the conventional Army. (It should be noted that the updated requirement maintains the need for ATW/CIRCM on the Special Operations Aircraft. Sustainment of ATW on Special Operations Aircraft will transfer to Special Operations Aircraft budget line in FY23). As a result, the Army did not acquire the ATW sensors for use in Phase 3 of the JUONS effort. Instead, the Army accelerated the procurement of the CIRCM QRC systems for use with the currently fielded CMWS in preparation for transition to the LIMWS system.

Phase 4 LIMWS QRC addresses the HQDA Directed Requirement to provide a greater capability than CMWS, the current Program of Record (POR), to bridge the gap between CMWS and the future POR. LIMWS is required to provide increased detection range, improved detection in clutter, more agile algorithms to rapidly respond to emerging threats, and eliminates the need for sensor alignments. To maintain overmatch of quickly emerging threat technology and tactics, LIMWS will explore and develop system modifications and performance improvements.

Justification:

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605051A *I Aircraft Survivability Development*

CMWS: FY 2023 Base RDTE dollars in the amount of $7.040 million will fund Future Sensor and Algorithm Analysis, Threat and Vulnerability Analysis, Systems Engineering and Program Management (SEPM), and Model Based Systems Engineering (MBSE).

References:
- Joint Staff, J-8 Deputy Director for Requirements (DOR) memorandum, April 24, 2015
- Phase 2a SOCOM JUONs SO-0010, Joint Rapid Acquisition Cell (JRAC) memorandum, May 29, 2015
- Directed Requirement for the Phase 3 Advanced Threat Warner and Common Infrared Countermeasure Quick Reaction Capability (ATW/CIRCM QRC) to Support Joint Urgent Operational Need (JUON) SO-0010, CIRCM Critical Intelligence Parameters Breach, December 18, 2015
- Directed Requirement for Limited Interim Missile Warning System to Detect Enemy Man Portable Air Defense Systems, March 26, 2017
- Update to the Directed Requirement for the United States Special Operations Command Joint Urgent Operational Needs SO-0010 Threat Detection and Countermeasures to Enemy Man Portable Air Defense System Capability, November 16, 2018
- Directed Requirement for Limited Interim Missile Warning System to Detect Enemy Man Portable Air Defense Systems, November 16, 2018
- Aircraft Survivability Equipment (ASE) Modernization Fielding Guidance, Change 1, November 19, 2018
- Acquisition Decision Memorandum (ADM) for Radio Frequency (RF) Project Manager Aircraft Survivability Equipment (PM ASE) Engineering Change Proposal (ECP) for Radar Warning Receiver AN/APR39-D(V)2 to AN/APR39-E(V)2, June 24, 2019 by PEO IEW&S.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	99.208	65.603	0.000	-	0.000
Current President's Budget	99.403	61.768	19.123	-	19.123
Total Adjustments	0.195	-3.835	19.123	-	19.123
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.835			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.195	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	19.123	-	19.123

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: ER8: *Common Missile Warning System (CMWS)*		
Congressional Add: *Program Increase - Aviation Artificial Intelligence Virtual Training Environment*	-	3.000
Congressional Add Subtotals for Project: ER8	-	3.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605051A *I Aircraft Survivability Development*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Congressional Add Totals for all Projects	-	3.000

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER7 / *Aircraft Survivability Equipment Development*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
ER7: *Aircraft Survivability Equipment Development*	-	31.323	38.329	12.083	-	12.083	8.456	8.047	9.936	10.033	0.000	118.207
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of FVL FARA and FLRAA platforms.

The objective of the ASE Development project is to improve RF ASE for Army aviation. APR-39 RWR detects, categorizes, and prioritizes RF emitters and provides a visual / aural alert to aircrew members warning them of targeting by RF-guided weapons. The MDA approved Phases 1 and 2 of a 3-phased path forward.

Phase 1, APR-39C(V)1/4, serves as an obsolescence / sustainment upgrade to the Processor LRU of APR-39A(V) RWR implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3.

Phase 2A is RWR Modernization begins by adopting the United States Navy APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Phase 2B, the APR-39E(V)2, MRWR, is an Army ECP to APR-39D(V)2, approved in the ADM signed June 24, 2019. This ECP will implement enhanced hardware and software upgrades to keep APR-39 technically relevant against new and emerging agile threats. APR-39E(V)2 is part of the suite of ASE mission equipment for the FVL platforms.

Phase 3 adds active RF-ECM capability for selected aircraft with MDD planned in the future.

Justification: FY 2023 Base RDT&E funding of $12.083 million supports APR-39E(V)2 hardware and software system development, system government qualification, and performance testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Phase 2 Radio Frequency Countermeasure (CM)	31.323	36.930	12.083
Description: Phase 2A is RWR Modernization begins by adopting the United States Navy APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Phase 2B, the APR-39E(V)2, MRWR, is an Army ECP to APR-39D(V)2, approved in the ADM signed June 24, 2019. This ECP will implement enhanced hardware and software upgrades to keep APR-39 technically relevant against new and emerging agile threats. APR-39E(V)2 is part of the suite of ASE mission equipment for the FVL platforms.			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Will fund APR-39E(V)2 hardware and software system development, platform integration, systems engineering and program management, initial system government qualification and performance testing. Supports preliminary analysis for FVL A-Kit development and integration. ***FY 2023 Plans:*** Will fund APR-39E(V)2 hardware and software system development, systems engineering and program management, initial system government qualification and performance testing. Supports preliminary analysis for integration of ASE systems on FVL FARA and FLRAA platforms. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The reduction is due to the completion of the Army lead platform development.			
Title: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) ***FY 2022 Plans:*** SBIR/STTR Transfer. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY22 SBIR/STTR Transfer	-	1.399	-
Accomplishments/Planned Programs Subtotals	31.323	38.329	12.083

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• AZ3511: *Radio Frequency CM*	36.890	54.841	158.883	-	158.883	144.028	75.963	92.497	92.126	3,257.349	3,912.577

Remarks

D. Acquisition Strategy

Army RF ASE is managed by Project Manager ASE (PM ASE) for development, testing, procurement, integration and installation on Army rotary wing and fixed wing Special Electronic Mission Aircraft (SEMA) aviation platforms. PM ASE proposed a three-phased path forward commensurate with user priorities and affordability considerations. The MDA approved Phases 1 and 2 of a 3-phased path forward.

Phase 1, APR-39C(V)1/4, serves as an obsolescence / sustainment upgrade to the Processor LRU of APR-39A(V) RWR implemented to ensure that the currently fielded system remains viable until affordable improved RF ASE capability can be pursued in Phases 2 and 3.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

Phase 2A is RWR Modernization begins by adopting the United States Navy APR-39D(V)2 system. APR-39D(V)2 will significantly improve the RF threat coverage, automatic detection and identification of threat types, bearing, and lethality. Phase 2B, the APR-39E(V)2, MRWR, is an Army ECP to APR-39D(V)2, approved in the ADM signed June 24, 2019. This ECP will implement enhanced hardware and software upgrades to keep APR-39 technically relevant against new and emerging agile threats. APR-39E(V)2 is part of the suite of ASE mission equipment for the FVL platforms.

Phase 3 adds active RF-ECM capability for selected aircraft with MDD planned in the future.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER7 / *Aircraft Survivability Equipment Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Threat Management/ SEPM	Various	Various : -	11.412	1.022	Nov 2020	1.910	Nov 2021	1.167	Nov 2022	-		1.167	Continuing	Continuing	-
Project Management	Various	Various : -	1.926	-		-		-		-		-	Continuing	Continuing	-
NDAA SEC 825 MDAP Cost Overrun	Various	Various : Various	0.028	-		-		-		-		-	0.000	0.028	-
SBIR/STTR Transfer	C/TBD	Various : Various	-	-		1.399	Oct 2021	-		-		-	Continuing	Continuing	-
		Subtotal	13.366	1.022		3.309		1.167		-		1.167	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Radar Warning Receiver (RWR) (D(V)2)	Various	Lab Demo / Study : Various	10.634	-		-		-		-		-	Continuing	Continuing	-
APR-39E(V)2 SW & HW Development	Various	OGA : Aberdeen Proving Grounds, MD	90.158	24.703	Oct 2020	18.400	Oct 2021	5.773	Oct 2022	-		5.773	Continuing	Continuing	-
Threat and Vulnerabllity Analysis/Sil Updates	MIPR	I2WD : Aberdeen Proving Grounds, MD	2.547	-		-		-		-		-	Continuing	Continuing	-
Depot Standup	MIPR	Tobyhanna : Tobyhanna, PA	1.063	-		-		-		-		-	0.000	1.063	-
APR-39E(V)2 Platform Integration	Various	Multiple : -	5.943	2.046	Jan 2021	-		-		-		-	Continuing	Continuing	-
		Subtotal	110.345	26.749		18.400		5.773		-		5.773	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support	Various	Various : -	4.685	-		-		-		-		-	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER7 / *Aircraft Survivability Equipment Development*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	Various	Various : -	6.800	-		-		-		-		-	Continuing	Continuing	-
		Subtotal	11.485	-		-		-		-		-	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DT/OT	Various	Various : -	3.439	-		6.140	Mar 2022	3.001	Mar 2023	-		3.001	Continuing	Continuing	-
Government System Test and Evaluation	Various	Various : -	22.711	3.552	Mar 2021	10.480	Oct 2021	2.142	Oct 2022	-		2.142	Continuing	Continuing	-
		Subtotal	26.150	3.552		16.620		5.143		-		5.143	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	161.346	31.323		38.329		12.083		-		12.083	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

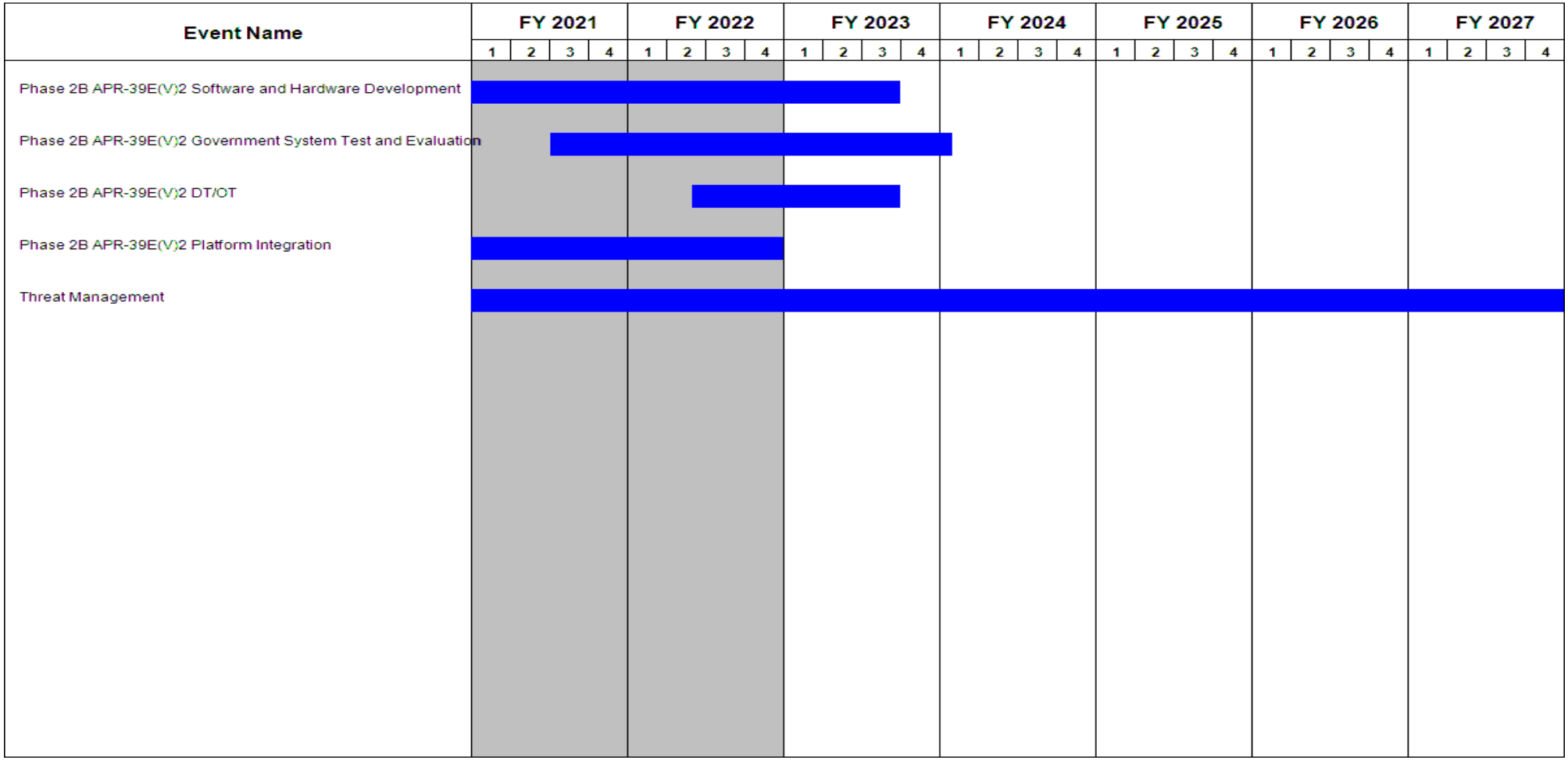


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER7 / *Aircraft Survivability Equipment Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Threat Vulnerability Analysis//SIL Updates	3	2016	4	2017
Phase 2B APR-39E(V)2 Software and Hardware Development	2	2018	3	2023
Phase 2B APR-39E(V)2 Government System Test and Evaluation	3	2021	1	2024
Phase 2B APR-39E(V)2 DT/OT	2	2022	3	2023
Phase 2B APR-39E(V)2 Platform Integration	2	2020	4	2022
Threat Management	4	2020	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER8 / *Common Missile Warning System (CMWS)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
ER8: *Common Missile Warning System (CMWS)*	-	68.080	23.439	7.040	-	7.040	8.154	5.321	4.917	4.964	0.000	121.915
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The CMWS program is a missile warning system that cues both flare and laser-based countermeasures to defeat incoming IR seeking missiles and will alert aircrews to the presence of certain incoming unguided munitions. The B-Kit consists of the components which perform the missile detection and aircrew notification, unguided munitions detection and aircrew notification, false alarm rejection, and countermeasure employment/cueing functions of the system. The CMWS ECU receives UV missile detection data from EOMS, which detect UV signals, and sends a missile alert signal to warn aircrews via on-board avionics. Tier 1 threat missiles detected and tracked by the CMWS are subsequently defeated by a combination of missile seeker countermeasures, including decoy flares and IR Laser Jamming (currently CIRCM and ATIRCM equipped CH-47 platform only). In addition, the CMWS ECU receives from the EOMS unguided munitions detection data which it also passes to the aircrew through aural and visual alerts. The aircrew then applies the appropriate TTPs to break contact or engage the enemy with own-ship ordnance. The CMWS Generation 3 (Gen 3) ECU in conjunction with ongoing software development efforts will address outstanding materiel release conditions and ensure protection against emerging IR-guided missile threats. Due to evolving threats, CMWS will remain in the Army inventory beyond 2040 and must remain relevant against emerging threats.

The A-Kit for CMWS includes mounting hardware, wiring harnesses, cables, and other components necessary to install and interface the mission kit on host aircraft. The A-Kit ensures the mission kit is functionally and physically operational with a specific host aircraft type.

As a part of Phase 2a of the JUONS (SO-0010) program, the Army integrated the DoN LAIRCM system onto the Army and Special Operations Aircraft platforms. Due to a number of challenges, circumstances, and variables, the Army updated the Advanced Threat Warning/CIRCM QRC and LIMWS Directed Requirements (dated November 16, 2018). The updated requirements extend the utilization of ATW DoN LAIRCM on conventional Army aircraft and cancel the need for the ATW/CIRCM QRC system for the conventional Army. (It should be noted that the updated requirement maintains the need for ATW/CIRCM on the Special Operations Aircraft. Sustainment of ATW on Special Operations Aircraft will transfer to Special Operations Aircraft budget line in FY23). As a result, the Army did not acquire the ATW sensors for use in Phase 3 of the JUONS effort. Instead, the Army accelerated the procurement of the CIRCM QRC systems for use with the currently fielded CMWS in preparation for transition to the LIMWS system.

Phase 4 LIMWS QRC addresses the HQDA Directed Requirement to provide a greater capability than CMWS, the current Program of Record (POR), to bridge the gap between CMWS and the future POR. LIMWS is required to provide increased detection range, improved detection in clutter, more agile algorithms to rapidly respond to emerging threats, and eliminates the need for sensor alignments. To maintain overmatch of quickly emerging threat technology and tactics, LIMWS will explore and develop system modifications and performance improvements.

CMWS: FY 2023 Base RDTE dollars in the amount of $7.040 million will fund Future Sensor and Algorithm Analysis, Threat and Vulnerability Analysis, SEPM, and MBSE.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: CMWS Product Development and Management Services ***Description:*** RDTE funding supports continuing development engineering threat and vulnerability analysis, SEPM, and integration with other ASE Systems. ***FY 2022 Plans:*** FY 2022 Base RDTE dollars in the amount of $6.610 million will fund Future Sensor and Algorithm Analysis, Threat and Vulnerability Analysis, SEPM, and MBSE. ***FY 2023 Plans:*** FY 2023 Base RDTE dollars in the amount of $7.040 million will fund Future Sensor and Algorithm Analysis, Threat and Vulnerability Analysis, SEPM, and MBSE. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 includes decreased funding for Future Sensor and Algorithm Analysis, Threat and Vulnerability Analysis, SEPM, and MBSE.	3.455	6.368	7.040
Title: Phase 4 LIMWS QRC ***Description:*** Phase 4 LIMWS is a follow-on bridging solution to the JUONS SO-0010 to provide a greater capability than the current POR, CMWS, until the future POR is available. LIMWS is a Chief of Staff of the Army approved Directed Requirement issued by Army G-8 on March 26, 2017. LIMWS QRC provides an enhanced missile warning system to detect emerging and evolving enemy Man Portable Air Defense Systems (MANPADS) threats. ***FY 2022 Plans:*** FY 2022 Direct War/Enduring Operation RDTE dollars in the amount of $13.829 million fund development and testing of software and A-Kits for integration onto Army and Special Operations Aircraft as well as software, firmware, and hardware updates for Conventional Army Aircraft. Supports preliminary analysis for FVL integration. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY23 funding is not requested.	64.625	13.829	-
Title: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) ***FY 2022 Plans:*** SBIR/STTR Transfer. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	0.242	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY22 SBIR/STTR Transfer			
Accomplishments/Planned Programs Subtotals	68.080	20.439	7.040

	FY 2021	FY 2022
Congressional Add: Program Increase - Aviation Artificial Intelligence Virtual Training Environment	-	3.000
FY 2022 Plans: FY 2022 RDTE Base funding in the amount of $3.000 million will fund the development of an Aviation Artificial Intelligence Virtual Training Environment.		
Congressional Adds Subtotals	-	3.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• AZ3517: *CMWS*	159.729	148.570	107.112	-	107.112	13.797	5.315	14.507	14.502	706.012	1,169.544

Remarks

D. Acquisition Strategy

CMWS: Procurement of US Government CMWS A-Kit and B-Kits are complete. CMWS is managed as Mission Equipment for deploying units and fielded as directed by HQDA G-3/5/7. The CMWS program will continue to be supported through a five year services-only Cost Plus Fixed Fee or Cost Plus Incentive Fee contract, with services which began on July 31, 2019.

Phase 2a JUONS DoN LAIRCM and Phase 3 CIRCM QRC: JUONS S0-0010 acquisition strategy includes aircraft prime contractor engineering support contracted to a Government test organization. Aircraft integration for JUONS will be handled through government operated organizations and industry partners.

Phase 4 LIMWS QRC: Acquisition strategy included a full and open competition for selection of prime vendor for development of B-Kits, development of A-Kits, and support testing for the lead program. Additional platform A-Kit development will be completed by government organizations, small business and industry partners.

Threat and Vulnerability analysis efforts will be used to determine if an algorithm update is required to maintain missile warning threat overmatch and provide input to improve US Government authoritative threat modeling updates.

Future Sensor and Algorithm Analysis development equally supports MANPADS and Hostile Fire overmatch through evaluation of emerging sensor technologies and advances in algorithm techniques. This analysis identifies opportunities to optimize performance and modernize fielded systems in order to maintain relevance for the future.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

CMWS SEPM is necessary due to the nature of emerging and current threat(s). Threat(s) analyses include, when required, collaboration support with intelligence organizations, course of action planning, root cause investigations, threat and laboratory hardware maintenance, and lab tools upgrade to support specific performance analyses.

Development of MBSE models of CMWS and LIMWS will align to Program Executive Office Aviation (PEO AVN) system engineering models. Continued MBSE development supports improved performance, weight reduction and testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER8 / *Common Missile Warning System (CMWS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	10.020	0.754	Jan 2020	0.800	Jan 2022	0.814	Jan 2023	-		0.814	Continuing	Continuing	Continuing
Advanced Missile Warning System Systems Engineering Program Management	TBD	TBD : TBD	2.000	-		-		-		-		-	0.000	2.000	-
JUONS SO-0010 Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	1.627	-		-		-		-		-	0.000	1.627	-
CIRCM QRC Systems Engineering Program Management	Various	Various : PM ASE, HSV, AL	8.144	-		-		-		-		-	0.000	8.144	-
LIMWS - SEPM	Various	Various : PM ASE, HSV, AL	6.856	-		-		-		-		-	0.000	6.856	-
SBIR / STTR Transfer	TBD	Various : Various	0.212	-		0.242		-		-		-	0.000	0.454	-
		Subtotal	28.859	0.754		1.042		0.814		-		0.814	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS tier 2/3 Upgrades	Various	Various : -	2.000	-		-		-		-		-	0.000	2.000	-
CMWS Threat Analysis Database Design	Various	BAE : Various	0.455	-		-		-		-		-	0.000	0.455	-
CMWS Threat Analysis Database (TAD)	Various	BAE : Various	6.119	-		-		-		-		-	0.000	6.119	-
CMWS Enhanced Sensor Study & Evaluation	Various	Various : -	11.466	-		-		-		-		-	0.000	11.466	-
CMWS Data Modeling	TBD	Various : Various	0.688	-		-		-		-		-	0.000	0.688	-
CMWS Future Sensor and Algorithm Analysis	Various	Various : TBD	6.670	1.154	Mar 2020	1.570	Mar 2022	2.753	Mar 2023	-		2.753	0.000	12.147	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER8 / *Common Missile Warning System (CMWS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Prime Contractor--Integration Engineering	TBD	TBD,TBD : TBD	7.787	-		-		-		-		-	0.000	7.787	-
CMWS Aircraft Integration	TBD	Various : Various	19.974	-		-		-		-		-	0.000	19.974	-
CMWS Software	TBD	Various : Various	3.000	-		-		-		-		-	0.000	3.000	-
JUONS SO-0010 Prime Contractor -- Integration Engineering	Various	Various : Various	8.842	-		-		-		-		-	0.000	8.842	-
JUONS SO-0010 Software	Various	Various : Various	1.534	-		-		-		-		-	0.000	1.534	-
JUONS SO-0010 Training	Various	Various : Various	0.200	-		3.000		-		-		-	0.000	3.200	-
CIRCM QRC Development Engineering	Various	Northrup Grumman : Rolling Meadow, IL	5.100	-		-		-		-		-	0.000	5.100	-
CIRCM QRC System Development and Qualification	Various	Various : Various	53.474	-		-		-		-		-	0.000	53.474	-
CIRCM QRC Aircraft Integration	Various	Various : Various	24.223	-		-		-		-		-	0.000	24.223	-
Limited Interim Missile Warning System (LIMWS) - Development Engineering	Various	Various : PM ASE, HSV, AL	166.242	45.585	Mar 2021	5.485	Mar 2022	-		-		-	Continuing	Continuing	Continuing
CMWS Threat and Vulnerability Analysis	Various	Various : TBD	8.349	1.547	Mar 2020	3.998	Mar 2022	3.473	Mar 2023	-		3.473	Continuing	Continuing	Continuing
		Subtotal	326.123	48.286		14.053		6.226		-		6.226	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LIMWS - Matrix Support	Various	Various : PM ASE, HSV, AL	6.839	2.170	Jan 2021	-		-		-		-	0.000	9.009	-
LIMWS - Contractor Support	Various	Various : PM ASE, HSV, AL	6.032	3.797	Jan 2021	2.000	Jan 2022	-		-		-	0.000	11.829	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605051A / *Aircraft Survivability Development*	Project (Number/Name) ER8 / *Common Missile Warning System (CMWS)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	12.871	5.967		2.000		-		-		-	0.000	20.838	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMWS Test and Evaluation	TBD	Various : Various	16.156	-		-		-		-		-	0.000	16.156	-
JUONS SO-0010 Test and Evaluation	Various	Various : Various	26.709	-		-		-		-		-	0.000	26.709	-
CIRCM QRC Test and Evaluation/Tech Manuals	Various	Various : Various	35.050	-		-		-		-		-	0.000	35.050	-
LIMWS - Government Testing	Various	Various : PM ASE, HSV, AL	60.788	13.073	Mar 2021	6.344	Mar 2022	-		-		-	Continuing	Continuing	Continuing
		Subtotal	138.703	13.073		6.344		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	506.556	68.080		23.439		7.040		-		7.040	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

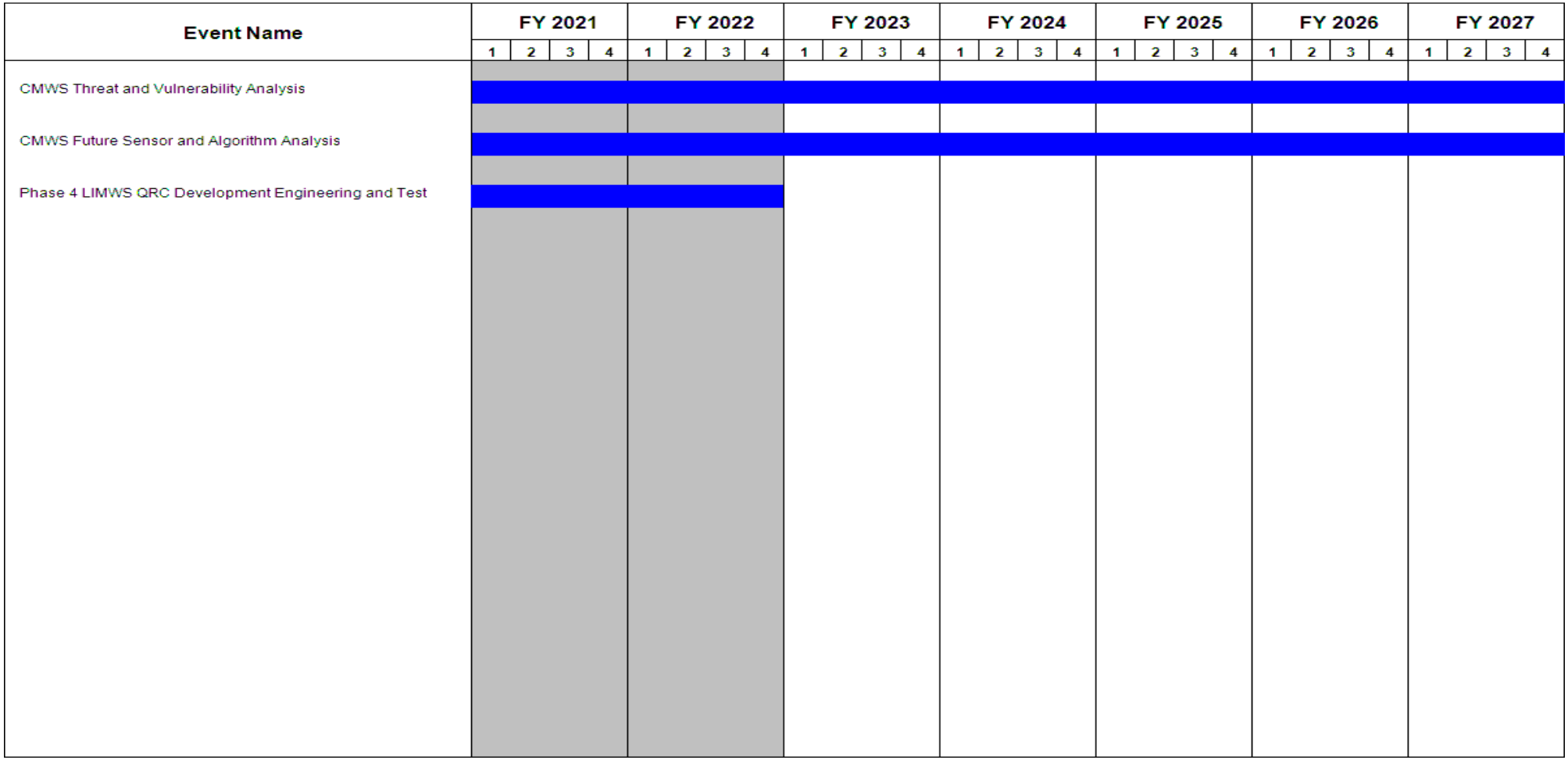


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605051A / *Aircraft Survivability Development*	**Project (Number/Name)** ER8 / *Common Missile Warning System (CMWS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CMWS System Dev/Tier 2 and 3 Upgrades	2	2011	4	2019
CMWS Gen 3 Production	3	2012	4	2016
CMWS Threat Analysis Database (TAD)	2	2012	4	2019
CMWS Vulnerability Analysis and Assessment of Technology	2	2015	4	2019
CMWS Threat and Vulnerability Analysis	1	2020	4	2030
CMWS Future Sensor and Algorithm Analysis	1	2017	4	2030
Phase 3 ATW/CIRCM QRC Engineering, Integration, and Test	2	2016	1	2020
Phase 4 LIMWS QRC Development Engineering and Test	3	2017	4	2022

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605052A *I Indirect Fire Protection Capability Inc 2 - Block 1*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	152.399	182.257	131.093	-	131.093	59.266	10.774	10.778	0.000	0.000	546.567
EY7: *IFPC Increment 2 - Block 1*	-	152.399	182.257	131.093	-	131.093	59.266	10.774	10.778	-	0.000	546.567

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Air and Missile Defense Modernization Priority.

The Indirect Fire Protection Capability Increment 2 (IFPC Inc 2) will provide a ground-based weapon system designed to acquire, track, engage, and defeat Cruise Missiles (CM), Unmanned Aircraft Systems (UAS), and Rocket, Artillery, and Mortar (RAM) threats. The IFPC Inc 2 system consists of a launcher and interceptor integrated with the Army Integrated Air and Missile Defense (AIAMD) open systems architecture, IAMD Battle Command System (IBCS), and the Sentinel sensor to support the Threshold CM and UAS defeat mission. The Objective counter-RAM mission employs both alternative kinetic and non-kinetic defeat solutions.

The Army is pursuing the IFPC Inc 2 capability consisting of a launcher and interceptor as the kinetic solution for the mission to defeat CM, UAS, and RAM threats. The Army plans to pursue the IFPC High Energy Laser (IFPC HEL) and IFPC High Powered Microwave (IFPC HPM) as non-kinetic effectors of the IFPC counter-RAM, counter-CM, and counter-UAS (Class 1 - 3) missions.

Additionally, section 112 of the National Defense Authorization Act for 2019 directed the Army to deploy an Interim Cruise Missile Defense (CMD) capability. The Army contracted with the Israeli Missile Defense Organization (IMDO) for two Interim CMD (Iron Dome Defense System - Army (IDDS-A)) batteries and continues efforts to improve their interoperability with the Army's Integrated Air and Missile Defense networks.

Fiscal Year (FY) 2023 Base dollars in the amount of $131.093 million are designated for Interim CMD Interoperability testing and support, the development, integration, and testing of the IFPC Inc 2 system, and initialization of the IFPC Directed Energy team.

The total cost of the IFPC Inc 2 Middle Tier Acquisition (MTA) effort is $521.3 million RDT&E from FY 2021 to FY 2024. IFPC Inc 2 MTA is fully funded across the Future Years Defense Program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605052A *I Indirect Fire Protection Capability Inc 2 - Block 1*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	153.362	233.512	0.000	-	0.000
Current President's Budget	152.399	182.257	131.093	-	131.093
Total Adjustments	-0.963	-51.255	131.093	-	131.093
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-51.244			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.963	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	131.093	-	131.093
• FFRDC Transfer	-	-0.011	-	-	-

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*				Project (Number/Name) EY7 / *IFPC Increment 2 - Block 1*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
EY7: *IFPC Increment 2 - Block 1*	-	152.399	182.257	131.093	-	131.093	59.266	10.774	10.778	-	0.000	546.567
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Air and Missile Defense Modernization Priority.

The Indirect Fire Protection Capability Increment 2 (IFPC Inc 2) will provide a ground-based weapon system designed to acquire, track, engage, and defeat Cruise Missiles (CM), Unmanned Aircraft Systems (UAS), and Rocket, Artillery, and Mortar (RAM) threats. The IFPC Inc 2 system consists of a launcher and interceptor integrated with the Army Integrated Air and Missile Defense (AIAMD) open systems architecture, IAMD Battle Command System (IBCS), and the Sentinel sensor to support the Threshold CM and UAS defeat mission. The Objective counter-RAM mission employs both alternative kinetic and non-kinetic defeat solutions.

In response to section 112 of the National Defense Authorization Act for 2019, the Army evaluated alternative strategies to address an Army interim CM defense (CMD) capability at critical strategic fixed site locations while continuing the development of an IFPC capability. In Fiscal Year (FY) 2019, the Army contracted with the Israeli Missile Defense Organization (IMDO) for two Interim CMD (Iron Dome Defense System - Army (IDDS-A)) batteries that were delivered in FY 2021. The IFPC Inc 2 program is conducting an interoperability effort to establish communications between the Interim CMD (IDDS-A) batteries' Battle Management Center (BMC) and the US Army's Air and Missile Defense (AMD) Architecture that includes the Army's Integrated Air and Missile Defense (IAMD) Battle Command System (IBCS) and legacy Air Defense command and control (C2) networks.

Concurrently with the Interim CMD effort, the Army is pursuing an Enduring IFPC Inc 2 Middle Tier Acquisition (MTA) - Rapid Prototyping strategy. This competitive strategy invited Industry to participate in a "Shoot Off" demonstration in FY 2021 using Industries' proposed launcher and missile solutions integrated with the Army's IBCS and Sentinel radar. The Army awarded a fixed price Other Transaction Authority (OTA) agreement to Dynetics, Inc. on 24 September, 2021 to deliver the Enduring IFPC Inc 2 prototype solution. The Army will use this MTA Rapid Prototyping approach to provide a prototype capability in FY 2023, before transitioning into Production and Deployment phase.

The total cost of the IFPC Inc 2 Middle Tier Acquisition (MTA) effort is $521.3 million RDT&E from FY 2021 to FY 2024. IFPC Inc 2 MTA is fully funded across the Future Years Defense Program.

The Army plans to pursue the IFPC High Energy Laser (IFPC HEL) and IFPC High Powered Microwave (IFPC HPM) as non-kinetic effectors of the IFPC counter-RAM, counter-CM, and counter-UAS (Class 1 - 3) missions. The IFPC HEL and IFPC HPM elements will be robust, cost effective, and sustainable complementary capabilities to the overall IFPC mission to protect key fixed and semi-fixed sites. The IFPC Product Office will conduct initial planning and coordination with the Army Rapid Capabilities and Critical Technologies Office (RCCTO) and the Army's Air and Missile Defense Cross-Functional Team (AMD CFT) in FY 2023 to enable an efficient transfer of the IFPC HEL and IFPC HPM efforts in FY 2024.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

FY 2023 Base dollars in the amount of $131.093 million are designated for Interim CMD Interoperability testing and support, the development, integration, and testing of the IFPC Inc 2 system, and initialization of the IFPC Directed Energy team for coordination on the Program transfer from RCCTO and establishment of future requirements.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Interim CMD (Iron Dome Defense System - Army) Integration and Testing	4.475	5.335	-
Description: Funding is provided to support the assessment of operational utility and safety of the Iron Dome Defense System-Army (IDDS-A) as an Interim IFPC Inc 2 capability ***FY 2022 Plans:*** - Residual testing of Interim CMD (IDDS-A) capability - Interim CMD (IDDS-A) Interoperability Operational Assessment - Conduct system engineering, logistics engineering, system evaluation management, and technical configuration control to enhance interoperability of Interim CMD (IDDS-A) capability with US missile defense architecture - Assess supportability requirements, sufficiency of training, maintenance and repair procedures, and capabilities of logistics support package during Operational Assessment - Continue IAMD effort to expand interoperability between Interim CMD (IDDS-A) and the Army Integrated Air and Missile Defense (AIAMD) through IBCS - IFPC's Interim CMD (IDDS-A) will develop nascent capability and support Army demonstration and test initiatives to increase interoperable offensive and defensive capability across warfighter functions and multiple domains ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Interoperability efforts completed in FY 2022.			
Title: IFPC Inc 2 Prototype Development, Integration, Manufacturing, and Testing	147.924	170.269	129.848
Description: Funding is provided to support the development, integration, prototype manufacturing, and testing of the IFPC Inc 2 capability ***FY 2022 Plans:*** - FY 2022 SBIR/STTR Transfer - Continue manufacturing of incrementally funded IFPC Inc 2 prototype launchers (16) and interceptors (80) - Continue launcher, interceptor, and system hardware and software design for producibility, affordability, and operational supportability to ensure materiel availability and reduce the logistics footprint - Continue IFPC Inc 2 interceptor integration with launcher			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
- Continue IFPC Inc 2 launcher and interceptor development activities to integrate launcher and interceptor hardware and software, communications, and Data Uplink, and externally with IBCS EOC and Sentinel radar to ensure operational integrity and protection of critical program information - Continue IFPC Inc 2 launcher and interceptor model and simulation accreditation to provide alternate means to prove out system capabilities while reducing live fire test event requirements - Continue Interoperability End-to-End simulations and testing, to include updating the GSIL's Hardware-in-the-Loop elements with selected prototype hardware - Develop and integrate Operator and Maintainer Interfaces: Technical User and Maintenance Manuals, internal Maintenance Troubleshooting software, internal training software, RT3 software update for IFPC system, update to IBCS mission command SW tools (i.e., Integrated Defense Designer tool to inform for optimal coverage and protection) - Develop trainer hardware and software packages for institutional Operators and Maintainers training at ADA School and NG Training Sites - Initiate testing activities to demonstrate system integration, interoperability, supportability, safety, and utility - Initiate testing activities to demonstrate reliability, availability, maintainability, and sustainment features included in design of the system and ensure operational supportability while minimizing the logistical footprint - Conduct initial planning and coordination with RCCTO and AMD CFT on IFPC HEL and IFPC HPM			
FY 2023 Plans: - Final incremental funding for delivery of IFPC Inc 2 prototype launchers and interceptors - Continue IFPC Inc 2 launcher and interceptor model and simulation efforts to provide alternate means to prove out system capabilities while reducing live fire test event requirements - Continue Interoperability End-to-End simulations and testing, to include updating the GSIL's Hardware-in-the-Loop elements with selected prototype hardware - Evaluate Operator and Maintainer Interfaces with Soldiers: Technical User and Maintenance Manuals, internal Maintenance Troubleshooting software, internal training software, RT3 software update for IFPC system, update to IBCS mission command SW tools (i.e., Integrated Defense Designer tool to inform for optimal coverage and protection) - Evaluate trainer hardware and software packages for institutional Operators and Maintainers training at ADA School and NG Training Sites - Continue developmental, operational, and Integrated Fires testing to ensure operational supportability while minimizing the logistical footprint			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Program continues correcting issues found in developmental testing and improving integration, while starting to transition to operational and flight tests.			
Title: IFPC Directed Energy Integration and Test ***FY 2023 Plans:*** The IFPC Inc 2 Product Office will establish an initial IFPC Direct Energy team to coordinate the transfer of responsibility, as well as, determine IFPC Inc 2 Product Office requirements for these products ***FY 2022 to FY 2023 Increase/Decrease Statement:*** New requirement for FY 2023	-	-	1.245
Title: FY22 SBIR/STTR Transfer ***FY 2022 Plans:*** FY22 SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY22 SBIR/STTR Transfer	-	6.653	-
Accomplishments/Planned Programs Subtotals	152.399	182.257	131.093

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• C62002: *IFPC INC 2-I BLOCK 1 SYSTEM*	62.461	19.053	18.924	-	18.924	386.383	670.667	712.994	722.152	0.000	2,592.634
• E10: *Sentinel*	105.271	122.607	71.259	-	71.259	74.055	31.655	8.578	8.662	0.000	422.087
• WK5057: *Sentinel Mods*	92.380	47.642	166.736	-	166.736	165.199	234.255	234.248	235.052	Continuing	Continuing
• S40: *Army Integrated Air and Missile Defense*	213.956	159.873	265.288	-	265.288	289.312	344.958	182.204	131.523	0.000	1,587.114
• BZ5075: *IAMD Battle Command System*	198.587	296.872	438.967	-	438.967	412.920	457.335	458.445	457.608	Continuing	Continuing
• BU9: *IFPC High Energy Laser*	-	8.258	177.843	-	177.843	133.534	32.208	-	-	0.000	351.843
• CO6: *IFPC High Power Microwave (HPM)*	-	19.614	42.977	-	42.977	11.402	4.104	-	-	0.000	78.097

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost

Remarks

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

D. Acquisition Strategy

As reported to Congress in Oct 2018, the Army has rapidly fielded an Interim CMD capability with the Israeli Iron Dome Defense System - Army (IDDS-A). Concurrently, the Army has initiated efforts to integrate an Enduring IFPC capability of a launcher and interceptor leveraging the AIAMD open systems architecture and IBCS, as the Fire Control component, and the US Sentinel sensor.

On 9 Feb 2019, the Army approved a Directed Requirement to initiate procurement of the Israeli IDDS-A for the Interim CMD capability. Congress approved ATR actions to align IFPC FY 2018 and 2019 Procurement to fund the Interim CMD (IDDS-A) purchase and to repurpose the FY 2019 RDTE funds in May 2019 for associated system evaluation.

To support the Interim CMD (IDDS-A) requirement, the Army contracted for two Interim CMD (IDDS-A) batteries for technical evaluation, assessment of operational utility, and safety evaluation. Additionally, the IFPC program has performed logistics analysis and assessments to determine IDDS-A training requirements, fielding requirement, spares packages, maintenance policies, and required Operational and Maintenance documentation. IFPC conducted Performance Analysis and Operational Testing of the Interim CMD (IDDS-A) capability at White Sands Missile Range in FY 2021 to prove out their readiness for deployment. IFPC continues to conduct interoperability efforts to assess the ability to improve IDDS-A interoperability with U.S. Air Defense Artillery system architecture, continuing its logistics assessments, Modeling and Simulation analysis, and interoperability activities.

In support of the Army's enduring Cruise Missile Defense requirement, the Army is utilizing a Middle Tier Acquisition (MTA) Rapid Prototyping approach to evaluate new capability and provide a prototype capability in FY 2023, before transitioning into Production and Deployment phase by FY 2024. In support of the IFPC Inc 2 solution, the Army pursued a Competitive strategy that saw Industry participating in a "Shoot Off" demonstration in FY 2021 using Industries' proposed launcher and missile solutions integrated with the Army's IBCS and Sentinel radar. The Army has evaluated Industry proposals informed by models and simulations, hardware-in-the-loop, and live fire data, to make a Best Value recommendation to proceed to a single vendor to deliver the enduring IFPC Inc 2 prototype solution. The Army awarded a fixed price Other Transaction Authority (OTA) agreement to Dynetics, Inc. on 24 September, 2021 to deliver the Enduring IFPC Inc 2 prototype solution. The MTA contract will run through mid-FY 2024.

The Army plans to pursue the IFPC High Energy Laser (IFPC HEL) and IFPC High Powered Microwave (IFPC HPM) as non-kinetic effectors of the IFPC counter-RAM, counter-CM, and counter-UAS (Class 1 - 3) missions. The Army Rapid Capabilities and Critical Technologies Office (RCCTO) currently manages the IFPC HEL and IFPC HPM programs, which are planned for transfer of responsibility to the IFPC Product Office in 4th Quarter FY 2024. The IFPC Inc 2 Product Office will establish an initial IFPC Direct Energy team to coordinate the transfer of responsibility, as well as, determine IFPC Inc 2 Product Office requirements for these products starting in FY 2023. Current planning assumes the products will require additional development, integration with the AIAMD architecture, and testing.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

The IFPC Inc 2 program is a component of an integrated fires development effort that includes survivability, resiliency, and effectiveness improvements against advanced threats from near-peer adversaries. This effort includes integration with an evolving common fires mission command, common development tools and processes, and annual test and evaluation to provide data to support program assessments and progress toward closure of performance gaps.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	Project (Number/Name) EY7 / *IFPC Increment 2 - Block 1*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	Various : Various	1.148	0.422	May 2021	0.425	May 2022	0.505	Oct 2022	-		0.505	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	Various : Various	-	-		6.653		-		-		-	0.000	6.653	-
		Subtotal	1.148	0.422		7.078		0.505		-		0.505	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Interim CMD (IDDS-A) - System Dev & Interoperability External Spt	Various	Multiple Activities : Multiple Locations	-	4.475	May 2021	5.335	May 2022	-		-		-	0.000	9.810	-
Interim CMD (IDDS-A) Ctr Eng, Product Dev, & Interoperability	Various	Multiple Activities : Multiple Locations	20.883	-		-		-		-		-	0.000	20.883	-
IFPC - System Eng & Integration	Various	Multiple Activities : Multiple Locations	53.472	9.687	Jul 2021	15.030	Jun 2022	18.540	Oct 2022	-		18.540	Continuing	Continuing	Continuing
IFPC System Dev and Integration External Support	Various	Multiple Activities : Multiple Locations	45.010	19.614	May 2021	23.717	Jul 2022	37.080	Oct 2022	-		37.080	Continuing	Continuing	Continuing
IFPC Contractor Prototype Dev / Int / Mfg / Log & Test Spt	C/Various	Multiple Activities : Multiple Locations	-	104.837	Sep 2021	115.480	Apr 2022	15.570	Apr 2023	-		15.570	Continuing	Continuing	Continuing
IFPC Prototype GFE Hardware	Various	Multiple Activities : Multiple Locations	-	-		-		21.316	Apr 2023	-		21.316	0.000	21.316	-
IFPC Directed Energy Integration Support (Transition Team)	Various	Multiple Activities : Multiple Locations	-	-		-		1.245	Apr 2023	-		1.245	Continuing	Continuing	Continuing
		Subtotal	119.365	138.613		159.562		93.751		-		93.751	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	Project (Number/Name) EY7 / *IFPC Increment 2 - Block 1*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Interim CMD (IDDS-A) - Log Support	TBD	TBD : TBD	54.686	-		-		-		-		-	0.000	54.686	-
IFPC Log Support	Various	Multiple Activities : Multiple Locations	4.942	10.456	May 2021	7.225	Jul 2022	4.213	Nov 2022	-		4.213	Continuing	Continuing	-
		Subtotal	59.628	10.456		7.225		4.213		-		4.213	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Interim CMD (IDDS-A) - Operational Testing	IA	Multiple Activities : Multiple Locations	50.551	-		-		-		-		-	0.000	50.551	-
IFPC PM Testing Support	IA	Multiple Activities : Multiple Locations	1.609	2.192	Jun 2021	1.155	Jun 2022	2.501	Nov 2022	-		2.501	Continuing	Continuing	Continuing
IFPC Developmental / Operational Testing	IA	Multiple Activities : Multiple Locations	-	0.716	Apr 2021	7.237	May 2022	29.085	Nov 2022	-		29.085	Continuing	Continuing	Continuing
Integrated Fires (IF) SoS Interoperability Testing	IA	Multiple Activities : Multiple Locations	-	-		-		1.038	Mar 2023	-		1.038	Continuing	Continuing	Continuing
		Subtotal	52.160	2.908		8.392		32.624		-		32.624	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	232.301	152.399		182.257		131.093		-		131.093	Continuing	Continuing	N/A

Remarks

The Army awarded a Firm Fixed Price Other Transaction Authority (OTA) agreement to prime contractor Dynetics, Inc on 24 Sep, 2021 to develop, manufacture, and provide required test and logistics support leading to the delivery of 16 prototype IFPC systems. The agreement's structure did not clearly delineate the prototype manufacturing from the other services, so the rows detailing the breakout of these costs have been consolidated into one row under Product Development IFPC Contractor Prototype Dev / Int / Mfg / Log & Test Spt with $15.570M estimated for FY 2023 efforts.

FY 2022 IFPC Contractor Prototype Dev / Int / Mfg / Log & Test Spt funding will be awarded on two separate contracts to Dynetics, Inc and Raytheon.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

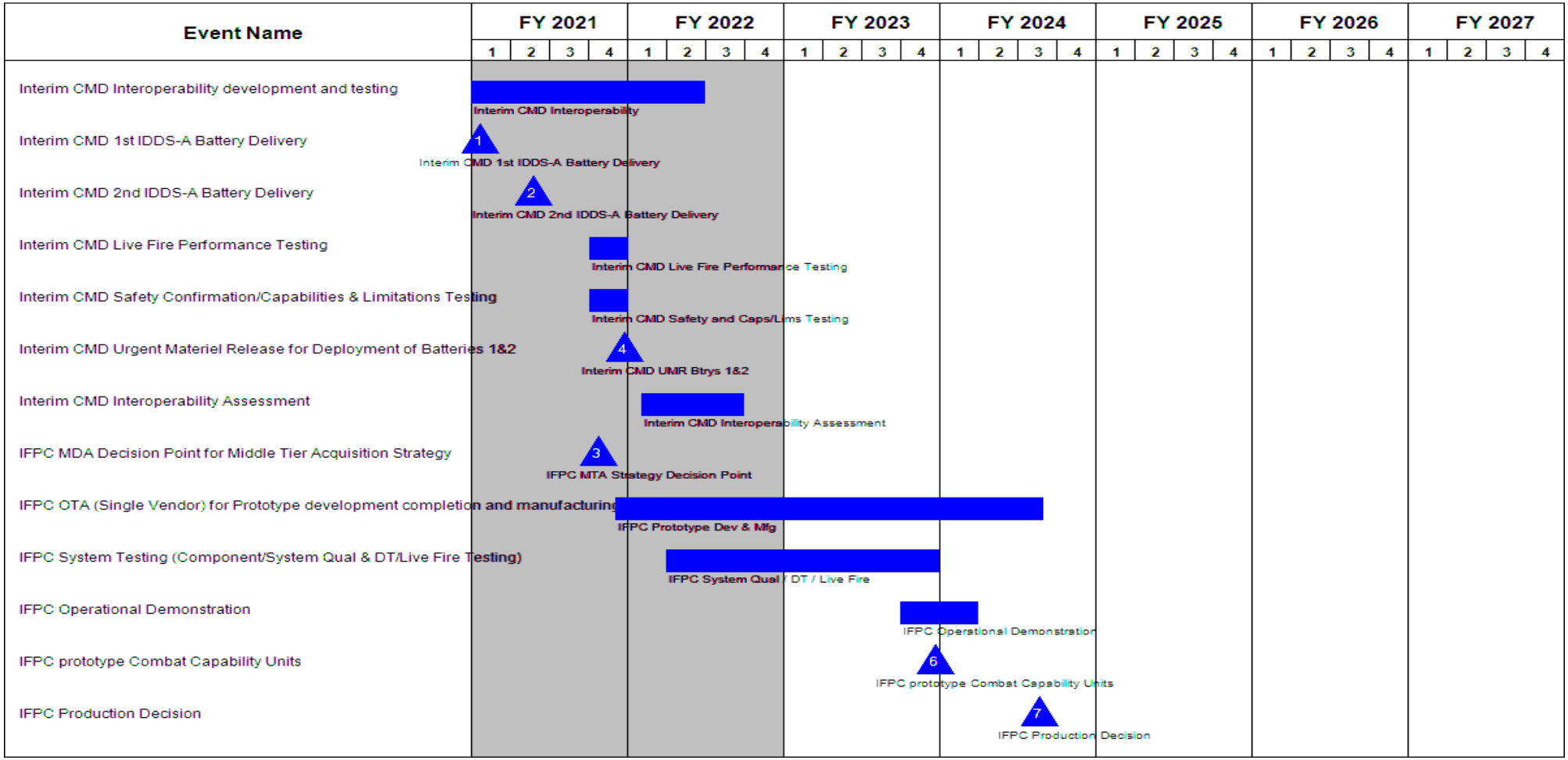


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

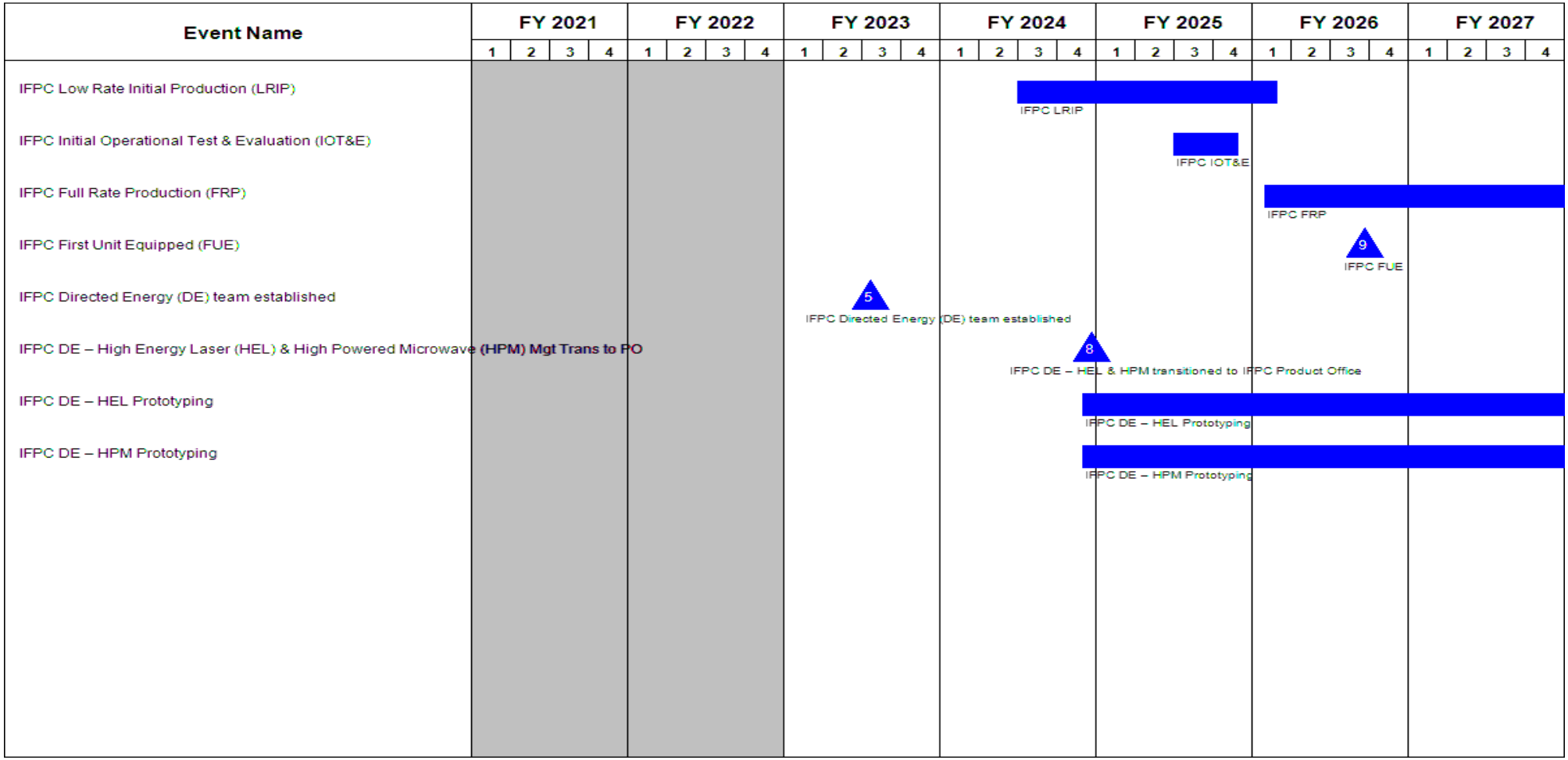


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
National Defense Authorization Act for FY2019 directed IFPC Report to Congress	1	2019	1	2019
Interim CMD Directed Requirement - Interim CMD System	2	2019	2	2019
Interim CMD Title 10, Para 2373 Contract Award for Interim Iron Dome Btrys 1&2	4	2019	4	2019
Interim CMD Capability Integration and Test Activities	1	2020	4	2020
Interim CMD Interoperability development and testing	4	2020	2	2022
Interim CMD 1st IDDS-A Battery Delivery	1	2021	1	2021
Interim CMD 2nd IDDS-A Battery Delivery	2	2021	2	2021
Interim CMD Live Fire Performance Testing	4	2021	4	2021
Interim CMD Safety Confirmation/Capabilities & Limitations Testing	4	2021	4	2021
Interim CMD Urgent Materiel Release for Deployment of Batteries 1&2	4	2021	4	2021
Interim CMD Interoperability Assessment	1	2022	3	2022
IFPC MDA Decision Point for Middle Tier Acquisition Strategy	4	2021	4	2021
IFPC OTA (Single Vendor) for Prototype development completion and manufacturing	4	2021	3	2024
IFPC System Testing (Component/System Qual & DT/Live Fire Testing)	2	2022	4	2023
IFPC Operational Demonstration	4	2023	1	2024
IFPC prototype Combat Capability Units	4	2023	4	2023
IFPC Production Decision	3	2024	3	2024
IFPC Low Rate Initial Production (LRIP)	3	2024	1	2026
IFPC Initial Operational Test & Evaluation (IOT&E)	3	2025	4	2025
IFPC Full Rate Production (FRP)	1	2026	1	2033
IFPC First Unit Equipped (FUE)	3	2026	3	2026
IFPC Directed Energy (DE) team established	3	2023	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605052A / *Indirect Fire Protection Capability Inc 2 - Block 1*	**Project (Number/Name)** EY7 / *IFPC Increment 2 - Block 1*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IFPC DE ? High Energy Laser (HEL) & High Powered Microwave (HPM) Mgt Trans to PO	4	2024	4	2024
IFPC DE ? HEL Prototyping	4	2024	4	2028
IFPC DE ? HPM Prototyping	4	2024	4	2028

Note

CMD: Cruise Missiles Defense
FUE: First Unit Equipped
FY: Fiscal Year
IFPC: Indirect Fire Protection Capability
HEL: High Energy Laser
HPM: High Powered Microwave

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	12.010	16.360	26.809	-	26.809	28.724	24.594	24.600	24.826	0.000	157.923
BS9: *Robotic Payloads*	-	-	8.531	7.643	-	7.643	-	-	-	-	0.000	16.174
FB3: *Robotics Architecture*	-	2.604	2.346	2.769	-	2.769	2.789	2.785	2.786	2.814	0.000	18.893
FB4: *Common Robotic Systems*	-	1.766	-	-	-	-	-	-	-	-	0.000	1.766
FB6: *Squad Multipurpose Equipment Transport (SMET)*	-	4.125	3.063	11.270	-	11.270	20.258	16.235	16.239	16.397	0.000	87.587
FG8: *Common Robotic Controller*	-	3.515	2.420	5.127	-	5.127	5.677	5.574	5.575	5.615	0.000	33.503

A. Mission Description and Budget Item Justification

This Program Element supports modernization of the current Ground Robotic fleets by investigating technology insertions including, but not limited to: condition based maintenance, vetronics, Robotic Architecture, autonomous operations and other emerging technologies. Funding also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

A portion of this funding line is a key enabler of the Army Modernization Priorities in support of the Universal Robotic Controller program.

BS9: The Robotic Payloads project is a suite of modular capabilities designed with open architecture to provide an increased level of standoff, situational awareness, disruption capability, and dexterity to respond to current and emergent Chemical, Biological, Radiological, and Nuclear (CBRN), Explosive Ordnance Disposal (EOD) and Engineer requirements. Current Man Transportable Robotic Systems Increment II (MTRS Inc II) and Common Robotic System - Heavy (CRS-H) system characteristics include the following: a remote controlled articulated arm with a gripper, operating range up to 800 meters, multiple illuminated cameras, a pan/tilt surveillance camera, two-way radio, and a ruggedized operator control unit. This project supports development and testing of the following capabilities: Extended Range Mesh Network (ERMN), Pan/Tilt Imager (PTI) and Obstacle Avoidance & Digital Modeling (OA&DM). The use of robotic payloads allows the first approach, to potentially explosive hazards, to be made by a robot rather than a Soldier. These multiple, modular robotic mission payloads will use open architecture to integrate with the MTRS Inc II and CRS-H platforms to form the Army's next generation platform adaptable robotics systems.

FY 2023 Base dollars in the amount of $7.643 million supports Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI) payload prototypes to include development of the necessary software updates to allow for payload to platform communications and development of integration provisions for mounting the ERMN and PTI to both the MTRS Inc II and CRS-H platforms. Additionally, FY 2023 funding supports Development and Production Prove-out Testing, logistics product analysis and verification and execution of user jury event.

FB2: The Man Transportable Robotic System (MTRS) Inc. II is the Army's Soldier transportable, remotely operated, medium size (<= 164 lbs.) common robotic system. The system utilizes both radio and tethered communications allowing dismounted Soldiers to perform hazardous missions from a safe standoff distance. The MTRS

Inc. II system consists of an Operator Control Unit (OCU), a suite of various mission payloads, and a mobility platform. Open architecture and the Ground Robotic Autonomous Systems (RAS) Interoperability Profile (IOP) requirements are employed to reduce obsolescence risks and to maximize efficiency in acquiring future capabilities. MTRS Inc. II will support current and future payload missions for the Engineer's route clearance platoons, Special Operational Forces (SOF) detachments, Chemical Biological Radiological and Nuclear (CBRN), and Explosive Ordnance Disposal (EOD) Units.

FB2 has no FY 2023 funding request.

FB3: Robotic Architecture (RA) provides the engineering and development resources to manage the overarching architecture for robotic systems that are both modular and interoperable across the Joint Force in order to facilitate future modernization efforts. It will manage the interoperability standards, modular payload interfaces, common software and common architecture for robotics & autonomous platforms, payloads & universal controllers. It will establish a Common Specifications Reference (CSR) to provide a repository codifying the Army Robotic Autonomous Systems (RAS) standards for open architecture, interoperability interfaces, common control, performance specifications and test results. RA includes the construction of program specific Interoperability Profiles (IOP) (i.e. Small Multipurpose Equipment Transport (S-MET) Inc II, Tactical Wheeled Vehicle-Leader Follower (TWV-LF), Common Robotics System (Individual) (CRS(I)) Inc. II, Enhanced Robotic Payloads (ERP), Light Reconnaissance Robot (LRR), Optionally Manned Fighting Vehicle (OMFV), Robotic Combat Vehicle (RCV), Assault Breacher Vehicle Remote Control System (ABV RCS), Advanced Reconnaissance Vehicle (ARV), Universal Robotic Controller, etc.), and new standards addressing emerging requirements and Modular Mission Payloads (MMP) (i.e. Cyber Security, new autonomous behaviors & artificial intelligence, new payloads, lethality, etc.). RA underpins the RAS Software Foundry by providing the interface standards to allow the compatibility between next generation autonomous & unmanned software products (i.e., Robotic Technology Kernel, Warfighter Machine Interface, and innovative industry software products).

FY 2023 Base dollars in the amount of $2.769 million supports the finalization of the Robotics and Autonomous Systems-Ground (RAS-G) Interoperability Profile (IOP) Version 6.0 and the maturation of IOP to a model based single source of truth to enable digital engineering. IOP V6.0 will provide the required modular open interfaces and compliance test tools for new programs including S-MET Modular Mission Payloads (MMPs), LRR, TWV-LF, OMFV, RCV, ERP, Assault Breacher Vehicle Remote Control System (ABV RCS), Advanced Reconnaissance Vehicle (ARV), Universal Robotic Controller, and robotic applique kits for manned ground systems. Additionally, FY 2023 RDTE funds will continue the development and hardening of Robotic Operating System, Military (ROS-M) software modules and ROS-M instantiation documents, and management of ROS-M registry & repository infrastructure. FY 2023 RDTE funds will also mature the Common Specification Reference (CSR) to a minimum viable product.

FB4: The Common Robotic System - Individual (CRS(I)) is the Army's small sized (<25 lbs.) Soldier back-packable, remotely operated, common robotic system. The system provides dismounted Soldiers with increased standoff capability from hazardous threats. The system consists of a Universal Robotic Controller (URC), a suite of various payloads, and an open architecture common mobility platform allowing for future capability growth. The CRS(I) will allow the operator to quickly re-configure for other various missions by adding or removing modules and/or payloads. The CRS(I) will provide interrogation, detection, confirmation, and neutralization capabilities employed to support a wide spectrum of mobility missions for current and future forces. This capability provides commanders the ability to persistently monitor the Operating Environment (OE) while protecting and sustaining the force. The CRS(I) complements the Joint Integrated Warfighting Force by providing standoff to the Warfighter during major combat, stability, and homeland security operations.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605053A *I Ground Robotics*

FB4 has no FY 2023 funding request.

FB6: Small Multipurpose Equipment Transport (S-MET) Increment I will help to reduce Soldier loads by transporting mission specific equipment, resupply equipment, and supplies required for extended operations. The S-MET will be capable of carrying the equipment currently required to support Infantry and Engineer Platoons in the Infantry Brigade Combat Team (IBCT) for a 72 hour mission without resupply. The S-MET will reduce Soldier load, increase squad mobility during combat operations and dismounted maneuvers. S-MET will have open architectures, a remote control, support casualty evacuation, power generation/offload and Modular Mission Payloads (MMP). S-MET Inc II is a follow on program that will add capability and system maturity in the areas of platform autonomy, increased cyber and electromagnetic interference hardening, ballistic protections against kinetic threats, and improved battery safety for additional transportability modes. In addition, S-MET Inc II will have added capability to integrate government furnished Modular Mission Payloads (MMPs), such as dismount radios, counter Unmanned Aerial Systems, and universal battery chargers

FY 2023 RDTE Base dollars in the amount of $11.270 million supports Increment I Technical Insertions, Engineering Change Proposals, and Modular Mission Payloads (MMP) to increase mission capabilities and address requirements in the Abbreviated Capability Development Document (A-CDD). FY 2023 RDTE funds testing and development of logistics material required to support MMP efforts. Program support to include labor, travel and miscellaneous expenses in support of these RDTE efforts will also be funded. FY 2023 also funds SMET Increment II development, prototyping, and test initiation.

The total cost of the SMET Increment I Middle Tier of Acquisition Rapid Fielding effort is $164.350 million from FY19 to FY24, including $29.345 million of RDT&E and $135.005 million of Procurement. The SMET program is fully funded across the Future Years Defense Program.

FB8: The Soldier Borne Sensor (SBS) is a small unmanned aerial vehicle. The SBS provides a near term solution to three Army War-fighting Challenges at the Infantry Squad level: develop situational understanding, conduct air-ground reconnaissance, and conduct joint combined arms maneuver. The system is simple to deploy and use to support the squad leader's decision-making process. The system allows Soldiers to obtain local situational awareness and understanding of their immediate surroundings while remaining in covered or concealed positions. Funding in this project aligns with Army's priorities in support of the National Defense Strategy. In FY 2020, this project and funding transitioned to PE: 06044827A / Soldier Systems - Warrior Dem/Val project 0604827A.FK4.

FB9: The Common Robotic System, Heavy (CRS(H)) is a modular large-sized system that provides enhanced protection to the EOD Soldier in order to support the Joint Force Commander with the ability to identify, render safe and dispose of explosive ordnance (EO) and improvised explosive devices (IEDs) in support of the Range of Military Operations (ROMO) and Home Land Defense (HLD) operations. CRS(H) will also enable EOD Soldiers to execute Defense Support of the Civil Authorities (DSCA) operations in response to requests from federal, state, local, and tribal authorities for domestic incidents, emergencies, disasters, designated law enforcement support and other activities. CRS(H) will support current and future missions for Explosive Ordnance Disposal (EOD) units.

The MTRS Standardization project provides the platforms to support integration and testing of payloads and technology for non-standard unmanned ground robotics systems used by Army Engineers, Explosive Ordnance Disposal (EOD), Chemical, Biological, Radiological, and Nuclear (CBRN) and Special Operational Forces (SOF) units. Current system characteristics include the following: a remote controlled articulated arm with a gripper, operating range up to 800 meters, multiple illuminated cameras, a pan/tilt surveillance camera, two-way radio, and a ruggedized operator control unit. The platforms provided will support development and testing of the

following capabilities: High Dexterous Manipulation System (HDMS), Multi-Spectral Image Fusion System (MIFS), and Precision Aimed Multi-shot Disruptor (PAMD). The use of robotics allows the first approach, to potentially explosive hazards, to be made by a robot rather than a Soldier.

FB9 has no FY 2023 funding request.

FG8: Universal Robotics Control (URC) will provide the common information system for all squad and above Robotic and Autonomous Systems (RAS) command and control (C2). The U.S. Army is challenged to transform the Command and Control (C2) warfighting function to execute the RAS strategy in support of Multi-Domain Operations (MDO). The Universal Robotics Control (URC) program responds to this challenge by developing and fielding a system that rapidly synchronizes effects in all domains to defeat the enemy regardless of the mission command network. The URC operates as a distributed information system designed for resilience in a high threat environment utilizing existing and planned RAS elements. URC provides soldier and machine interfaces to establish and maintain positive C2 in all phases of combat and support operations, supported by a continuously developed software ecosystem. The capabilities of a unified information system for RAS C2 at the tactical edge enables improved situational awareness, multi-domain maneuvers, and deployment of lethal and nonlethal effects. URC is a critical enabling capability for NGCV OMFV and RCV programs.

FY 2023 RDTE Base dollars in the amount of $5.127 million will be utilized for Systems Engineering and Program Management (SEPM) to develop and execute risk reduction and program maturation activities. This includes Statement of Work and System Specification preparation. FY 2023 funding will be utilized to conduct execution of a Software Acquisition Pathway pending final OPR determination of the acquisition strategy, including identification of necessary support activities for MOSA/MBSE engineering and Safety, Cyber, and other certifications that support a continuous software development and fielding effort.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	12.010	18.241	0.000	-	0.000
Current President's Budget	12.010	16.360	26.809	-	26.809
Total Adjustments	0.000	-1.881	26.809	-	26.809
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.881			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	26.809	-	26.809

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) BS9 / *Robotic Payloads*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
BS9: *Robotic Payloads*	-	-	8.531	7.643	-	7.643	-	-	-	-	0.000	16.174
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Ground Robotics - Robotic Payloads project is a suite of modular capabilities designed with open architecture to provide an increased level of standoff, situational awareness, disruption capability and dexterity to respond to current and emergent Engineer, CBRN and EOD requirements. Current Man Transportable Robotic Systems Increment II (MTRS Inc II) and Common Robotic System - Heavy (CRS-H) system characteristics include the following: a remote controlled articulated arm with a gripper, operating range up to 800 meters, multiple illuminated cameras, a pan/tilt surveillance camera, two-way radio, and a ruggedized operator control unit. This project will support development and testing of the following capabilities: Extended Range Mesh Network (ERMN), Pan/Tilt Imager (PTI) and Obstacle Avoidance & Digital Modeling (OA&DM). The use of robotic payloads allows the first approach, to potentially explosive hazards, to be made by a robot rather than a Soldier. These multiple, modular robotic mission payloads will use open architecture to integrate with the MTRS Inc II and CRS-H platforms to form the Army's next generation platform adaptable robotics systems.

FY 2023 Base dollars in the amount of $7.643 million supports Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI) payload prototypes to include development of the necessary software updates to allow for payload to platform communications and development of integration provisions for mounting the ERMN and PTI to both the MTRS Inc II and CRS-H platforms. Additionally, FY 2023 funding supports Development and Production Prove-out Testing, logistics product analysis and verification and execution of user jury event.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Prototype and Payload Development	-	4.367	0.540
Description: Development of Extended Range Mesh Network (ERMN), Pan/Tilt Imager (PTI) and Obstacle Avoidance & Digital Modeling (OA&DM) payload prototypes and payload to platform integration requirements. ***FY 2022 Plans:*** Development of Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI) payload prototypes and payload to platform integration requirements. ***FY 2023 Plans:*** FY 2023 funding will continue development of Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI) payload prototypes and payload to platform integration requirements. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decrease from FY 2022 to FY2023 due to the majority of ERMN & PTI development occurring in FY 2022.			
Title: Integration & Software Development (Platform)	-	2.941	1.300

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** BS9 / *Robotic Payloads*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Development of integration provisions for mounting the ERMN, PTI, and OA&DM to both the MTRS Inc II and CRS-H platforms. Development of the necessary software updates to allow for payload to platform communications. ***FY 2022 Plans:*** Development of integration provisions for mounting the ERMN and PTI to both the MTRS Inc II and CRS-H platforms. Development of the necessary software updates to allow for payload to platform communications. ERMN & PTI payloads will take priority over OA&DM due to technology readiness level of the OA&DM. ***FY 2023 Plans:*** FY 2023 funding will continue the development of integration provisions for mounting the Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI) to both the MTRS Inc II and CRS-H platforms. It will also continue development of the necessary software updates to allow for payload to platform communications. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decrease from FY 2022 to FY2023 due to majority of software development and integration occurring in FY 2022.			
Title: ERMN and PTI Prototypes ***FY 2023 Plans:*** Funding will purchase Extended Range Mesh Network (ERMN) and Pan/Tilt Imager (PTI) prototypes to be utilized in testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increased from FY 2022 to FY 2023 because prototypes were not a requirement in FY 2022.	-	-	0.916
Title: Testing and Evaluation ***FY 2023 Plans:*** FY 2023 funding supports testing and training of the vendor prototypes to the performance specifications requirements and safety requirements. FY 2023 funding will also fund logistics product verification and analysis and conduct a user jury where Soldiers will test prototypes prior to production decision. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increased from FY 2022 to FY2023 due to program transitioning from development into testing.	-	-	3.423
Title: Program Support ***FY 2022 Plans:*** Funding will support the Enhanced Robotic Payloads program during the prototype and development of the payloads as well as integration & software development for the platforms. ***FY 2023 Plans:***	-	0.912	1.464

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** BS9 / *Robotic Payloads*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding will continue to support the Enhanced Robotic Payloads program during the development of the prototype payloads, integration & software development for the platforms, as well as the testing and evaluation of the payloads. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increased from FY 2022 to FY2023 due to program ramping up development and testing as it prepares for MS C at the end of FY2023.			
Title: SBIR/STTR Transfer ***FY 2022 Plans:*** SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:*** SBIR/STTR Transfer	-	0.311	-
Accomplishments/Planned Programs Subtotals	-	8.531	7.643

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• FD2: *Soldier Robotics Systems*	1.872	-	0.000	-	0.000	-	-	-	-	0.000	1.872

Remarks

D. Acquisition Strategy

PdM Robotic and Autonomous Systems (RAS) is currently developing a Performance Specification (PSPEC) from the Enhanced Robotic Payloads-Unmanned Ground Systems (ERP-UGS) Capability Development Document (CDD). PdM RAS will seek out proposal from industry on capabilities to meet the PSPEC and select the best capability to be further developed, integrated into the host platforms, and test as a system in an Abbreviated Engineering Manufacturing Development (EMD) phase. After a successful EMD, a production decision will be made to enter Production and Deployment (PD) phase.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) BS9 / *Robotic Payloads*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support ERMN & PTI	MIPR	PdM RAS : Warren, MI	-	-		0.912	Nov 2021	1.464	Nov 2022	-		1.464	0.000	2.376	-
Prototype and Payload Development ERMN & PTI	SS/TBD	FLIR : Boston, MA	-	-		4.367	Jan 2022	0.540	Jan 2023	-		0.540	0.000	4.907	-
Integration & Software Development ERMN & PTI	SS/TBD	FLIR : Boston, Ma	-	-		2.941	May 2022	1.300	Jan 2023	-		1.300	0.000	4.241	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.311		-		-		-	0.000	0.311	-
		Subtotal	-	-		8.531		3.304		-		3.304	0.000	11.835	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test ERMN & PTI	MIPR	TBD : TBD	-	-		-		0.850	Jan 2023	-		0.850	0.000	0.850	-
Production Prove-Out Test ERMN & PTI	MIPR	TBD : TBD	-	-		-		1.578	Jun 2023	-		1.578	0.000	1.578	-
User Jury	MIPR	TBD : TBD	-	-		-		0.200	Aug 2023	-		0.200	0.000	0.200	-
Logistics Product Verification & Analysis	TBD	TBD : TBD	-	-		-		0.795	Jan 2023	-		0.795	0.000	0.795	-
ERMN & PTI Prototypes	SS/CPFF	TBS : TBD	-	-		-		0.916	Dec 2022	-		0.916	0.000	0.916	-
		Subtotal	-	-		-		4.339		-		4.339	0.000	4.339	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		8.531		7.643		-		7.643	0.000	16.174	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** BS9 / *Robotic Payloads*

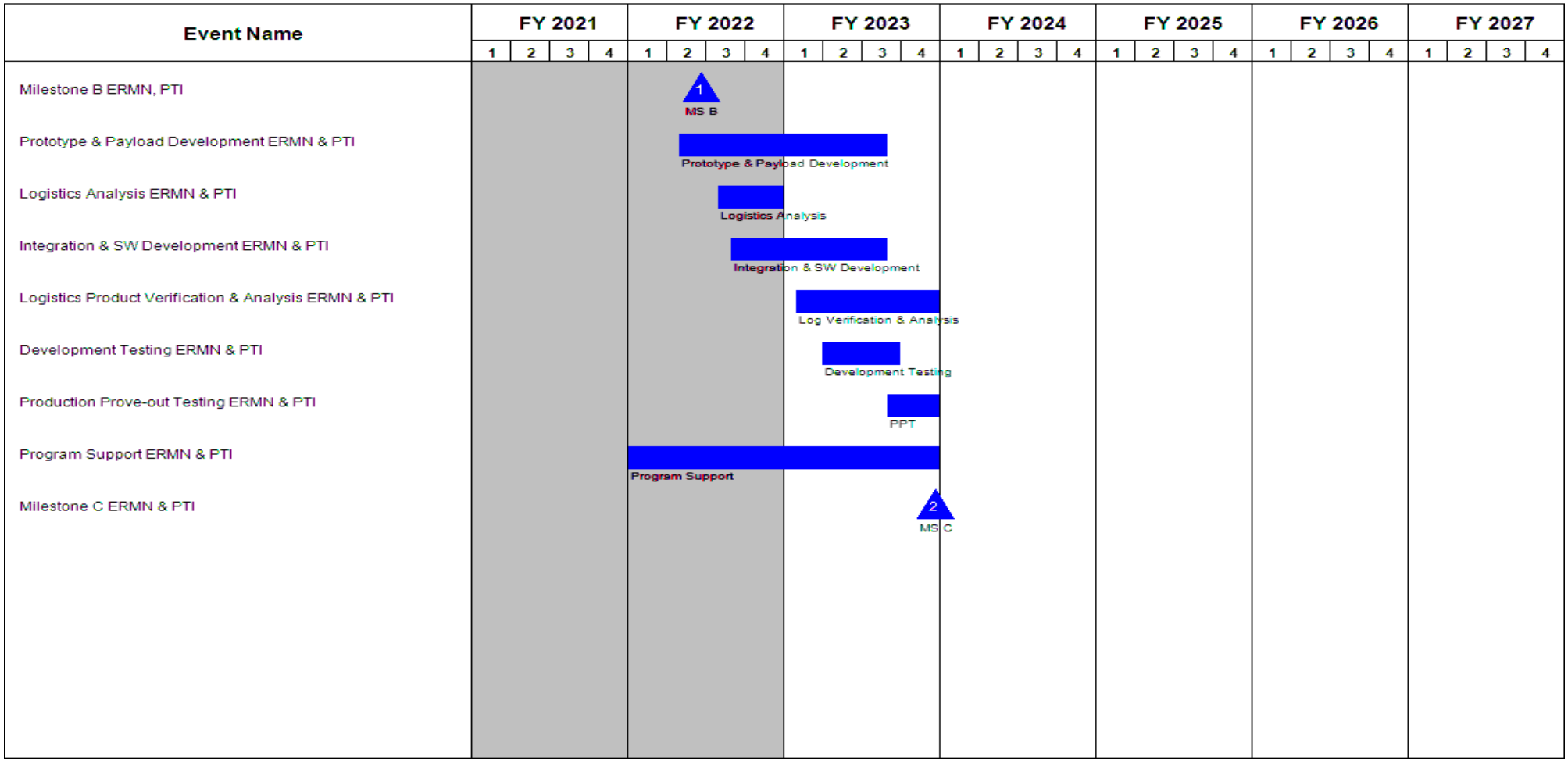


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** BS9 / *Robotic Payloads*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone B ERMN, PTI	2	2022	2	2022
Prototype & Payload Development ERMN & PTI	2	2022	3	2023
Logistics Analysis ERMN & PTI	3	2022	4	2022
Integration & SW Development ERMN & PTI	3	2022	3	2023
Logistics Product Verification & Analysis ERMN & PTI	1	2023	4	2023
Development Testing ERMN & PTI	2	2023	3	2023
Production Prove-out Testing ERMN & PTI	3	2023	4	2023
Program Support ERMN & PTI	1	2022	4	2023
Milestone C ERMN & PTI	4	2023	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB3 / *Robotics Architecture*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FB3: *Robotics Architecture*	-	2.604	2.346	2.769	-	2.769	2.789	2.785	2.786	2.814	0.000	18.893
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Robotic Architecture (RA) provides the engineering and development resources to manage the overarching architecture for robotic systems that are both modular and interoperable across the Joint Force in order to facilitate future modernization efforts. It will manage the interoperability standards, modular payload interfaces, common software and common architecture for robotics & autonomous platforms, payloads & universal controllers. It will establish a Common Specifications Reference (CSR) to provide a repository codifying the Army Robotic Autonomous Systems (RAS) standards for open architecture, interoperability interfaces, common control, performance specifications and test results. . RA includes the construction of program specific Interoperability Profiles (IOP) (i.e. Small Multipurpose Equipment Transport (S-MET) Inc II, Tactical Wheeled Vehicle-Leader Follower (TWV-LF), Common Robotics System (Heavy) (CRS(H), Common Robotics System (Individual), (CRS(I)) Inc II, Enhanced Robotic Payloads (ERP), Light Reconnaissance Robot (LRR), Optionally Manned Fighting Vehicle (OMFV), Robotic Combat (RCV) variants, robotic bridging and construction vehicles, robotic applique kits for manned ground systems, etc.), and new standards addressing emerging requirements and Modular Mission Payloads (MMP) including Cyber Security, software safety requirements from MIL-STD-882E, new autonomous behaviors & artificial intelligence, new payloads, lethality, etc. RA underpins the RAS software Foundry by providing the interface standards to allow the compatibility between next generation autonomous & unmanned software products (i.e., Robotic Technology Kernel, Warfighter Machine Interface, and innovative industry software products). The RA priority going forward will be integrating RA interfaces with the larger enterprise confluence of Software Foundry, Agile/DevSecOps & software development environments.

FY 2023 Base dollars in the amount of $2.769 million supports the finalization of the Robotics and Autonomous Systems, Ground (RAS-G) Interoperability Profile (IOP) Version 6.0 and the maturation of IOP to a model based single source of truth to enable digital engineering. IOP V6.0 will provide the required modular open interfaces and compliance test tools for new programs including S-MET Modular Mission Payloads (MMPs), LRR, CRS(H), TWV-LF, OMFV, RCV, ERP, Assault Breacher Vehicle Remote Control System (ABV RCS), Advanced Reconnaissance Vehicle (ARV), Universal Robotic Controller, and robotic applique kits for manned ground systems. Additionally, FY 2023 RDTE funds will continue the development & hardening of Robotic Operating System, Military (ROS-M) software modules and ROS-M instantiation documents, and management of ROS-M registry & repository infrastructure. FY 2023 RDTE funds will also mature the Common Specification Reference (CSR) to a minimum viable product.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Robotics Architecture	2.604	2.260	2.769
Description: Provide architecture tools and support for current Programs of Record (PoR) & new requirements to allow for interoperability within the Joint community for Robotics & Autonomous Systems.			
FY 2022 Plans: FY 2022 RDTE funds in the amount of $2.260 million supports the initial development of the Robotics and Autonomous Systems, Ground (RAS-G) Interoperability Profile (IOP) Version 6. IOP V6.0 will provide the required modular open interfaces and			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
compliance test tools for new programs including S-MET Modular Mission Payloads (MMPs), LRR, CRS(M), TWVLF, OMFV, RCV, ERP, ABV RCS, ARV, URC, and robotic applique kits for manned ground systems. Additionally, FY 2022 RDTE funds will continue the development & hardening of Robotic Operating System, Military (ROS-M) software modules and ROS-M instantiation documents, and management of ROS-M registry & repository infrastructure. FY 2022 RDTE funds will also continue the development and refinement of the Common Specification Reference (CSR). SBIR/STTR/FFRDC transfer $85,630. ***FY 2023 Plans:*** FY 2023 RDTE funds in the amount of $2.769 million supports the finalization of the Robotics and Autonomous Systems, Ground (RAS-G) Interoperability Profile (IOP) Version 6. IOP V6.0 will provide the required modular open interfaces and compliance test tools for new programs including Small Mobile Equipment Transport (S-MET) Modular Mission Payloads (MMPs), Common Robotic System Heavy (CRS(H)), Tactical Wheeled Vehicle Leader Follower (TWVLF), Optionally Manned Fighting Vehicle (OMFV), Robotic Combat Vehicle (RCV), Enhanced Robotics Payloads (ERP), Assault Breacher Vehicle Remote Control System (ABV RCS), Advanced Recon Vehicle (ARV), Universal Robotic Controller (URC), and robotic applique kits for manned ground systems. Additionally, FY 2023 RDTE funds will continue the development & hardening of Robotic Operating System, Military (ROS-M) software modules and ROS-M instantiation documents, and management of ROS-M registry & repository infrastructure. FY 2023 RDTE funds will also result in the minimum viable product of the Common Specification Reference (CSR). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 funding increased due to additional planned ROS-M capability sets to support Robotic Technology Kernel (RTK) IAW the planned Software Foundry deployment.			
Title: SBIR/STTR Transfer ***FY 2022 Plans:*** SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:*** SBIR/STTR Transfer	-	0.086	-
Accomplishments/Planned Programs Subtotals	2.604	2.346	2.769

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

In FY 2023 the Robotics Architecture line funds supporting indirect matrix personnel & related contracts to develop IOP, ROS-M, and CSR tools and supporting infrastructure. It leverages intellectual capital and products which allow for Joint interoperability and helps meet Army Program of Record cost and schedule while

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

delivering high quality products for fielding. The architecture and tools developed under this line provide enterprise wide efficiencies and are central to the Army's acquisition philosophy of a modular open system approach between the major subsystems of robotics and autonomous systems, as described throughout the Army approved Robotics & Autonomous Systems (RAS) Initial Capabilities Document (ICD), as well as its current update to support artificial intelligence.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB3 / *Robotics Architecture*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	Various : Multiple	1.818	0.002	Nov 2021	0.200	Nov 2021	-		-		-	0.000	2.020	-
SBIR/STTR transfer	TBD	TBD : TBD	-	-		0.086	Apr 2022	-		-		-	0.000	0.086	-
		Subtotal	1.818	0.002		0.286		-		-		-	0.000	2.106	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IOP V4	Various	Various : Multiple	1.471	-		-		-		-		-	0.000	1.471	-
Instantiation Tool Development	SS/CPFF	DCS : Warren, MI	0.084	-		-		0.150	May 2023	-		0.150	0.000	0.234	-
Conformance Verification Testing (CVT) Update	MIPR	GVSC : Warren, MI	0.283	-		-		0.250	Nov 2022	-		0.250	0.000	0.533	-
IOP V5 and V6 Development	SS/CPFF	Various,DCS : Warren, MI	1.053	1.010	May 2021	1.135	Jun 2022	0.350	May 2023	-		0.350	0.000	3.548	-
Robotic Operating System - Military (ROS-M)	Various	Various : Multiple	0.783	0.742	Jun 2021	0.525	May 2022	0.675	May 2023	-		0.675	0.000	2.725	-
IOP V4 Radio Interfaces Development	MIPR	NAVSEA : Washington D.C.	0.560	-		-		-		-		-	0.000	0.560	-
Instantiation Tool Development	MIPR	Various : Multiple	-	0.126	Jan 2021	-		0.150	Nov 2022	-		0.150	0.000	0.276	-
IOP Software Safety	RO	GVSC : Warren	-	0.150	Jan 2021	-		-		-		-	0.000	0.150	-
Common Specification Reference (CSR)	C/CPFF	TBD : TBD	-	-		0.400	Mar 2022	0.400	Jan 2023	-		0.400	0.000	0.800	-
Model based Systems Engineering IOP	MIPR	GVSC : Warren, MI	-	-		-		0.350	Nov 2022	-		0.350	0.000	0.350	-
		Subtotal	4.234	2.028		2.060		2.325		-		2.325	0.000	10.647	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB3 / *Robotics Architecture*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Conformance Verification Testing (CVT) Maintenance	MIPR	TARDEC : Warren, MI	0.110	0.123	Jan 2021	-		-		-		-	0.000	0.233	-
Robotic Operating System - Military (ROS-M) Infrastructure Management	MIPR	TARDEC : Warren, MI	0.134	0.150	Jan 2021	-		0.194	Jan 2023	-		0.194	0.000	0.478	-
		Subtotal	0.244	0.273		-		0.194		-		0.194	0.000	0.711	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
New IOP & ROS-M Artifacts Stress Testing	MIPR	TARDEC : Warren, MI	0.184	0.301	Apr 2021	-		-		-		-	0.000	0.485	-
CVT testing	SS/CPFF	Various, DCS : Warren, MI	-	-		-		0.250	May 2023	-		0.250	0.000	0.250	-
		Subtotal	0.184	0.301		-		0.250		-		0.250	0.000	0.735	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.480	2.604		2.346		2.769		-		2.769	0.000	14.199	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

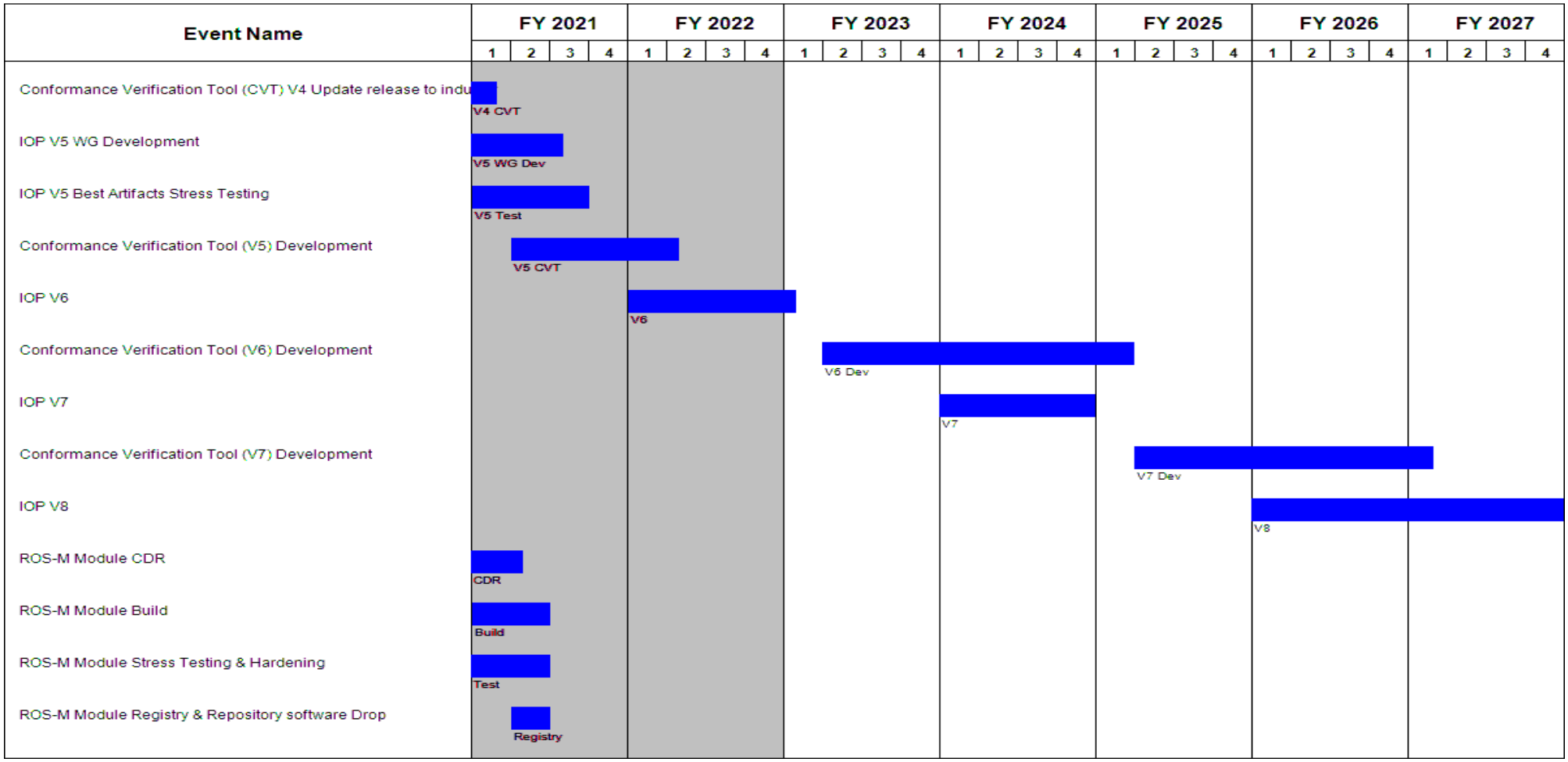


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

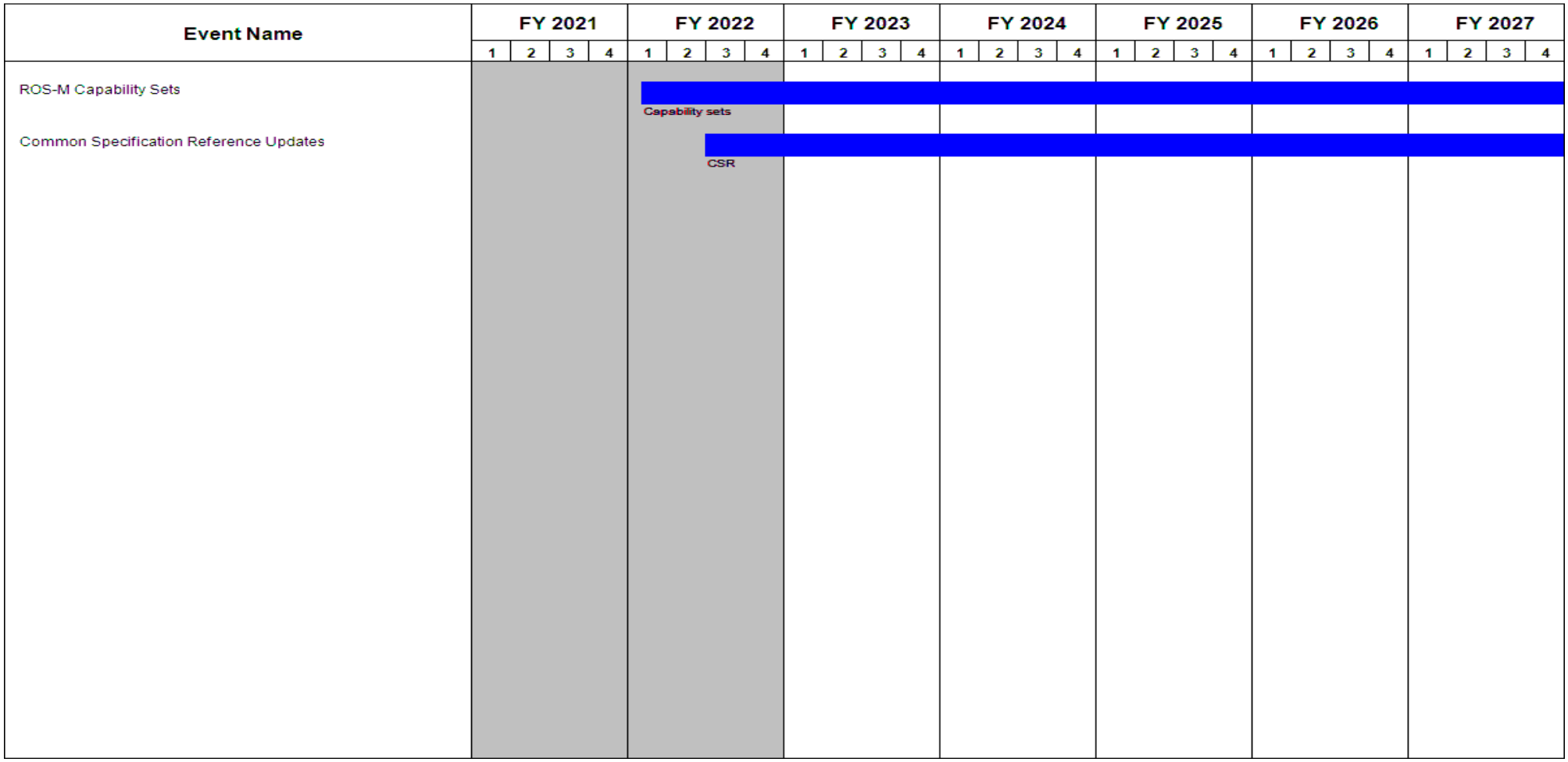


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
IOP V4 Capability Plan (CP) Development	1	2018	2	2018
IOP V4 WIPT Kickoff	3	2018	3	2018
IOP V4 WG Development	3	2018	3	2019
Conformance Verification Testing (CVT) V3 Update release to industry	1	2018	4	2018
Instantiation tool development	2	2018	4	2018
Conformance Verification Testing (CVT) V4 Development	1	2019	4	2019
Conformance Verification Tool (CVT) V4 Update release to industry	1	2020	1	2021
IOP V5 Capability Plan (CP) Development	1	2020	2	2020
IOP V5 WIPT Kickoff	3	2020	3	2020
IOP V5 WG Development	3	2020	3	2021
IOP V5 Best Artifacts Stress Testing	1	2021	3	2021
Conformance Verification Tool (V5) Development	2	2021	2	2022
IOP V6	1	2022	1	2023
Conformance Verification Tool (V6) Development	2	2023	1	2025
IOP V7	1	2024	4	2024
Conformance Verification Tool (V7) Development	2	2025	1	2027
IOP V8	1	2026	4	2027
ROS-M Module SRR	3	2020	3	2020
ROS-M Module PDR	4	2020	4	2020
ROS-M Module CDR	1	2021	1	2021
ROS-M Module Build	1	2021	2	2021
ROS-M Module Stress Testing & Hardening	4	2020	2	2021
ROS-M Module Registry & Repository software Drop	2	2021	2	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB3 / *Robotics Architecture*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ROS-M Capability Sets	1	2022	4	2027
Common Specification Reference Updates	3	2022	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB4 / *Common Robotic Systems*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FB4: *Common Robotic Systems*	-	1.766	-	-	-	-	-	-	-	-	0.000	1.766
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Common Robotic System - Individual (CRS(I)) is the Army's small sized (<25 lbs.) Soldier back-packable, remotely operated, Common Robotic System. The system provides dismounted Soldiers with increased standoff capability from hazardous threats. The system consists of a Universal Robotic Controller (URC), a suite of various payloads, and an open architecture common mobility platform allowing for future capability growth. The CRS(I) will allow the operator to quickly re-configure for other various missions by adding or removing modules and/or payloads. The CRS(I) will provide interrogation, detection, confirmation, and neutralization capabilities employed to support a wide spectrum of mobility missions for current and future forces. This capability provides commanders the ability to persistently monitor the Operating Environment (OE) while protecting and sustaining the force. The CRS(I) complements the Joint Integrated War-fighting Force by providing standoff to the Warfighter during major combat, stability, and homeland security operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: CRS(I) PQT and LUT execution ***Description:*** ATEC costs to execute Production Qualification Test (PQT) and Limited User Test (LUT).	0.265	-	-
Title: CRS(I) Log manuals ***Description:*** CRS(I) RDTE funding for contractor to complete development of Operator and Maintainer Technical Manuals.	0.400	-	-
Title: CRS(I) TARDEC Software Support ***Description:*** CRS(I) RDTE funding to support the following Engineering services to include software subject matter expert support, testing support, issue remediation, and transitioning platform software lead to the software sustainment agency.	0.416	-	-
Title: CRS(I) Engineering Change Proposals (ECPs) Development, Testing and Validation and Modification Work Orders ***Description:*** Changes to proposed configuration after baseline performance established at initial PQT.	0.685	-	-
Accomplishments/Planned Programs Subtotals	1.766	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• G99595: *Common Robotic System-Individual (CRS-I)*	1.154	1.141	0.000	-	0.000	-	-	-	-	0.000	2.295

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB4 / *Common Robotic Systems*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• G93696: *Common Robotic System - Individual (CRS-I)*	52.528	12.625	0.000	-	0.000	-	-	-	-	0.000	65.153

Remarks

D. Acquisition Strategy

The CRS(I) competitive Firm Fixed Price (FFP) contract was awarded to a single contractor in March 2019 for the CRS (I) Low Rate Initial Production (LRIP) phase. This phase includes Full Materiel Release (FMR) (FY 2021) and Full Rate Production (FRP) (FY 2021).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB4 / *Common Robotic Systems*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	Combat Support - Combat Service Support : Warren MI	0.505	0.006	Oct 2020	-		-		-		-	0.000	0.511	-
Mission suppport - SETA contract	TBD	AMENTUM SERVICES, INC : GERMANTOWN, MD	-	0.257		-		-		-		-	0.000	0.257	-
		Subtotal	0.505	0.263		-		-		-		-	0.000	0.768	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Log manuals	C/CPFF	Multiple : Various	0.260	0.372	May 2021	-		-		-		-	0.000	0.632	-
		Subtotal	0.260	0.372		-		-		-		-	0.000	0.632	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Production Qualification Testing (PQT) & Limited User Testing (LUT)	Various	Aberdeen Test Center : Aberdeen MD	2.788	0.110	Feb 2021	-		-		-		-	0.000	2.898	-
TARDEC software support	Various	TARDEC : Warren, MI	0.370	0.510	Jan 2021	-		-		-		-	0.000	0.880	-
NIWC software support	Various	SPAWAR : San Diego, CA	0.230	-		-		-		-		-	0.000	0.230	-
ECP/MWO Development Testing and Validation	C/CPFF	Qinetiq North America : Waltham, MA	0.038	0.157	Jun 2021	-		-		-		-	0.000	0.195	-
Testing	TBD	Aberdeen Test Center : Aberdeen, MD	-	0.354		-		-		-		-	0.000	0.354	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB4 / *Common Robotic Systems*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			3.426	1.131		-		-		-		-	0.000	4.557	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.191	1.766		-		-		-		-	0.000	5.957	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB4 / *Common Robotic Systems*

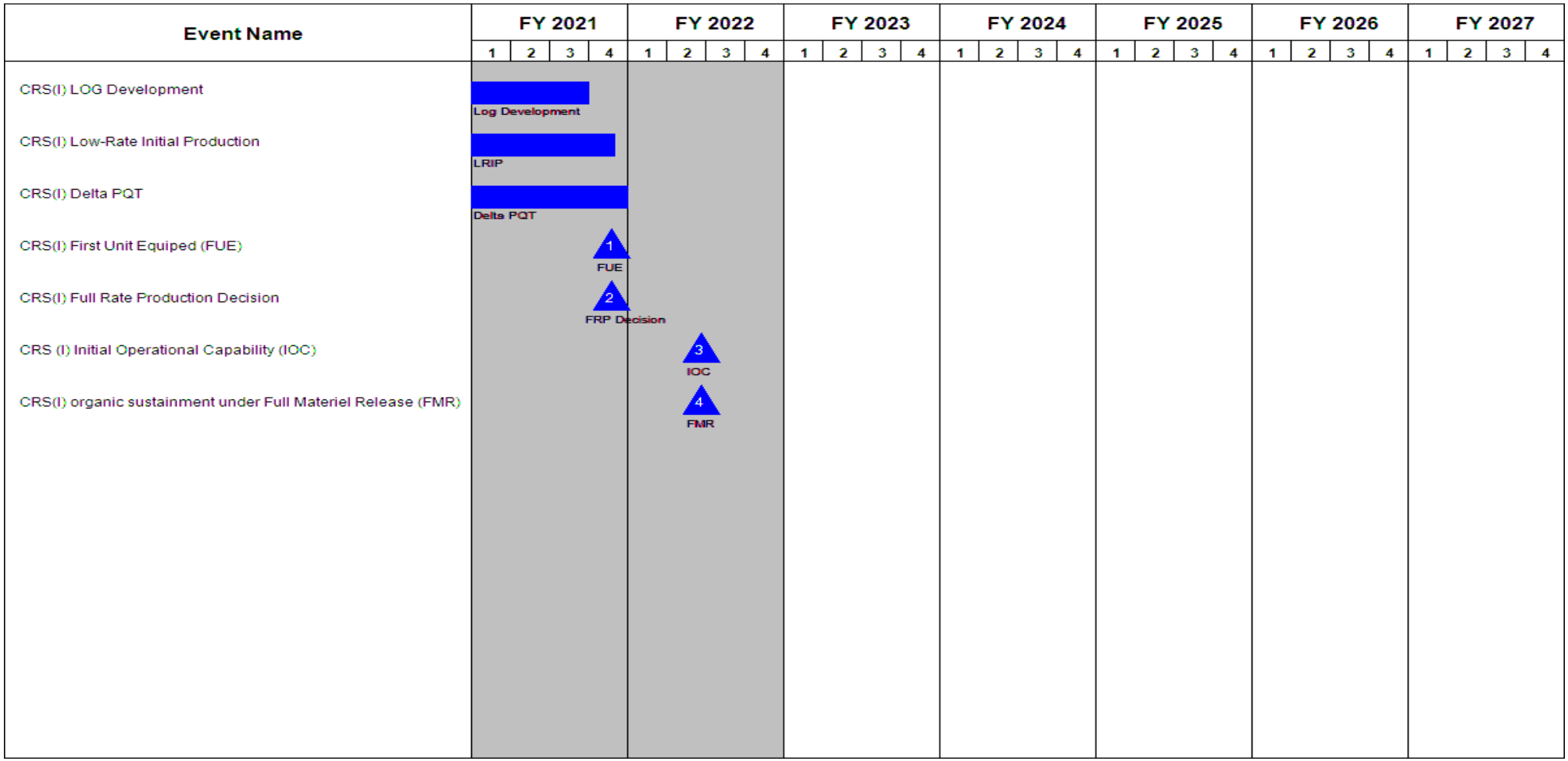


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB4 / *Common Robotic Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CRS(I) Milestone B	2	2018	2	2018
CRS(I) Contract Award	2	2018	2	2018
CRS(I) LOG Development	3	2018	3	2021
CRS(I) Critical Design Review (CDR) (x2)	3	2018	3	2018
CRS(I) Run-off	1	2019	1	2019
CRS(I) Post-CDR Design/Competitive Downselection (to one vendor)	1	2019	2	2019
CRS(I) Milestone C	2	2019	2	2019
CRS(I) Low-Rate Initial Production	2	2019	4	2021
CRS(I) Production Qualification Testing (PQT)/Limited User Testing (LUT)	3	2019	1	2020
CRS(I) Authority to Operate (ATO)	3	2020	3	2020
CRS(I) Delta PQT	3	2020	4	2021
CRS(I) First Unit Equiped (FUE)	4	2021	4	2021
CRS(I) Full Rate Production Decision	4	2021	4	2021
CRS (I) Initial Operational Capability (IOC)	2	2022	2	2022
CRS(I) organic sustainment under Full Materiel Release (FMR)	2	2022	2	2022

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB6 / *Squad Multipurpose Equipment Transport (SMET)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FB6: *Squad Multipurpose Equipment Transport (SMET)*	-	4.125	3.063	11.270	-	11.270	20.258	16.235	16.239	16.397	0.000	87.587
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The total cost of the SMET Increment I Middle Tier of Acquisition Rapid Fielding effort is $164.350 million from FY19 to FY24, including $29.345 million of RDT&E and $135.005 million of Procurement. The SMET program is fully funded across the Future Years Defense Program.

Small Multipurpose Equipment Transport (S-MET) will help to reduce Soldier loads by transporting mission specific equipment, resupply equipment, and supplies required for extended operations. The S-MET will be capable of carrying the equipment currently required to support Infantry and Engineer Platoons in the Infantry Brigade Combat Team (IBCT) for a 72 hour mission without resupply. The S-MET will reduce Soldier load, increase squad mobility during combat operations and dismounted maneuvers. S-MET will have open architectures, a remote control and support casualty evacuation, power generation/offload and reintegration of Modular Mission Payloads (MMP) and technical insertions.

FY 2023 RDTE Base dollars in the amount of $11.270 million supports Increment I Technical Insertions, Engineering Change Proposals, and Modular Mission Payloads (MMP) to increase mission capabilities and address requirements in the Abbreviated Capability Development Document (A-CDD). FY 2023 RDTE funds testing and development of logistics material required to support MMP efforts. Program support to include labor, travel and miscellaneous expenses in support of these RDTE efforts will also be funded. FY 2023 also funds the start of SMET Increment II development, prototyping, and test initiation. S-MET Inc II is a follow on program that will add capability and system maturity in the areas of platform autonomy, increased cyber and electromagnetic interference hardening, ballistic protections against kinetic threats, and improved battery safety for additional transportability modes. In addition, S-MET Inc II will have added capability to integrate government furnished Modular Mission Payloads (MMPs), such as dismount radios, counter Unmanned Aerial Systems, and universal battery chargers.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: S-MET	4.125	2.951	6.700
Description: Small Multipurpose Equipment Transport (S-MET) Increment I			
FY 2022 Plans: FY 2022 RDTE funding in the amount of $2.951 million supports the development, integration, and procurement of Technical Insertions, Engineering Change Proposals, and Modular Mission Payloads (MMP) to increase mission capabilities and address requirements in the Abbreviated Capability Development Document (A-CDD). FY2022 RDTE funds testing and development of			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
logistics material required to support MMP efforts. Program support to include labor, travel and miscellaneous expenses in support of these RDTE efforts will also be funded. ***FY 2023 Plans:*** FY 2023 RDTE Base dollars in the amount of $6.700 million continues to support Increment I Technical Insertions, Engineering Change Proposals, and Modular Mission Payloads (MMP) to increase mission capabilities and address requirements in the Abbreviated Capability Development Document (A-CDD). FY 2023 RDTE funds will also to continue to fund testing and development of logistics material required to support MMP efforts. Program support to include labor, travel and miscellaneous expenses in support of these RDTE efforts will also be funded. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 increase due to the increase in technical insertion efforts			
Title: S-MET Inc II ***Description:*** Small Multipurpose Equipment Transport (S-MET) Increment II ***FY 2023 Plans:*** FY 2023 funds SMET Increment II development, prototyping, and test initiation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 increase due to the start of the development and prototyping phase for Inc II version of the S-MET	-	-	4.570
Title: SBIR / STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	0.112	-
Accomplishments/Planned Programs Subtotals	4.125	3.063	11.270

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• R12154: *Squad Multipurpose Equipment Transport (SMET)*	28.555	24.448	29.709	-	29.709	46.787	91.912	84.357	66.456	0.000	372.224

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

It is the Army's intent to maximize the use of an Open Systems Architecture (OSA), as well as the approved Unmanned Ground Vehicle (UGV) interoperability profiles (IOP) for Small Multipurpose Equipment Transport (S-MET). Data collected up to and during the Phase III Production Effort will be utilized to reduce development efforts and provide cost savings for future technical insertions, Engineering Change Proposals (ECP), and Modular Mission Payloads (MMP) into the Program of Record. Throughout the life of the program, the Army will continue to survey the marketplace to identify opportunities for technology insertions and required Modular Mission Payloads (MMP), relying on competition to drive down costs.

Small Multipurpose Equipment Transport (S-MET) increment II will be a competitive acquisition to include competitive prototyping of up to two candidate systems. The prototyping phase will include the delivery of prototype systems, safety and performance testing, and further development and integration of Modular Mission Payloads (MMP). Upon completion of test, the government will then down select to one system representing the best value to the government and transition to a Program of Record (POR) and into production and deployment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FB6 / *Squad Multipurpose Equipment Transport (SMET)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Costs	MIPR	PM FP : Warren, MI	4.045	1.577	Oct 2020	1.463	Oct 2021	1.875	Oct 2022	-		1.875	0.000	8.960	-
SBIR / STTR Transfer	TBD	Varoius : Various112	-	-		0.112		-		-		-	0.000	0.112	-
		Subtotal	4.045	1.577		1.575		1.875		-		1.875	0.000	9.072	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Directed Requirement Technology Demonstration	C/FFP	Year Long Excursion : TBD	12.528	-		-		-		-		-	0.000	12.528	-
Increment II Prototype Development Phase	C/FFP	Year Long Excursion : TBD	-	-		-		4.570	Oct 2022	-		4.570	0.000	4.570	-
Technical Insertions	C/FFP	TBD : TBD	3.162	1.137	Feb 2021	0.150	Feb 2022	3.325	Feb 2023	-		3.325	0.000	7.774	-
Modular Mission Payloads (MMP)	MIPR	Ft Benning : Ft Benning, GA	1.262	0.239	Nov 2020	1.038	Jan 2022	0.500	Jan 2023	-		0.500	0.000	3.039	-
Test / Logistic Assets	SS/FFP	General Dynamic Land Systems : London, ON	-	0.857	Jan 2021	-		-		-		-	0.000	0.857	-
		Subtotal	16.952	2.233		1.188		8.395		-		8.395	0.000	28.768	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cyber / Integration	MIPR	TBD : TBD	2.962	-		0.050	Oct 2021	-		-		-	0.000	3.012	-
DOTMLPF Support / Analysis	MIPR	TBD : TBD	-	-		0.050	May 2022	-		-		-	0.000	0.050	-
		Subtotal	2.962	-		0.100		-		-		-	0.000	3.062	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATEC Test Support	MIPR	Army Test Engineering Center : Various	6.264	0.315	Nov 2020	0.200	Nov 2021	1.000	Nov 2022	-		1.000	0.000	7.779	-
Air Drop Testing	MIPR	NATICK : Various	1.162	-		-		-		-		-	0.000	1.162	-
		Subtotal	7.426	0.315		0.200		1.000		-		1.000	0.000	8.941	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.385	4.125		3.063		11.270		-		11.270	0.000	49.843	N/A

Remarks

The FY 2023 request includes $6.700 million for the Small Multipurpose Equipment Transport Increment I Middle Tier Acquisition (MTA).

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

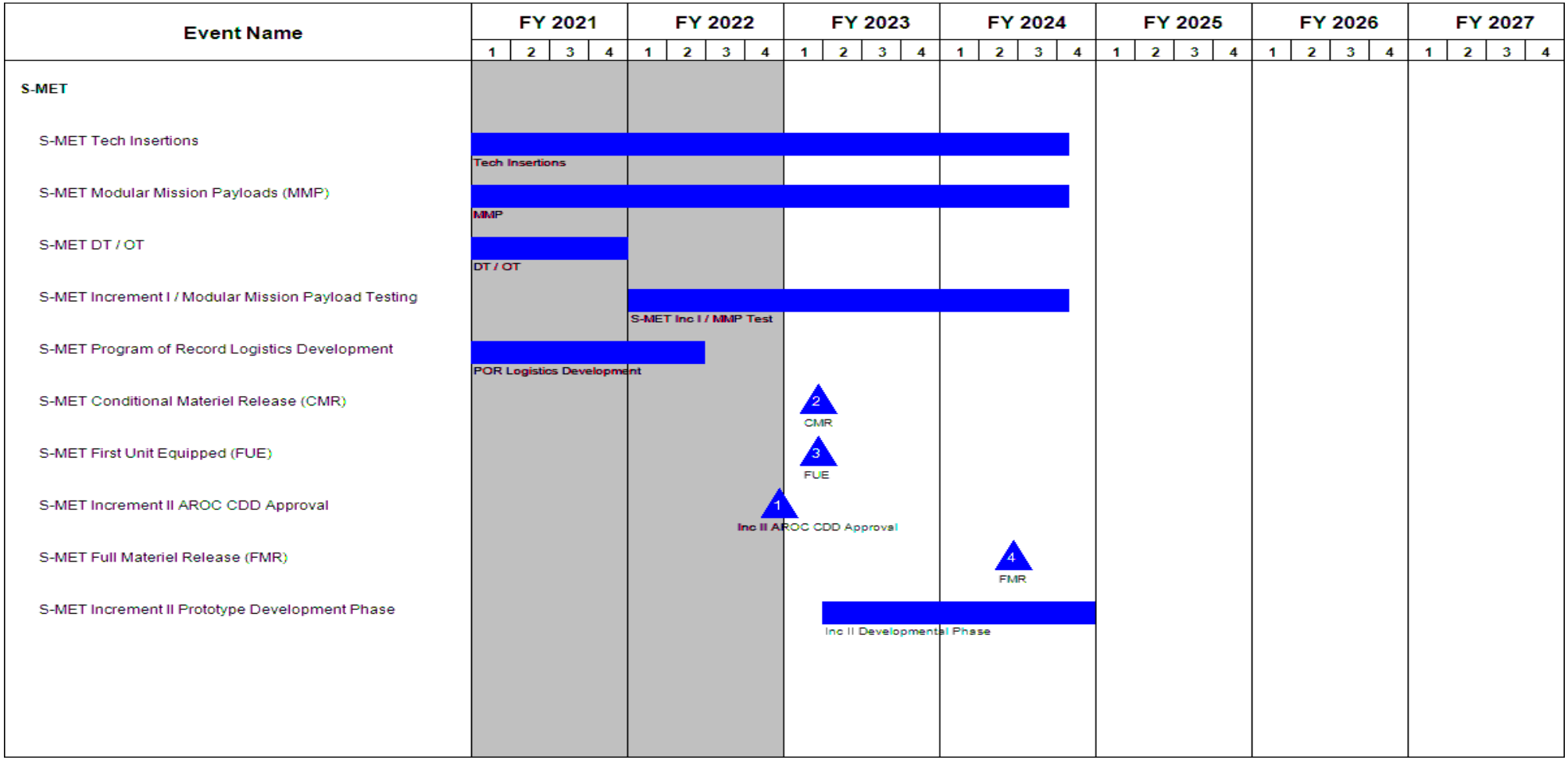


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FB6 / *Squad Multipurpose Equipment Transport (SMET)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
S-MET	1	2018	4	2022
S-MET Tech Insertions	3	2018	4	2024
S-MET Modular Mission Payloads (MMP)	2	2019	4	2024
S-MET DT / OT	4	2018	4	2021
S-MET Increment I / Modular Mission Payload Testing	1	2022	4	2024
S-MET Phase II Logistics Development	3	2018	3	2019
S-MET Technology Demo	1	2019	3	2019
S-MET MMP Assessment	3	2019	3	2019
S-MET 804 MTA Approval	4	2019	4	2019
S-MET Production Award	4	2020	4	2020
S-MET Program of Record Logistics Development	4	2020	2	2022
S-MET Conditional Materiel Release (CMR)	1	2023	1	2023
S-MET First Unit Equipped (FUE)	1	2023	1	2023
S-MET Increment II AROC CDD Approval	4	2022	4	2022
S-MET Full Materiel Release (FMR)	2	2024	2	2024
S-MET Increment II Prototype Development Phase	2	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FG8 / *Common Robotic Controller*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FG8: *Common Robotic Controller*	-	3.515	2.420	5.127	-	5.127	5.677	5.574	5.575	5.615	0.000	33.503
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Universal Robotics Control provides Robotics and Autonomous Systems (RAS) Command and Control (C2) for Multi-domain Operations (MDO) at Battalion and Below. URC rapidly synchronizes RAS maneuvers, sensors, and effects across all domains in a common information system. URC software provides soldier and machine interfaces for Artificial Intelligence-enabled C2 in all phases of combat and support operations. URC operates in denied environments regardless of mission command network, integrating all existing and planned RAS platforms and payloads, and aligns to adjacent C2 programs using a Modular Open Systems Approach (MOSA). URC is deployable in the Common Operating Environment (COE) and integrates RAS into the Common Operating Picture (COP). URC dynamically initializes, configures, and hands off control of RAS in both human-in-the-loop and human-on-the-loop scenarios, reducing the number of operators needed. URC supports a variety of human-machine interface (HMI) modalities to ensure that requirements for readiness, persistence, and resilience are met and maximize the soldier's ability to fight. The capabilities of a unified information system for RAS C2 at the tactical edge improves situational awareness, lowers the soldier's cognitive load, enables multi-domain maneuvers and deployment of lethal and nonlethal effects. URC is an enabling capability for Army modernization priorities and bridges Operational C2 capabilities to the tactical edge.

FY 2023 RDTE funding in the amount of $5.127 million will be utilized for Systems Engineering and Program Management (SEPM), risk reduction, and program maturation. This effort will develop and execute risk reduction and program maturation activities. This includes the personnel for preparation of the necessary acquisition strategy, plans, costing, specifications, and supporting documentation for the scheduled FY 2024 year of execution. FY23 funding will be utilized to conduct execution of a Software Acquisition Pathway pending final OPR determination of the acquisition strategy, including identification of necessary support activities for MOSA/MBSE engineering and safety, cyber, interoperability, and other certifications that support a continuous software development and fielding effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: URC improves Soldier situational awareness while reducing cognitive load on Soldiers and the robotics portfolio logistics footprint	3.515	2.332	5.127
Description: The Universal Robotics Control (URC) information system improves situational awareness, multi-domain maneuvers, and deployment of lethal and nonlethal effects utilizing the entire Robotics and Autonomous Systems (RAS) portfolio. FY22 Provided continuity to Prototype and Data Analysis Framework which further shaped the acquisition strategy. The Universal Robotics Control (URC) demonstrates the capability to coordinate multiple operators and concurrently control multiple Robotics and Autonomous Systems (RAS) that operate on a heterogenous network using a unified information system. The controlled RAS may be mobile or stationary and may include modular mission payloads on controlled and non-controlled platforms. URC will be capable of dynamic initialization, configuration, and handoff of the RAS elements and network, reducing			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
the burden to and number of operators required for control. The URC is executing in coordination with a multi-domain hardware controller acquisition strategy to ensure that the physical units meet all requirements for the RAS concept of operations, whether mounted or dismounted, and support a variety of human-machine interface (HMI) modalities to ensure that unit and soldier requirements for readiness, persistence, and resilience are met and maximize the soldier?s ability to fight. ***FY 2022 Plans:*** FY 2022 RDTE funding in the amount of $2.420 million will be utilized for Systems Engineering and Program Management (SEPM) support in preparing the Contracts Requirements Package (CRP) for URC. This includes Statement of Work and System Specification preparation, as well as follow up from the FY22 prototype/demonstration and analysis to further shape the acquisition strategy. FY22 funding will also be utilized for risk reduction activities to include using a government or contractor provider to further enhance the prototype product and inform the CRP process. ***FY 2023 Plans:*** FY 2023 RDTE funding in the amount of $5.127 million will be utilized for Systems Engineering and Program Management (SEPM), risk reduction, and program maturation. This effort will develop and execute risk reduction and program maturation activities. This includes the personnel for preparation of the necessary acquisition strategy, plans, costing, specifications, and supporting documentation for the scheduled FY 2024 year of execution. FY23 funding will be utilized to conduct execution of a Software Acquisition Pathway pending final OPR determination of the acquisition strategy, including identification of necessary support activities for MOSA/MBSE engineering and safety, cyber, interoperability, and other certifications that support a continuous software development and fielding effort. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increased funding builds the team to support, develop, and execute risk reduction and program maturation activities.			
Title: SBIR/STTR Transfer ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	0.088	-
Accomplishments/Planned Programs Subtotals	3.515	2.420	5.127

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• G99595: *Common Robotic System-Individual (CRS-I)*	1.154	1.141	0.000	-	0.000	-	-	-	-	0.000	2.295

Remarks

D. Acquisition Strategy

Recommended Software Acquisition Pathway pending final determination of the OPR.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FG8 / *Common Robotic Controller*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management support	C/TBD	Various : Multiple	0.724	1.658	Mar 2021	1.602	Jun 2022	0.520	Nov 2022	-		0.520	0.000	4.504	-
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.088		-		-		-	0.000	0.088	-
		Subtotal	0.724	1.658		1.690		0.520		-		0.520	0.000	4.592	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Manufacturing & Development	C/CPFF	TBD : TBD	0.517	-		-		-		-		-	0.000	0.517	-
Software support	Various	Various : Various	1.284	-		-		-		-		-	0.000	1.284	-
Prototyping	TBD	Various : Multiple	-	1.765	Mar 2021	-		-		-		-	0.000	1.765	-
Risk Reduction/ Engineering Studies	TBD	TBS : TBD	-	-		0.730	Jun 2022	4.607	Feb 2023	-		4.607	0.000	5.337	-
		Subtotal	1.801	1.765		0.730		4.607		-		4.607	0.000	8.903	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Log Manuals	Various	Various : Multiple	0.738	-		-		-		-		-	0.000	0.738	-
		Subtotal	0.738	-		-		-		-		-	0.000	0.738	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor PQT	Various	Endeavor & QinetiQ : Massachusetts	0.660	-		-		-		-		-	0.000	0.660	-
Analysis of Alternatives	TBD	TBS : TBD	0.083	0.092	Mar 2021	-		-		-		-	0.000	0.175	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605053A / *Ground Robotics*	Project (Number/Name) FG8 / *Common Robotic Controller*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.743	0.092		-		-		-		-	0.000	0.835	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.006	3.515		2.420		5.127		-		5.127	0.000	15.068	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

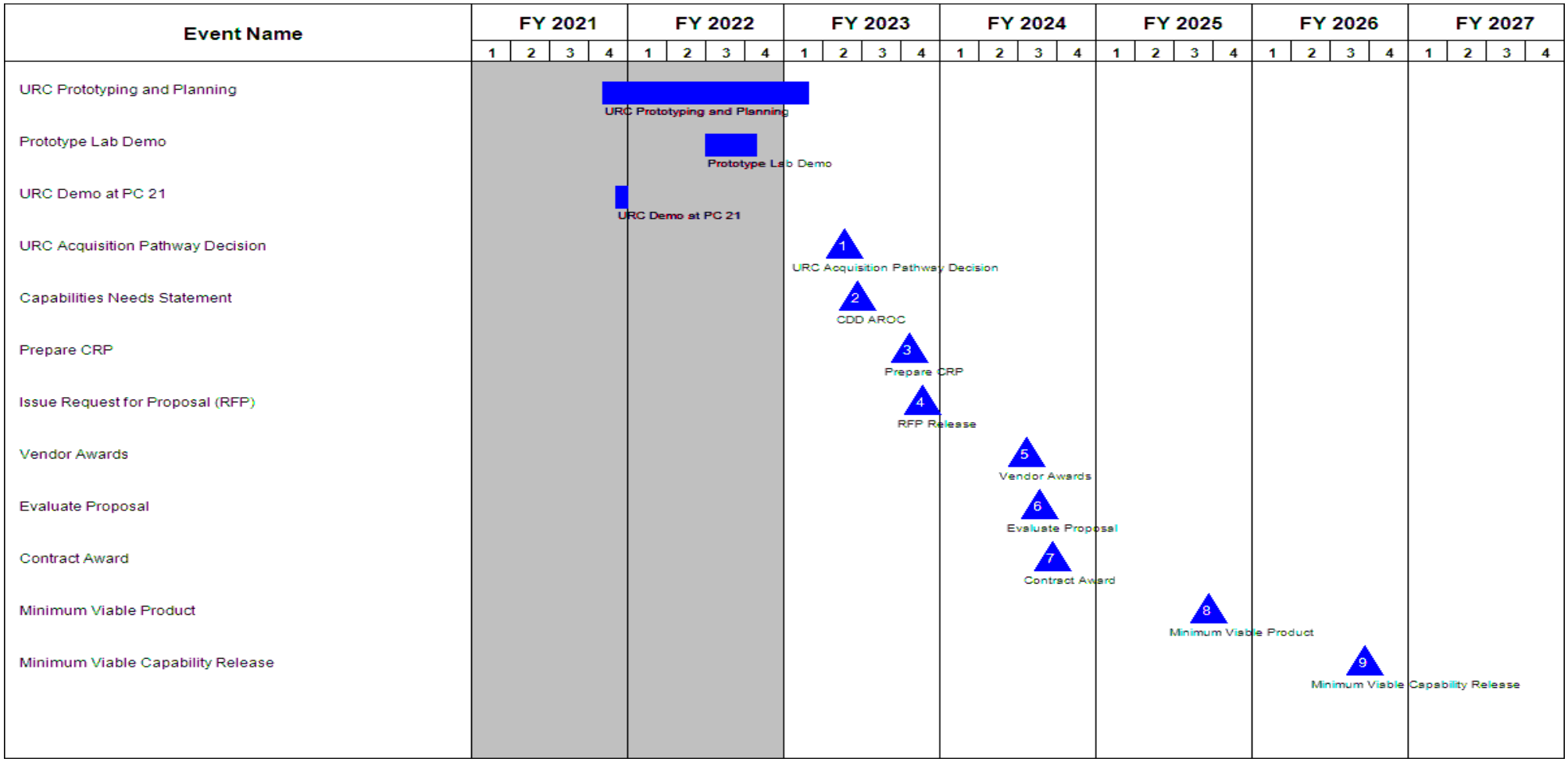


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605053A / *Ground Robotics*	**Project (Number/Name)** FG8 / *Common Robotic Controller*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
URC Prototyping and Planning	4	2021	1	2023
Prototype Lab Demo	3	2022	4	2022
URC Demo at PC 21	4	2021	4	2021
URC Acquisition Pathway Decision	2	2023	2	2023
Capabilities Needs Statement	2	2023	2	2023
Prepare CRP	4	2023	4	2023
Issue Request for Proposal (RFP)	4	2023	4	2023
Vendor Awards	3	2024	3	2024
Evaluate Proposal	3	2024	3	2024
Contract Award	3	2024	3	2024
Minimum Viable Product	3	2025	3	2025
Minimum Viable Capability Release	3	2026	3	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605054A / *Emerging Technology Initiatives*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	294.366	226.802	185.311	-	185.311	75.157	74.875	74.957	75.973	0.000	1,007.441
FI3: *Rapid Capability Development and Maturation*	-	283.811	215.468	172.779	-	172.779	62.297	61.746	61.551	62.287	0.000	919.939
FL7: *Rapid Capability Support*	-	10.555	11.334	12.532	-	12.532	12.860	13.129	13.406	13.686	0.000	87.502

A. Mission Description and Budget Item Justification

A portion of this funding line is directly aligned to the Air & Missile Defense (AMD) Army Modernization Priority. Emerging Technology Initiatives funds prototyping and demonstration of selected technology enabled capabilities to defeat emerging threats against ground, aviation, command, control, communications & reconnaissance systems and equipment, precision weapons, and Soldier equipment. Funding facilitates maturation and demonstration of emerging technologies and systems in relevant varied environments and tactical/operational scenarios. The primary goal is to deliver experimental prototypes for residual combat capability through a collaborative and accelerated acquisition process for transition to a Program of Record in an Army or DoD Program Management Office. Technologies will be demonstrated in operational environments, performing tactical/operational scenarios. This Program Element also funds civilian personnel in support of these projects.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	294.366	254.945	0.000	-	0.000
Current President's Budget	294.366	226.802	185.311	-	185.311
Total Adjustments	0.000	-28.143	185.311	-	185.311
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-37.642			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	185.311	-	185.311
• FFRDC Transfer	-	-0.501	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: FI3: *Rapid Capability Development and Maturation*		
Congressional Add: *Program increase - Counter-Unmanned Aerial Systems directed energy prototype*	10.000	-
Congressional Add: *Program Increase: Counter-Unmanned Aerial System Integration with Robotic Vehicles*	-	5.000
Congressional Add: *Program Increase: High Energy Laser Targeting System*	-	5.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Congressional Add Subtotals for Project: FI3	10.000	10.000
Congressional Add Totals for all Projects	10.000	10.000

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605054A / *Emerging Technology Initiatives*	Project (Number/Name) FI3 / *Rapid Capability Development and Maturation*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FI3: *Rapid Capability Development and Maturation*	-	283.811	215.468	172.779	-	172.779	62.297	61.746	61.551	62.287	0.000	919.939
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Air and Missile Defense Modernization Priority.

This project funds high-priority, threat-based projects with the intent to deliver an operationally effective capability in the near- and mid-terms. Efforts will include accelerated materiel development and prototyping based on anticipated and emerging threats and opportunities. Efforts include development, acquisition, assessment, maturation, and transition of prototype technologies to acquisition programs. Efforts include Directed Energy; Long Range Precision Fires; Air and Missile Defense; Cyber; Artificial Intelligence; Signals Intelligence (SIGINT); Unmanned Aerial Systems (UAS) and Counter UAS (C-UAS); Communications; Survivability; Robotics; Advanced Ground and Aviation Systems; and other high priority emerging threats and opportunities. Funds may also allow for acceleration of critical capabilities to counter urgent and emerging threats for transition to programs of record. Funding may also be used to acquire specialized expertise to execute an initiative.

The Army Rapid Capabilities and Critical Technologies Office (RCCTO) expedites residual combat materiel capabilities to the Warfighter to provide critical capability in support of the Army modernization strategy and transitions the capability to an acquisition program for production and fielding as an enduring need. The RCCTO assesses Commercial-Off-The-Shelf (COTS), Government Off-The-Shelf (GOTS), and Non-Developmental Item (NDI) (non-standard equipment) solutions for modification and/or integration to address changes in contested environments with materiel solutions for forces deployed globally. The RCCTO engages with industry to identify innovative solutions to high priority problem sets and funds quick turn analysis, modeling and prototyping efforts through this project to demonstrate cross-cutting military utility.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Maturation, Prototyping, Assessment, and Integration of Emerging and Essential Technologies ***Description:*** This effort selects technologies that show high promise for advancing and accelerating capabilities required under acquisition programs and develops and evaluates associated prototypes and architectures for accelerated identification, assessment, and transition to an acquisition program for production and fielding. It also demonstrates integrated technologies within a high fidelity and realistic operating environment and transitions them to a formal program of record on an accelerated timeline.	273.811	-	-
Title: Directed Energy Maneuver - Short Range Air Defense	-	151.166	103.870

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FI3 / *Rapid Capability Development and Maturation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: This effort matures, integrates, and demonstrates High Energy Laser technologies on Army Stryker vehicles to support Maneuver- Short Range Air Defense (M-SHORAD) requirements and reduce risk for M-SHORAD. The goal is to protect maneuvering forces from Rocket, Artillery, and Mortar (RAM) and Unmanned Aerial System (UAS) threats. ***FY 2022 Plans:*** Will complete procurement and integration of system hardware, weapon fire control software, and Forward Area Air Defense Command and Control (FAADC2) for three additional DE M-SHORAD 50 kW laser weapon systems; conduct full system verification and acceptance testing for three additional DE M-SHORAD 50 kW laser weapon systems; prepare for and execute the delivery of four total DE M-SHORAD 50 kW laser weapon system platforms with residual combat capability to an Army Battery Level unit supporting the Brigade Combat Team Air Defense Artillery (BCT ADA) Operations. ***FY 2023 Plans:*** Will provide Contractor Logistics Support (CLS) beginning in FY 2023 for the four DE M-SHORAD 50 KW class laser weapon system delivered in FY 2022; execute contract for integration of additional prototype vehicles for delivery in FY 2023. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decreased from FY 2022 to FY 2023 due to focus on CLS for the four DE M-SHORAD systems delivered in FY 2022 and integration of prototypes for delivery in FY 2023.			
Title: Wideband Selective Propagating Radar (WiSPR) ***Description:*** Prototyping effort to develop a ?Low Observable? Radar (60 GHZ) to detect incoming anti-armor rounds, communicate among vehicles, and provide an effect (high power microwave). This will be virtually undetectable RADAR and Communications enforced by physics (not assumptions of adversary capabilities) by providing a combined Low Probability to Detect/Low Probability to Intercept RADAR for Active Protection Systems and Communications for inter-vehicle. ***FY 2022 Plans:*** This funding will enable: (1) manufacturing of a wideband selective propagation radar aperture for ground combat vehicles as defined by the unit of action; (2) integration of the aperture into the selected platform. ***FY 2023 Plans:*** This funding will enable: (1) Developmental testing and design refinement of a wideband selective propagation radar aperture for ground combat vehicles as defined by the unit of action; (2) Refinement of the technical data package and integration of the aperture onto the selected platform. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	2.601	14.239

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FI3 / *Rapid Capability Development and Maturation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding increased from FY 2022 to FY 2023 due to focus on completing developmental testing of the system and associated refinement of the system design. The funding will also support finalization of the technical data package, platform integration design efforts, and delivery of the initial increment allotment of finalized prototypes that can support supplemental government testing/demonstration to support the planned transition to the assuming Program Office.			
Title: Concept Prototyping	-	24.088	32.576
Description: This effort funds innovative technology across the RCCTO portfolio. RCCTO hosts semi-annual industry days where industry competes to propose the most innovative projects to leaders across the Army, including the Program Executive Officers, Army Futures Command's Cross Functional Team Directors and Research and Development Center Directors, and other subject matter experts. This panel selects the most impactful projects to be prioritized for the RCCTO Board of Directors will provide directed efforts. Efforts are initiated by Army stakeholders to fill critical capability gaps in the areas of artificial intelligence, machine learning, resilient and open standard communications, advanced network operation tools, counter unmanned aerial systems, unmanned aerial and terrestrial sensors, advanced ground vehicle enhancements, ground vehicle hybrid electrification, advanced energy efficient battery technologies, ruggedized and resilient power electronics, advanced low size, weight, and power (SWaP) energy generation and storage systems, advanced manned/unmanned aerial systems, advanced manned/unmanned ground systems, weapon system cyber resiliency, advanced defensive and offensive cyber, quantum computing, quantum sensing, assured position, navigation, and timing (APNT), security orchestration and automated response, multi-domain command and control (C2), electronic warfare, autonomy & robotics, soldier borne sensors and capabilities, edge processing technologies, information processing, exploitation and dissemination (PED) tools, resilient water support and safety monitoring capabilities, sensor to shooter capabilities and modeling and simulations in support of these domain areas. These efforts provide the Army initial operational capability for future integration into a program of record and include market research, technology analysis, project planning and development, prototyping and testing requirements. ***FY 2022 Plans:*** Prototype, demonstrate and evaluate capabilities. Funds will support BoD Directed electrification efforts for unmanned aerial swarming platforms (HIVE) automated cyber access and exploitation capabilities, and the hybridization of tactical vehicles Hybrid Electric Tactical Vehicle (HMMWV) and Joint Light Tactical Hybrid Electric Vehicle (JLTV). Additionally these funds will support the contract award of Innovation Day/AStRA 4 events. AStRA 4 is based on critical gaps identified in partnership with PEO Command, Control, Communications-Tactical (C3T) and PEO Combat Support & Combat Service Support (CS&CSS) and their respective operational requirements owners in support of multi-domain operations (MDO). AStRA provides an opportunity to transition innovative technology solutions and rapid prototypes from traditional and non-traditional (e.g. small business, academia, etc) vendors that meet critical gaps identified in coordination with the partner PEOs and Operational Requirements Owners (e.g. CFT, CDID, ISR Task Force, etc). AStRA 4 problem statements were focused on the rapid prototyping of capabilities aligned to the following 8 problem statements from PEO C3T (1. Vehicle Transmission Compatibility with C4ISR/EW Modular Open Suite of			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FI3 / *Rapid Capability Development and Maturation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Standards (CMOSS); 2. Prioritizing User Experience ? An Integrated Tactical Network; 3. The Data Fabric Layer; 4. Handheld Radio Batteries) and PEO CS&CSS (5. Extreme Artic Environment Shelter and Life Support Technologies; 6. Water Monitoring; 7. Power Electronics for Military Environment; 8. Small Engine Technology). ***FY 2023 Plans:*** Prototype, demonstrate and evaluate capabilities. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increased from FY 2022 to FY 2023 due to funding increment needed for AStRA 4 contract awards and resources required for RCCTO BoD directed efforts such as the HIVE, hybrid electric HMMWV, cyber access solutions and hybrid electric JLTV. The remaining funding will be used to execute Innovation Day / AStRA 5 and other BoD Directed efforts. Based on previous years this funding will support execution of 6-8 projects depending on the technical complexity and schedule.			
Title: Organizational Expenses ***FY 2022 Plans:*** Includes support agreements with the Garrisons (Fort Belvoir and Redstone Arsenal) for base operational support; subject matter expertise in acquisition, program management and law; IT Network support; IT Software Licenses; computers/mobile devices (new and refresh); supplies; training; travel. ***FY 2023 Plans:*** Includes support agreements with the Garrisons (Fort Belvoir and Redstone Arsenal) for base operational support; subject matter expertise in acquisition, program management and law; IT Network support; IT Software Licenses; computers/mobile devices (new and refresh); supplies; training; travel. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increase due to inflation adjustments.	-	20.095	22.094
Title: SBIR/STTR Transfer ***Description:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	7.518	-
Accomplishments/Planned Programs Subtotals	273.811	205.468	172.779

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FI3 / *Rapid Capability Development and Maturation*

	FY 2021	FY 2022
Congressional Add: Program increase - Counter-Unmanned Aerial Systems directed energy prototype ***FY 2021 Accomplishments:*** Program increase supporting system development and demonstration on Counter-Unmanned Aerial Systems Directed Energy Prototype. The Counter-Unmanned Aerial Systems Directed Energy Prototype effort supports the development and testing of a high-efficiency fiber laser paired with advanced thermal and power management technology to achieve high-duty cycles and magazine depths, which is the basis of defeating multiple drones and drone swarms. This effort builds upon the ongoing Army initiated successful development of a Stryker based fiber laser systems, such as Directed Energy Maneuver-Short Range Air Defense (DE M-SHORAD) that continues to meet technical performance requirements needed for the development of a light tactical vehicle based Counter-Unmanned Aerial Systems (C-UAS) system. Work performed by the Rapid Capabilities and Critical Technologies Office (RCCTO), in Huntsville, Alabama.	10.000	-
Congressional Add: Program Increase: Counter-Unmanned Aerial System Integration with Robotic Vehicles ***FY 2022 Plans:*** Program increase supporting system development and demonstration of Counter-Unmanned Aerial Systems Integration with Robotic Vehicles. This work will demonstrate the integration of proven Commercial-Off-The-Shelf (COTS) technologies to provide a modular multi-mission capability to include surveillance (with small Unmanned Aerial Systems (sUAS) detection), Counter-sUAS (C-sUAS) electronic warfare & other hard kill capabilities including High Energy Laser (HEL). This effort provides a single integrated prototype system to be demonstrated in a operational environment. Work performed by the Rapid Capabilities and Critical Technologies Office (RCCTO), in Huntsville, Alabama.	-	5.000
Congressional Add: Program Increase: High Energy Laser Targeting System ***FY 2022 Plans:*** Program increase supporting system development and demonstration of a high energy laser targeting system. Optical sensor advances can enable leap-ahead performance in High Energy Laser (HEL) targeting capabilities. This project will leverage advanced sensors and laser illuminators to demonstrate weapons targeting benefits with reduced size, weight, and power of the total optical system. It is also expected to demonstrate reduction in	-	5.000

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FI3 / *Rapid Capability Development and Maturation*

	FY 2021	FY 2022
illuminator power requirements. Demonstrations will utilize the Outdoor Laser Test Facility at the University of Central Florida. Dual-use sensor capabilities will be demonstrated to support improvements of HEL weapons and conventional imaging/targeting optics. Work performed by the Rapid Capabilities and Critical Technologies Office (RCCTO), in Huntsville, Alabama and Orlando, Florida.		
Congressional Adds Subtotals	10.000	10.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• OMA - 432612: *Logistic Automation Systems Sustainment*	-	-	-	-	-	-	-	-	-		
• OMA - 435212: *Other Service Support*	-	-	-	-	-	-	-	-	-		

Remarks

Transfers funding from SAG 432612 Service Wide Communications and SAG 435212 Other Service Support, to RDTE, BA 5, to align resources for the Office of Chief Systems Engineer to the RDT&E appropriation.

D. Acquisition Strategy

The Army Rapid Capabilities and Critical Technologies Office (RCCTO) capitalizes on current and emerging technologies to provide near-term and mid-term solutions to address emerging threats and high impact capability opportunities for U.S. Army Forces deployed globally. This is accomplished in one of two ways: 1) adapting COTS/GOTS/NDI equipment to meet operational needs and 2) developing emerging deployable capability through research and development organizations, academia, and industry. The RCCTO uses streamlined acquisition methods, processes and techniques to rapidly acquire the capability; these methods vary by project. The RCCTO has procurement authority and an in-house contracting staff, with the flexibility to use both traditional and non-traditional contracting approaches. To reach non-traditional vendors, RCCTO will use non-standard contracting methods, such as Other Transaction Authority agreements. Where practicable, prototypes will be acquired using competitive procedures. Soldier touchpoints will be conducted to provide feedback in support of Army requirements generation, prototype maturation, fielding residual combat capability to a unit of action, and future capability development. When designated by the RCCTO Board of Directors, projects will be transitioned to an approved acquisition program for production and fielding.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605054A / *Emerging Technology Initiatives*	Project (Number/Name) FI3 / *Rapid Capability Development and Maturation*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix, Contractor Labor	Various	TBD : Various	6.999	27.275		13.865		15.244		-		15.244	0.000	63.383	-
Facilities, IT/Supplies, Travel, Training	Various	TBD : Various	4.991	5.010		6.230		6.850		-		6.850	0.000	23.081	-
DE M-SHORAD Matrix, Contractor Labor	MIPR	RCCTO : Huntsville, AL	-	-		15.116		9.572		-		9.572	Continuing	Continuing	Continuing
FY2022 SBIR / STTR Transfer	TBD	various : various	-	-		7.518		-		-		-	Continuing	Continuing	-
Program Increase Contractor Labor	MIPR	RCCTO : Huntsville, AL	-	-		1.000		-		-		-	0.000	1.000	-
		Subtotal	11.990	32.285		43.729		31.666		-		31.666	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Emerging Technologies Development	Various	TBD : Various	32.036	205.530		13.642		23.929		-		23.929	0.000	275.137	-
DE M-SHORAD CLS, Procurement & Integration	C/Various	Kord Technologies : Huntsville, AL	-	-		108.650		94.298	Nov 2022	-		94.298	Continuing	Continuing	Continuing
Program Increase: Counter-Unmanned Aerial System Integration with Robotic Vehicles	TBD	TBD : Boulder, CO	-	-		4.500		-		-		-	0.000	4.500	-
Program Increase: High Energy Laser Targeting System	TBD	TBD : Orlando, FL	-	-		4.500		-		-		-	0.000	4.500	-
		Subtotal	32.036	205.530		131.292		118.227		-		118.227	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605054A / *Emerging Technology Initiatives*	Project (Number/Name) FI3 / *Rapid Capability Development and Maturation*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Emerging Technologies Engineering Support	TBD	TBD : Various	7.827	9.014		7.704		13.514		-		13.514	0.000	38.059	-
		Subtotal	7.827	9.014		7.704		13.514		-		13.514	0.000	38.059	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Emerging Technologies Test & Evaluation	TBD	TBD : Various	14.219	36.982		5.343		9.372		-		9.372	0.000	65.916	-
DE M-SHORAD Test & Evaluation	TBD	Various : Various	-	-		27.400		-		-		-	0.000	27.400	-
		Subtotal	14.219	36.982		32.743		9.372		-		9.372	0.000	93.316	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	66.072	283.811		215.468		172.779		-		172.779	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FI3 / *Rapid Capability Development and Maturation*

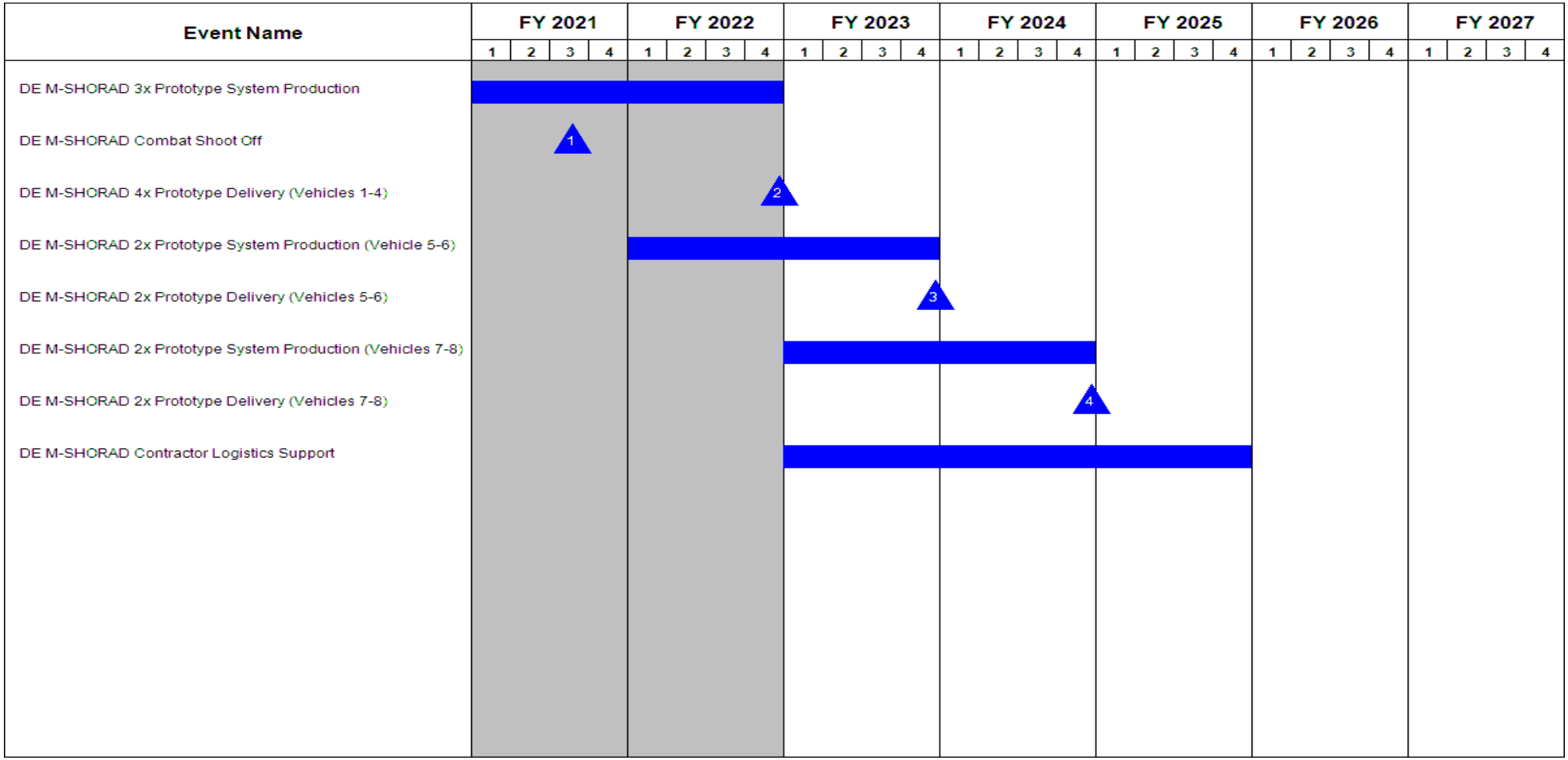


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FI3 / *Rapid Capability Development and Maturation*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DE M-SHORAD 3x Prototype System Production	1	2021	4	2022
DE M-SHORAD Combat Shoot Off	3	2021	3	2021
DE M-SHORAD 4x Prototype Delivery (Vehicles 1-4)	4	2022	4	2022
DE M-SHORAD 2x Prototype System Production (Vehicle 5-6)	1	2022	4	2023
DE M-SHORAD 2x Prototype Delivery (Vehicles 5-6)	4	2023	4	2023
DE M-SHORAD 2x Prototype System Production (Vehicles 7-8)	1	2023	4	2024
DE M-SHORAD 2x Prototype Delivery (Vehicles 7-8)	4	2024	4	2024
DE M-SHORAD Contractor Logistics Support	1	2023	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605054A / *Emerging Technology Initiatives*	Project (Number/Name) FL7 / *Rapid Capability Support*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FL7: *Rapid Capability Support*	-	10.555	11.334	12.532	-	12.532	12.860	13.129	13.406	13.686	0.000	87.502
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

RCCTO Core Labor funding transitioned from PE 0604798A.

A. Mission Description and Budget Item Justification

This project funds rapid prototyping and delivery of residual combat capability to enable the Army Modernization Priorities and the National Defense Strategy. These efforts include long range precision fires, air and missile defense, ground, aviation, Soldier, cyber, and command, control, communications, computers, intelligence, surveillance & reconnaissance (C4ISR) missions. The primary goal is to deliver experimental prototypes to a unit of action through a collaborative and accelerated acquisition process. Technologies will be demonstrated in relevant environments, performing tactical/operational scenarios. Efforts will focus on high-priority, threat-based projects with the intent to deliver an operationally effective capability in the near- and mid-terms. Efforts will include accelerated materiel development and competitive prototyping based on anticipated and emerging threats and opportunities. This Project provides the Army an improved mechanism to effectively confront emerging threats and advance America's military dominance in accordance with the National Defense Strategy. Efforts include development, acquisition, assessment, maturation, and transition of prototype technologies to acquisition programs in Directed Energy; Long Range Precision Fires; Air and Missile Defense; Cyber; Artificial Intelligence; Signals Intelligence (SIGINT); Unmanned Aerial Systems (UAS) and Counter UAS (C-UAS); Communications; Survivability; and other high priority emerging threats and opportunities as designated by the RCCTO Board of Directors. Funds may also allow for acceleration of critical Program of Record capabilities to counter urgent and emerging threats. Funding may also be used to acquire specialized expertise to execute an initiative.

The Army RCCTO expedites the fielding of critical combat materiel capabilities to the Warfighter to meet urgent needs and support the Army modernization strategy. The RCCTO assesses Commercial-Off-The Shelf (COTS), Government Off-The- Shelf (GOTS), and Non-Developmental Item (NDI) (non-standard equipment) solutions for modification and/or integration to address changes in contested environments with enduring materiel solutions for forces deployed globally. The RCCTO procures prototypes and evaluates solutions to field residual combat capability to a unit of action and transition the capability to an acquisition program for production and sustainment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Core Labor	10.555	11.334	12.532
Description: Funding will be for Core Labor.			
FY 2022 Plans: These funds will be used for Core Labor in support of rapid prototyping and delivery of residual combat capability to enable long			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FL7 / *Rapid Capability Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
range precision fires, air and missile defense, ground, aviation, Soldier, cyber and C4ISR missions. ***FY 2023 Plans:*** These funds will be used for Core Labor in support of rapid prototyping and delivery of residual combat capability to enable long range precision fires, air and missile defense, ground, aviation, Soldier, cyber and C4ISR missions. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to adjustments in wages.			
Accomplishments/Planned Programs Subtotals	10.555	11.334	12.532

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605054A / *Emerging Technology Initiatives*	Project (Number/Name) FL7 / *Rapid Capability Support*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Core Labor	TBD	RCCTO : Fort Belvoir VA, Huntsville AL and APG	-	10.555		11.334		12.532		-		12.532	0.000	34.421	-
		Subtotal	-	10.555		11.334		12.532		-		12.532	0.000	34.421	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	10.555		11.334		12.532		-		12.532	0.000	34.421	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FL7 / *Rapid Capability Support*

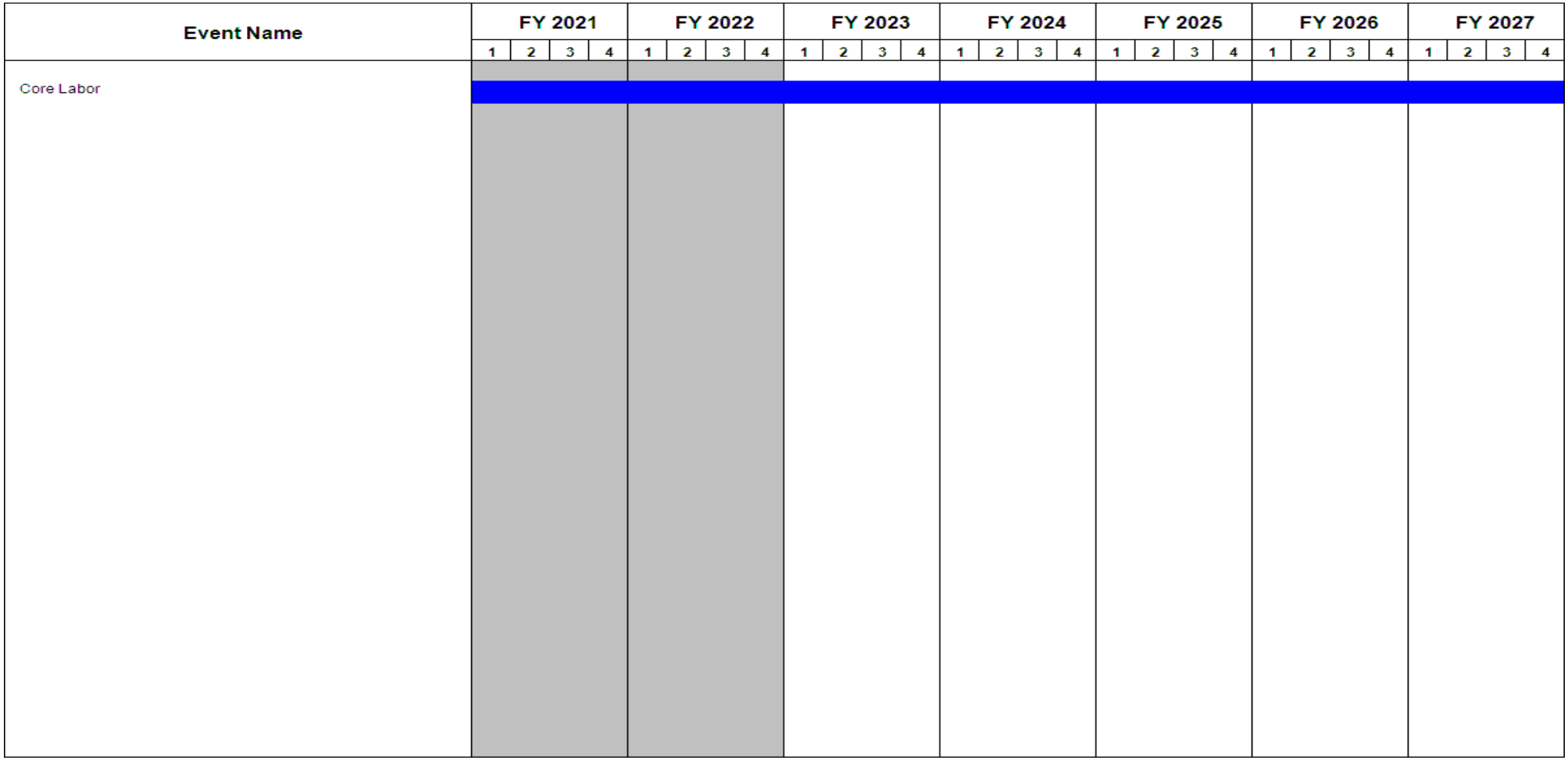


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605054A / *Emerging Technology Initiatives*	**Project (Number/Name)** FL7 / *Rapid Capability Support*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Core Labor	1	2021	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605143A *I Biometrics Enabling Capability (BEC)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	4.326	11.091	-	11.091	0.000	0.000	0.000	0.000	0.000	15.417
BX5: *Biometrics Enabling Capability (BEC)*	-	-	4.326	11.091	-	11.091	-	-	-	-	0.000	15.417

A. Mission Description and Budget Item Justification

Biometrics Enabling Capability 1 (BEC 1), was a new start in FY22. BEC 1 provides 24/7 operational support enabling time sensitive missions requiring near real time biometrics identification of known and/or suspected threat actors worldwide in support of Joint All Domain Operations (JADO). The automated and manual biometrics matching allows the Warfighter to accurately identify and detain those responsible for conducting espionage, sabotage, terrorist operations and other coercive actions against US forces and partner nations across the globe.

FY2023 funding in the amount of $11.091 Million allows for completion of development and insertion of BEC Increment 1 capabilities.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	4.326	0.000	-	0.000
Current President's Budget	0.000	4.326	11.091	-	11.091
Total Adjustments	0.000	0.000	11.091	-	11.091
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	11.091	-	11.091

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605143A / *Biometrics Enabling Capability (BEC)*	Project (Number/Name) BX5 / *Biometrics Enabling Capability (BEC)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
BX5: *Biometrics Enabling Capability (BEC)*	-	-	4.326	11.091	-	11.091	-	-	-	-	0.000	15.417
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Biometrics Enabling Capability 1 (BEC 1), provides 24/7 operational support enabling time-sensitive missions requiring near real-time biometric identification of known and/or suspected threat actors worldwide in support of Joint-All-Domain-Operations (JADO). The automated and manual biometrics matching allows the Warfighter to accurately identify and detain those responsible for conducting espionage, sabotage, terrorist operations and other coercive actions against US forces and partner nations across the globe.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Initiate BEC 1 as a New Start in FY22; Support the development and integration of the Capability Drop #1 requirements; Moves capability to the Cloud and adds voice-matching capability	-	4.326	11.091
FY 2022 Plans: Initiate BEC 1 as a New Start in FY22; FY22 funding will support the development and integration of the Capability Drop #1 requirements; Moves capability to the Cloud and adds voice-matching capability; Improves scalability, flexibility, and cyber defenses.			
FY 2023 Plans: FY23 funding will support completion of the development and integration of the Capability Drop #1 requirements; Moves capability to the Cloud and adds voice-matching capability improves scalability, flexibility, cyber defenses.			
FY 2022 to FY 2023 Increase/Decrease Statement: Fiscal Year (FY) 2023 increase of $6.376 Million allows for completion of development and insertion of BEC Increment 1 capabilities.			
Accomplishments/Planned Programs Subtotals	-	4.326	11.091

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605143A / *Biometrics Enabling Capability (BEC)*	Project (Number/Name) BX5 / *Biometrics Enabling Capability (BEC)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BEC Increment 1	C/CPIF	TBD : Fairmont, West VA	-	-		4.326	Jan 2022	11.091	Feb 2023	-		11.091	0.000	15.417	-
		Subtotal	-	-		4.326		11.091		-		11.091	0.000	15.417	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		4.326		11.091		-		11.091	0.000	15.417	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605143A / *Biometrics Enabling Capability (BEC)*	**Project (Number/Name)** BX5 / *Biometrics Enabling Capability (BEC)*

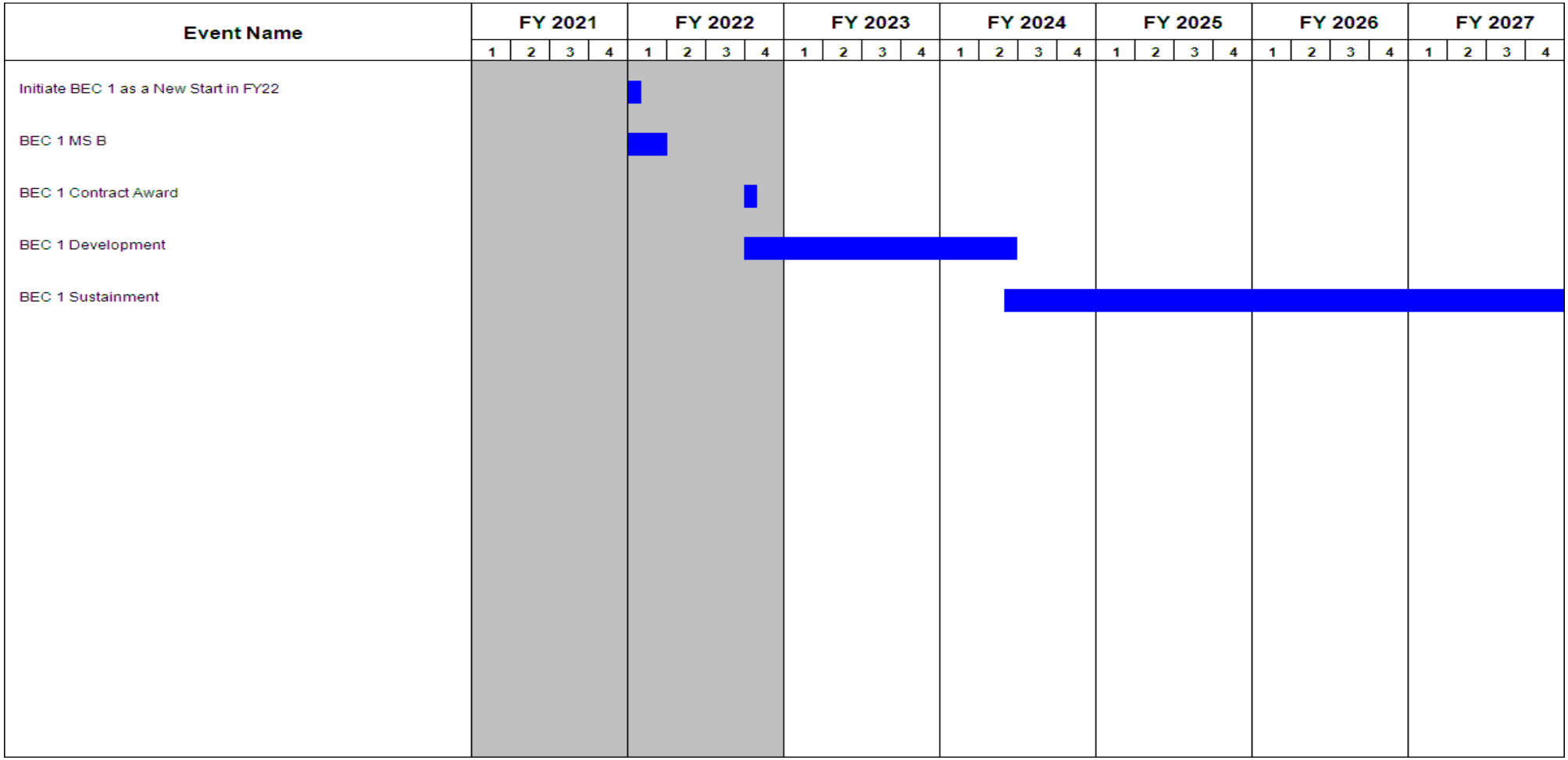


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605143A / *Biometrics Enabling Capability (BEC)*	**Project (Number/Name)** BX5 / *Biometrics Enabling Capability (BEC)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initiate BEC 1 as a New Start in FY22	1	2022	1	2022
BEC 1 MS B	1	2022	1	2022
BEC 1 Contract Award	4	2022	4	2022
BEC 1 Development	4	2022	2	2024
BEC 1 Sustainment	2	2024	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605144A / *Next Generation Load Device - Medium*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	15.397	22.439	-	22.439	6.716	1.026	1.026	1.036	0.000	47.640
BY6: *Key Management Infrastructure Development*	-	-	15.397	22.439	-	22.439	6.716	1.026	1.026	1.036	0.000	47.640

A. Mission Description and Budget Item Justification

This budget item is a key enabler of the Army Modernization Priorities in support of the Communication Security (COMSEC).

Project BY6: This budget item funds the development and test of the Next Generation Load Device - Medium (NGLD-M) to conduct the Army's key fill mission by issuing, filling, and managing Cryptographic keys to both legacy and future Key Management Infrastructure (KMI) aware End-Cryptographic Units (ECUs). This effort is an Acquisition Category III (ACAT III) Program of Record (POR). COMSEC is governed by the Chairman of the Joint Chiefs of Staff Instruction (CJCSA) 6510. In order to ensure Warfighters continue to have secured communications (i.e., encrypted data and voice), Army communications systems are required to support modern cryptographic capabilities by implementing modern algorithms. These efforts are consistent with Strategic Planning Guidance (SPG).

Project BY6 FY 2023 Justification: FY2023 funding supports the NGLD-M developmental effort for two vendors to develop and test their hardware and software solutions.

Prior to FY2022, the NGLD-M development effort was funded under PE 0303140A, Project DV4. In FY2022 and out, PE 0303140A no longer includes funding associated with the NGLD-M Program. New PE 0303140A Project Code BY6 was established to clearly identify requirements for NGLD-M development and is not considered a new start effort.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	15.616	0.000	-	0.000
Current President's Budget	0.000	15.397	22.439	-	22.439
Total Adjustments	0.000	-0.219	22.439	-	22.439
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.219			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	22.439	-	22.439

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605144A *I Next Generation Load Device - Medium*

Change Summary Explanation

Fiscal Year 2023 (FY23) funding increase reflects the fact that the FY22 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605144A / *Next Generation Load Device - Medium*	Project (Number/Name) BY6 / *Key Management Infrastructure Development*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
BY6: *Key Management Infrastructure Development*	-	-	15.397	22.439	-	22.439	6.716	1.026	1.026	1.036	0.000	47.640
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

As part of the Army's Key Management Infrastructure (KMI) implementation, the Next Generation Load Device - Medium (NGLD-M) is an Acquisition Category III (ACAT III) Program of Record (POR) and modernized load device that will replace legacy AN/PYQ-10A and AN/PYQ-10A(C) (Army), which is commonly referred to as the Simple Key Loader (SKL). The NGLD-M will receive, store, manage, and transfer electronic key through the network to be loaded into communication devices such as radios and satellites to secure the network. The NGLD-M requires RDT&E investment to develop and test the hardware and software solutions. Without this technology Warfighters are required to manually receive their cryptographic products by traveling to COMSEC account locations (which may not be co-located) and manually filling their devices.

FY2023 funding supports the NGLD-M developmental effort for two vendors to establish a developmental baseline and conduct developmental testing of their hardware and software solutions.

Prior to FY2022, the NGLD-M development effort was funded under PE 0303140A, Project DV4. In FY2022 and out, PE 0303140A no longer includes funding associated with the NGLD-M Program. New PE 0303140A Project Code BY6 was established to clearly identify requirements for NGLD-M development and is not considered a new start effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: NGLD-M Development and NSA Certification	-	13.680	20.310
Description: The Next Generation Load Device - Medium (NGLD-M) will conduct the Army's key fill mission by issuing, filling, and managing Cryptographic keys to both legacy and future KMI aware End-Cryptographic Units (ECUs). This technology requires RDT&E investment to meet the requirements outlined in the NGLD Capability Production Document (CPD). ***FY 2022 Plans:*** Conduct the NGLD-M development and the User Application Software (UAS) integration of up to two solutions to meet the CPD. The NGLD-M development will establish configuration items and allocate system functions and performance requirements to the configurations items through a Preliminary Design Review. Further NGLD-M development will finalize the physical and functional characteristics of the NGLD-M configuration items and establish Government configuration control of the design at the Critical Design Review (CDR). At CDR, The Government will receive pre-production development models to support Highly Accelerated			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605144A / *Next Generation Load Device - Medium*	**Project (Number/Name)** BY6 / *Key Management Infrastructure Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Life Testing for system reliability testing, End Cryptographic Unit interoperability testing, and the Risk Management Framework Security Control Assessment. ***FY 2023 Plans:*** Continue NGLD-M development to finalize the physical and functional characteristics of the NGLD-M configuration items and establish Government configuration control of the design at the Critical Design Review (CDR). At CDR, The Government will receive pre-production development models to support Highly Accelerated Life Testing for system reliability testing, End Cryptographic Unit interoperability testing, and other developmental testing. Additionally, the NGLD-M configuration will undergo a Risk Management Framework Security Control Assessment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY23 increase supports the acquisition strategy enabling full and open competition between two vendors currently on contract. This increase keeps the developmental schedule on track to be completed in FY25.			
Title: Program Management Support ***Description:*** PMO costs will be covered by OMA funding. This funds matrixed support from Combat Capabilities Development Command (CCDC) Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center to assist with the NGLD-M development effort. ***FY 2022 Plans:*** FY 2022 funds matrixed support to include Acquisition Program Manager (APM), and Software Engineer Program Management support from Combat Capabilities Development Command (CCDC) Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center to assist with the NGLD-M development effort. ***FY 2023 Plans:*** FY 2023 funds matrixed support to include Acquisition Program Manager (APM), and Software Engineer Program Management support from Combat Capabilities Development Command (CCDC) Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center to assist with the NGLD-M development effort. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase is due to inflation.	-	1.155	1.752
Title: Developmental Test & Evaluation Support ***Description:*** NGLD-M developmental test and evaluation support efforts. ***FY 2023 Plans:***	-	-	0.377

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605144A / *Next Generation Load Device - Medium*	**Project (Number/Name)** BY6 / *Key Management Infrastructure Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2023 funds developmental test and evaluation support efforts to include End Cryptographic Unit (ECU) interoperability testing, environmental testing, Telecommunications Electronics Materials Protected from Emanating Spurious Transmissions (TEMPEST), and NSA Testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY23 increase supports developmental test and evaluation efforts.			
Title: SBIR/STTR Transfer ***Description:*** SBIR/STTR ***FY 2022 Plans:*** FY22 funding transfer reflects SBIR/STTR reduction from FY22 RAP ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Fiscal Year 2022 (FY22) funding decrease reflects SBIR/STTR reduction from FY22 RAP	-	0.562	-
Accomplishments/Planned Programs Subtotals	-	15.397	22.439

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0303140A: *Information Systems Security Program*	28.270	15.680	17.209	-	17.209	16.675	18.140	18.146	18.323	Continuing	Continuing
• B96000: *Communications Security (COMSEC)*	159.400	126.273	125.692	-	125.692	139.147	150.393	150.835	150.769	0.000	1,002.509

Remarks

D. Acquisition Strategy

Aspects of the Next Generation Load Device - Medium (NGLD-M) may include commercially availability solutions and/or interfaces, but development is required to integrate these solutions into a device that meets the rigors of NSA certification and the Capability Production Document (CPD) requirements. There is no commercially driven market for NSA certified load devices that meet the requirements identified in the NGLD Family CPD. The NGLD-M Acquisition Strategy supports a multiple award contract strategy for development, production, and sustainment. These requirements ensure secure communications by requiring the NGLD-M to provide specific tamper protections, limit electromagnetic radiation to prevent adversarial detection of the system, among others outlined within the Information Assurance Security Requirements Document. The Milestone Decision Authority issued a Materiel Development Decision (MDD) Acquisition Decision Memorandum (ADM) on 14 March 2019 that designated the NGLD-M as an ACAT III Program of Record (PoR).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605144A / *Next Generation Load Device - Medium*	Project (Number/Name) BY6 / *Key Management Infrastructure Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	CCDC C5ISR S&TCD : APG, MD	-	-		1.155	Nov 2021	1.752	Nov 2022	-		1.752	0.000	2.907	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.562		-		-		-	0.000	0.562	-
		Subtotal	-	-		1.717		1.752		-		1.752	0.000	3.469	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGLD-M Development	C/CPFF	CCDC C5ISR S&TCD, NIWC-Pacific : APG, MD; San Diego, CA	-	-		13.680	Nov 2021	20.310	Nov 2022	-		20.310	0.000	33.990	-
		Subtotal	-	-		13.680		20.310		-		20.310	0.000	33.990	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	C/CPFF	CCDC C5ISR S&TCD : APG, MD	-	-		-		0.377	Nov 2022	-		0.377	0.000	0.377	-
		Subtotal	-	-		-		0.377		-		0.377	0.000	0.377	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		15.397		22.439		-		22.439	0.000	37.836	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605144A / *Next Generation Load Device - Medium*	**Project (Number/Name)** BY6 / *Key Management Infrastructure Development*

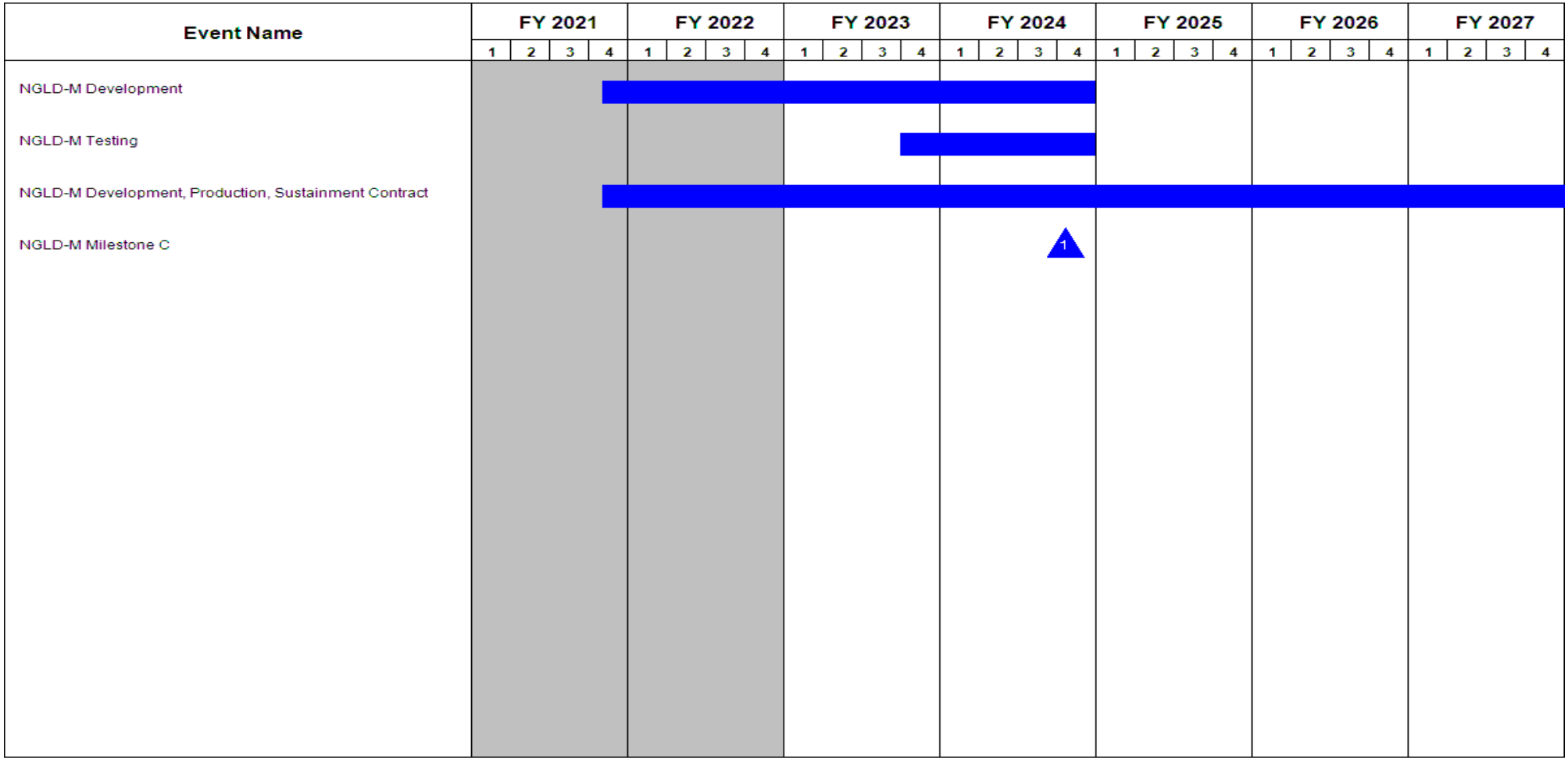


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605144A / *Next Generation Load Device - Medium*	**Project (Number/Name)** BY6 / *Key Management Infrastructure Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NGLD-M Development	4	2021	4	2024
NGLD-M Testing	4	2023	4	2024
NGLD-M Development, Production, Sustainment Contract	4	2021	4	2031
NGLD-M Milestone C	4	2024	4	2024

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605145A *I Medical Products and Support Systems Development*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	0.919	0.962	-	-	-	0.000	0.000	0.000	0.000	0.000	1.881
CD6: *Medical Products and Support Systems Development*	-	0.919	0.962	-	-	-	-	-	-	-	0.000	1.881

A. Mission Description and Budget Item Justification

This Program Element (PE) funds the Civilian Authorized Salaries and other operational requirements for the non-Army Management Headquarters Activity (non-AMHA) Research, Development, Test, and Evaluation (RDTE) functions incident to the local operation and management of the Medical Command support at the United States (U.S.) Army Medical Research and Development Command (USAMRDC).

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.919	0.962	0.000	-	0.000
Current President's Budget	0.919	0.962	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605145A / *Medical Products and Support Systems Development*	Project (Number/Name) CD6 / *Medical Products and Support Systems Development*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CD6: *Medical Products and Support Systems Development*	-	0.919	0.962	-	-	-	-	-	-	-	0.000	1.881
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 United States Army Medical Research and Development Command (USAMRDC), Fort Detrick, Maryland to: (1) perform planning, programming, and budgeting; (2) manage resources; and (3) ensure compliance with United States Food and Drug Administration (FDA) and other regulatory and safety requirements. It also provides for continued operations of contracting and acquisition management functions performed in support of the USAMRDC Medical RDTE Program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Civilian Authorized Salaries and Other Operational Requirements	0.919	0.927	-
Description: Funding is provided to the USAMRDC for Medical Research Development Acquisition (RDA) Management and Oversight to include the payroll of civilians as well as nominal operating expense. Expertise helps establish and maintain the capabilities that Army medicine needs to sustain life, limb, and eyesight for our warfighters. Civilian labor performs centralized management of Medical RDA (many areas required by law and/or regulation) including animal & human research protections, health and safety compliance, environmental management, and U.S. Food and Drug Administration (FDA) regulatory compliance, legal support (including intellectual property protection), quality assurance, contracting services, personnel management, and planning, programming, and budgeting, and execution management. Funding also supports the Army's portion of the Special Immunization Program that protects individuals engaged in infectious disease research if exposed to pathogens or toxins.			
FY 2022 Plans: Will fund civilian salaries and associated management and administrative expenses (support contracts, supplies, equipment, travel, etc.) at USAMRDMC. Also, will provide regulatory, clinical monitoring and data support for the Special Immunization Program as necessary. This program will provide non licensed vaccines under FDA oversight to personnel at risk of exposure to selected infectious diseases.			
FY 2022 to FY 2023 Increase/Decrease Statement: Funding and mission realigned as part of US Army Medical Research and Development Command transfer to the Defense Health Agency in order to meet Congressional intent as outlined in NDAA 2019 (Section 711) and NDAA 2020 (Section 737).			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605145A / *Medical Products and Support Systems Development*	**Project (Number/Name)** CD6 / *Medical Products and Support Systems Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding transferred to Program Element 0606105DHA, Project Code 376B.			
Title: SBIR/STTR tax	-	0.035	-
FY 2022 Plans: SBIR/STTR tax			
FY 2022 to FY 2023 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC ?638.			
Accomplishments/Planned Programs Subtotals	0.919	0.962	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605145A / *Medical Products and Support Systems Development*	Project (Number/Name) CD6 / *Medical Products and Support Systems Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.035		-		-		-	0.000	0.035	-
		Subtotal	-	-		0.035		-		-		-	0.000	0.035	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Civilian Salary and Other Requirements	TBD	USAMRDC : Fort Detrick, MD	-	0.919		0.927		-		-		-	0.000	1.846	-
		Subtotal	-	0.919		0.927		-		-		-	0.000	1.846	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.919		0.962		-		-		-	0.000	1.881	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605145A / *Medical Products and Support Systems Development*	**Project (Number/Name)** CD6 / *Medical Products and Support Systems Development*

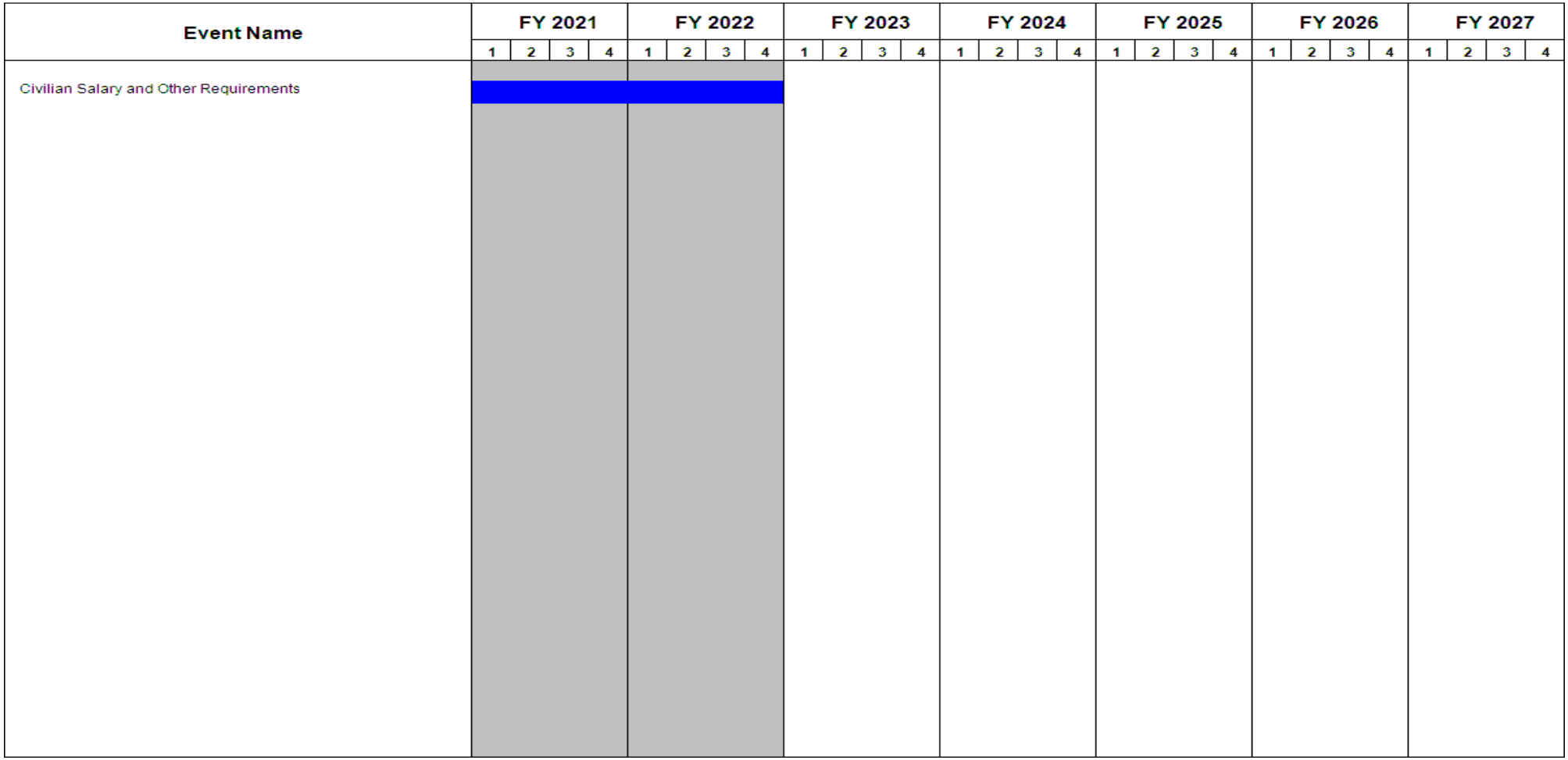


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605145A / *Medical Products and Support Systems Development*	**Project (Number/Name)** CD6 / *Medical Products and Support Systems Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Civilian Salary and Other Requirements	1	2021	4	2022

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605148A *I Tactical Intel Targeting Access Node (TITAN) EMD*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	-	54.972	58.087	-	58.087	36.013	31.949	31.494	31.801	0.000	244.316
BY5: *Tactical Intelligence Targeting Access Node EMD*	-	-	54.972	58.087	-	58.087	36.013	31.949	31.494	31.801	0.000	244.316

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of the Tactical Intelligence Targeting Access Node (TITAN). TITAN is a scalable and expeditionary intelligence ground station that supports commanders across the entire Multi-Domain Operations (MDO)/Joint All Domain Operations (JADO) battlefield framework with capabilities tailored to echelon. TITAN leverages Space, High Altitude, Aerial and Terrestrial layer sensors to provide targetable data to fires networks as well as multi-discipline intelligence support to targeting and Situation Awareness/Situation Understanding (SA/SU) in support of mission command.

TITAN is the future Army Intelligence, Surveillance, and Reconnaissance (ISR) ground station that will consolidate the sensor processing capabilities in the current Distributed Common Ground System-Army (DCGS-A) Operational-Intelligence Ground Station (OGS), Tactical-Intelligence Ground Station (TGS), the Advanced Miniaturized Data Acquisition System Dissemination Vehicle (ADV) and the Remote Ground Terminal (RGT). Additionally, TITAN will have the access and sensor tasking or control capabilities of the future Tactical Space Layer assets, National assets, the Multi-Domain Sensing Systems (MDSS) as well as commercial overhead sensors. Consequently, the TITAN ground station will be able to conduct deep sensing operations with the abilities to Task, Collect, Process, Exploit, and Disseminate (TCPED) information from Space, High Altitude, Aerial, and Terrestrial Layer sensors in support of Long Range Precision Fires (LRPF) operations.

This funding line is a key enabler of the Army Modernization Priorities in support of Army Cross Functional Teams.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	54.972	0.000	-	0.000
Current President's Budget	0.000	54.972	58.087	-	58.087
Total Adjustments	0.000	0.000	58.087	-	58.087
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	58.087	-	58.087

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605148A *I Tactical Intel Targeting Access Node (TITAN) EMD*

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605148A / *Tactical Intel Targeting Access Node (TITAN) EMD*	Project (Number/Name) BY5 / *Tactical Intelligence Targeting Access Node EMD*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
BY5: *Tactical Intelligence Targeting Access Node EMD*	-	-	54.972	58.087	-	58.087	36.013	31.949	31.494	31.801	0.000	244.316
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

TITAN directly addresses the U.S. Army Combined Arms Center's (USACAC) Multi-Domain Operations (MDO) gap #1: Lack of echelons above corps (EAC) multi-domain deep sensing, analysis, and processing, exploitation and dissemination (PED) for indications & warning (I&W) and anti-access/area denial (A2/AD) targeting. Furthermore, TITAN indirectly addresses MDO Gap 2: No theater detect, decide, deliver, assess (D3A) and convergence of Long Range Precision Fires (LRPF) to disintegrate A2/AD and MDO Gap #3: Lack of EAC LRPF capacity to dis-integrate A2/AD and shape the deep fight. TITAN supports these MDO gaps by providing the sensor data receipt and control, analysis, exploitation, and dissemination functions needed to enable LRPF. The system is postured to provide the fighting force with improved capacity and capability to "stimulate, see, and strike the enemy."

The FY23 RDTE Dollars in the amount of $58.087M will fund the continued Development, Integration, and Testing of four production-representative TITAN prototype systems. Integrate high altitude, aerial and terrestrial sensor data feeds. Integrate TENCAP-developed Space-Ground Component Kit (SGCK). Fund updates, integration, accreditation, & testing of new capabilities resulting from new sensor feeds and emerging technologies. Includes Developmental and Soldier touchpoints to test-fix-test capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Project Management	-	4.872	4.110
Description: Funds needed to execute system development and integration activities, deliver acquisition and logistics documentation, perform system cyber security, accreditation and Human Systems Integration (HSI) efforts. ***FY 2022 Plans:*** Funds program support for initial Development and Integration of four production-representative TITAN prototype systems. Funds updates, integration, and accreditation of new capabilities resulting from new sensor feeds and emerging technologies ***FY 2023 Plans:*** Funds program support for Development and Integration of up to two TITAN prototype systems. Funds updates, integration, and accreditation of capabilities for sensor processing, exploitation and dissemination in support of targeting. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Reduced project management support required to maintain system development level of effort.			
Title: System Development and Integration	-	46.243	48.253

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605148A / *Tactical Intel Targeting Access Node (TITAN) EMD*	**Project (Number/Name)** BY5 / *Tactical Intelligence Targeting Access Node EMD*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Funds development and integration activities of up to four production-representative TITAN prototype systems. Integrates system SW baseline and HW system architecture and interfaces. Integrates high altitude, aerial and terrestrial data feeds onto TITAN platform. Integration of TENCAP?s SGCK to allow access to commercial, National and Tactical Space Layer capabilities. Funds integration of S&T efforts such as SHOT and Prometheus into TITAN SW baseline. ***FY 2022 Plans:*** Funds initial Development, Integration, of four production-representative TITAN prototype systems. Integrates high altitude, aerial and terrestrial sensor data feeds. Integrates space ground component kit. Funds updates, integration, and accreditation of new capabilities resulting from new sensor feeds and emerging technologies ***FY 2023 Plans:*** Funds continued Development, Integration, of two production-representative TITAN prototype systems. Integrates high altitude, aerial and terrestrial sensor data feeds. Integrates space ground component kit. Funds updates, integration, and accreditation of new capabilities resulting from new sensor feeds and emerging technologies ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Minute increase in funds programmed for system development and integration.			
Title: Test Activities ***Description:*** Supports Developmental and Operational Testing activities for four production-representative TITAN prototype systems in support of system production decision. Funds all T&E events required by Army Test Community, including multiple soldier touch points. ***FY 2022 Plans:*** Funds initial Testing of four production-representative TITAN prototype systems. Funds testing of new capabilities resulting from new sensor feeds and emerging technologies. ***FY 2023 Plans:*** Funds continued Testing of two production-representative TITAN prototype systems. Funds testing of new capabilities resulting from new sensor feeds and emerging technologies. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Testing efforts will be performed for Competitive Prototyping Phase, System Integration; and Enhanced Prototyping Phase, Tailoring at Echelon requirements.	-	3.857	5.724
Accomplishments/Planned Programs Subtotals	-	54.972	58.087

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605148A / *Tactical Intel Targeting Access Node (TITAN) EMD*	**Project (Number/Name)** BY5 / *Tactical Intelligence Targeting Access Node EMD*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• BY4: *Tactical Intelligence Targeting Access Node*	-	28.347	0.863	-	0.863	0.594	4.336	4.133	4.173	0.000	42.446
• K57311: *TITAN GROUND STATION*	-	-	84.821	-	84.821	298.935	372.787	409.469	350.556	0.000	1,516.568

Remarks

D. Acquisition Strategy

The TITAN program acquisition strategy is to leverage Middle-Tier of Acquisition (MTA) for Rapid Prototyping. This strategy allows the program to rapidly develop and field a capability that address multi-domain operations gap. The capabilities will be refined through soldier touchpoints and demonstrations/exercises, and inform final TITAN requirements and Concept of Operations (CONOPS). Demonstrating the objective capability in an operational environment will inform a decision point to transition to an MTA Rapid Fielding effort or tailored Milestone C for production. TITAN's open-system architecture approach ensures the system will be tailorable and scalable, with the ability to provide increased intelligence capabilities, additional sensor data and processing throughput over time to keep pace with new technology and changing threat. TITAN's MTA approval is based on an Abbreviated CDD (A-CDD) with an Army Requirements Oversight Council (AROC), which was approved in 1QFY22. The MTA decision point is by 2QFY22.

An Other Transaction Authority (OTA) contract was awarded under the 10 U.S.C. 2371b and the 2016 National Defense Authorization Act (NDAA), Section 815, for TITAN Rapid Prototyping. This innovative approach enables acceleration of the TITAN Ground Station capabilities to the Warfighter. The TITAN OTA approach is a multi-phased contract vehicle designed to scope each phase separately based on maturing requirements and informed by risk reduction efforts in prior phases. The initial phase, Ground Station Modernization, was competitive risk-reduction effort between two vendors to build system-level designs and mature a Software (SW) baseline. The next phase will be awarded in 3QFY22 and is focused on competitive prototyping between both vendors. The Competitive Prototyping Phase includes further SW baseline refinement to ensure functionality and then begin Hardware (HW) integration within a shelter and on a representative vehicle platform. The TITAN program includes two variants, Advanced and Basic, with Advanced featuring direct downlink (DDL) access to space data and enhanced storage capabilities, and Basic tailored for lower echelons and more expeditionary. At the conclusion of Competitive Prototyping, both vendors will be evaluated against technical feasibility and ability to meet TITAN requirements, which will inform up-select to one vendor. The selected vendor will move on to the final prototyping phase, Prototype maturation, which includes increasing capability of their prototypes to inform final TITAN requirements and support a Production decision. Multiple Soldier Touchpoints and demonstration of capability in the operational force, to ensure usability and inform requirements and CONOPS, will highlight the OTA phases for Rapid Prototyping. TITAN Production may be executed through Major Capability Acquisition (MCA) Milestone C or MTA for Rapid Fielding, and future FAR-based contracts will support both production and sustainment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605148A / *Tactical Intel Targeting Access Node (TITAN) EMD*	Project (Number/Name) BY5 / *Tactical Intelligence Targeting Access Node EMD*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	C/FP	Various : APG and Contractor Facility (TBD)	-	-		4.872	Dec 2021	4.110	Jan 2023	-		4.110	Continuing	Continuing	Continuing
		Subtotal	-	-		4.872		4.110		-		4.110	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Development and Integration	C/FP	Various : APG, Ft. Bragg, JBLM,, YPG, CTR FAC (TBD)	-	-		46.243	Oct 2021	48.253	Jan 2023	-		48.253	Continuing	Continuing	Continuing
		Subtotal	-	-		46.243		48.253		-		48.253	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Activities	C/FP	Various : APG, YPG, WSMR (OT Location TBD)	-	-		3.857	Jan 2022	5.724	Jan 2023	-		5.724	Continuing	Continuing	Continuing
		Subtotal	-	-		3.857		5.724		-		5.724	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		54.972		58.087		-		58.087	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605148A / *Tactical Intel Targeting Access Node (TITAN) EMD*	**Project (Number/Name)** BY5 / *Tactical Intelligence Targeting Access Node EMD*

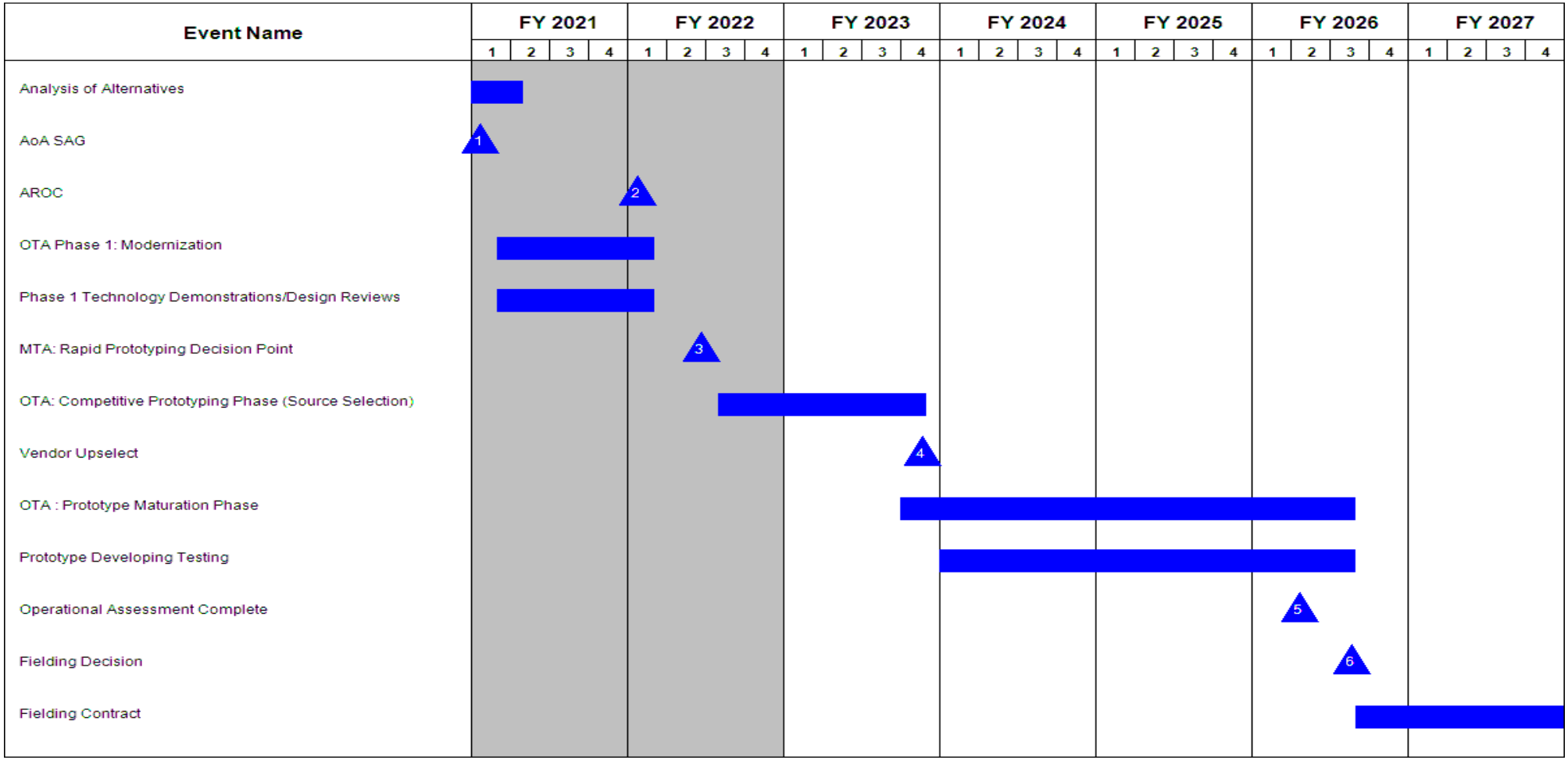


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605148A / *Tactical Intel Targeting Access Node (TITAN) EMD*	**Project (Number/Name)** BY5 / *Tactical Intelligence Targeting Access Node EMD*

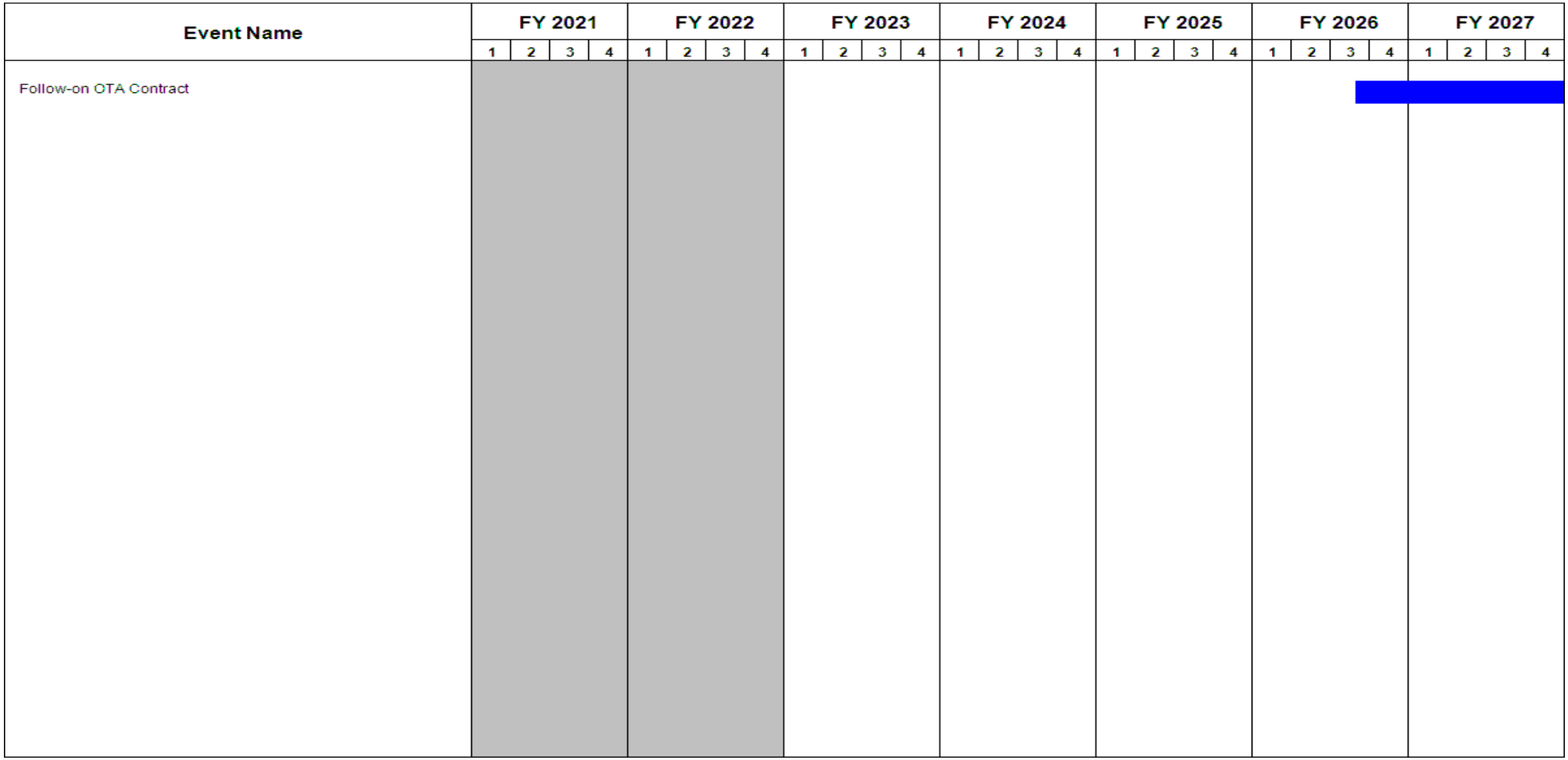


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605148A / *Tactical Intel Targeting Access Node (TITAN) EMD*	**Project (Number/Name)** BY5 / *Tactical Intelligence Targeting Access Node EMD*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MDD	2	2020	2	2020
Analysis of Alternatives	3	2020	1	2021
AoA SAG	1	2021	1	2021
AROC	1	2022	1	2022
OTA Phase 1: Modernization	1	2021	1	2022
Phase 1 Technology Demonstrations/Design Reviews	1	2021	1	2022
MTA: Rapid Prototyping Decision Point	2	2022	2	2022
OTA: Competitive Prototyping Phase (Source Selection)	3	2022	4	2023
Vendor Upselect	4	2023	4	2023
OTA : Prototype Maturation Phase	4	2023	3	2026
Prototype Developing Testing	1	2024	3	2026
Operational Assessment Complete	2	2026	2	2026
Fielding Decision	3	2026	3	2026
Fielding Contract	3	2026	4	2027
Follow-on OTA Contract	3	2026	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605203A / *Army System Development & Demonstration*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	177.501	122.175	119.516	-	119.516	145.744	142.616	144.349	145.770	0.000	997.671
BR3: *Army System Development & Demonstration*	-	177.501	122.175	119.516	-	119.516	145.744	142.616	144.349	145.770	0.000	997.671

A. Mission Description and Budget Item Justification

The Army System Development & Demonstration budget line includes multiple efforts across the Army's Battlefield Operational Systems necessary to support projects in engineering and manufacturing development for use on programs that have not received approval for full-rate. System performance is near or at planned operational system levels.

Projects are characterized by mature system development, integration, demonstration to support Milestone C decisions, conducting live fire test and evaluation, and initial operational test and evaluation of production representative articles.

Selected programs within this budget line will exhibit a logical progression of program phases, development and production funding within the FYDP, consistent with the Department's full funding policy.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	150.201	122.175	0.000	-	0.000
Current President's Budget	177.501	122.175	119.516	-	119.516
Total Adjustments	27.300	0.000	119.516	-	119.516
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	27.300	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	119.516	-	119.516

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605205A *I Small Unmanned Aerial Vehicle (SUAV) (6.5)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.780	2.275	6.530	-	6.530	9.254	3.097	3.098	3.129	Continuing	Continuing
BR7: *Small Unmanned Aircraft System (6.5)*	-	5.780	2.275	6.530	-	6.530	9.254	3.097	3.098	3.129	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Rucksack Portable Unmanned Aircraft System (RPUAS) Family of Small Unmanned Aircraft System (FoSUAS) provides battalion and below ground maneuver elements with critical situational awareness and enhanced force protection. The system provides the small unit commander an organic and responsive reconnaissance and targeting capability with real-time Full Motion Video and sensor data. Other compatible receivers, such as the One System Remote Video Terminal and appropriately equipped manned platforms may also receive the FoSUAS products.

The RPUAS FoSUAS provides the battalion and below ground maneuver elements with an organic, on-demand, asset to develop situational awareness, enhance force protection, and secure routes, points, and areas. The system provides the small unit commander an organic and responsive reconnaissance and targeting capability with real-time Full Motion Video and sensor data.
The RPUAS FoSUAS includes a combination of three separate hand-launched mission specific configurable aircraft that do not require an improved launch/recovery. The three separate mission specific configurable Unmanned Aircraft (UA) are the Short Range Reconnaissance (SRR), the Medium Range Reconnaissance (MRR), and the Long Range Reconnaissance (LRR). In addition to the aircraft, the system contains ground control equipment, which includes an interoperable handheld ground control station (H-GCS) which incorporates the Tactical Open Government Owned Architecture (TOGA). The FoSUAS mission specific capability for MRR will utilize existing RQ-11 systems. The SRR capability will utilize the upcoming RQ-28A SRR. The LRR capability is under development.

The total cost of the Short Range Reconnaissance (SRR) Middle Tier of Acquisition effort is $34.20 million of RDT&E on from FY20 to FY24. The remainder of the SRR program is fully funded across the Future Years Defense Program.

Justification: FY 2023 Research, Development, Test, and Evaluation (RDTE) Base funding of $6.530 million to meet Capabilities Production Document (CPD) Increment II Block II related requirements. Specifically, to conduct SRR Tranche 2 system development, integration, testing and evaluation.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605205A *I Small Unmanned Aerial Vehicle (SUAV) (6.5)*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	5.780	2.275	0.000	-	0.000
Current President's Budget	5.780	2.275	6.530	-	6.530
Total Adjustments	0.000	0.000	6.530	-	6.530
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	6.530	-	6.530

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605205A / *Small Unmanned Aerial Vehicle (SUAV) (6.5)*	Project (Number/Name) BR7 / *Small Unmanned Aircraft System (6.5)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
BR7: *Small Unmanned Aircraft System (6.5)*	-	5.780	2.275	6.530	-	6.530	9.254	3.097	3.098	3.129	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Rucksack Portable Unmanned Aircraft System (RPUAS) Family of Small Unmanned Aircraft System (FoSUAS) provides battalion and below ground maneuver elements with critical situational awareness and enhanced force protection. The system provides the small unit commander an organic and responsive reconnaissance and targeting capability with real-time Full Motion Video and sensor data. Other compatible receivers, such as the One System Remote Video Terminal and appropriately equipped manned platforms may also receive the FoSUAS products.

The RPUAS FoSUAS provides the battalion and below ground maneuver elements with an organic, on-demand, asset to develop situational awareness, enhance force protection, and secure routes, points, and areas. The system provides the small unit commander an organic and responsive reconnaissance and targeting capability with real-time Full Motion Video and sensor data.
The RPUAS FoSUAS includes a combination of three separate hand-launched mission specific configurable aircraft that do not require an improved launch/recovery. The three separate mission specific configurable Unmanned Aircraft (UA) are the Short Range Reconnaissance (SRR), the Medium Range Reconnaissance (MRR), and the Long Range Reconnaissance (LRR). In addition to the aircraft, the system contains ground control equipment, which includes an interoperable handheld ground control station (H-GCS) which incorporates the Tactical Open Government Owned Architecture (TOGA). The FoSUAS mission specific capability for MRR will utilize existing RQ-11 systems. The SRR capability will utilize the upcoming RQ-28A SRR. The LRR capability is under development.

The total cost of the Short Range Reconnaissance (SRR) Middle Tier of Acquisition effort is $34.20 million of RDT&E on from FY20 to FY24. The remainder of the SRR program is fully funded across the Future Years Defense Program.

Justification: FY 2023 Research, Development, Test, and Evaluation (RDT&E) Base funding of $6.301 million to meet Capabilities Production Document (CPD) Increment II Block II related requirements. Specifically, to conduct SRR Tranche 2 system development, integration, testing and evaluation.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Systems Engineering Program Management	0.603	0.120	0.345
Description: Systems Engineering Program Management support for SRR development and demonstration efforts.			
FY 2022 Plans: Systems Engineering and Program Management support for SRR development and demonstration efforts.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605205A / *Small Unmanned Aerial Vehicle (SUAV) (6.5)*	**Project (Number/Name)** BR7 / *Small Unmanned Aircraft System (6.5)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Systems Engineering and Program Management support for SRR development and demonstration efforts. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to efforts to complete SRR Tranche 2 development and Demonstration efforts.			
Title: System Development and Integration ***Description:*** SRR Development Engineering efforts. ***FY 2022 Plans:*** Development of SRR air vehicle and complete system integration. ***FY 2023 Plans:*** Development of SRR air vehicle and complete system integration. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to efforts to complete SRR Tranche 2 development and integration to support CPD requirements.	3.972	1.331	3.820
Title: Developmental Test and Evaluation ***Description:*** Test and Evaluation efforts for SRR System Development. ***FY 2022 Plans:*** Efforts to conduct testing and evaluation of mature SRR prototype system. ***FY 2023 Plans:*** Efforts to conduct testing and evaluation of mature SRR prototype system. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to efforts to complete SRR Tranche 2 testing and evaluation of mature SRR prototype system.	1.205	0.741	2.365
Title: FY22 SIBR/STTR Transfer ***Description:*** FY22 SIBR/STTR Transfer from the Consolidated Appropriation Act FY22 Enactment. ***FY 2022 Plans:*** SIBR/STTR Transfer from the FY22 Enactment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** SBIR/STTR amount in accordance with Title 15 USC 638.	-	0.083	-
Accomplishments/Planned Programs Subtotals	5.780	2.275	6.530

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605205A / *Small Unmanned Aerial Vehicle (SUAV) (6.5)*	**Project (Number/Name)** BR7 / *Small Unmanned Aircraft System (6.5)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• BR6: *Small Unmanned Aircraft System (6.4)*	1.328	0.926	1.425	-	1.425	1.801	1.832	1.833	1.851	0.000	10.996
• A00010: *SMALL UNMANNED AIRCRAFT SYSTEM*	16.551	16.005	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• A12511: *SHORT RANGE RECONNAISSANCE*	-	-	10.598	-	10.598	20.666	20.817	20.917	20.816	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605205A / *Small Unmanned Aerial Vehicle (SUAV) (6.5)*	Project (Number/Name) BR7 / *Small Unmanned Aircraft System (6.5)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering Program Management (SEPM)	Various	Various : Various	-	0.603		0.120		0.345	Oct 2022	-		0.345	Continuing	Continuing	Continuing
SIBR/STTR Transfer8	TBD	TBD : TBD	-	-		0.083	Apr 2022	-		-		-	0.000	0.083	-
		Subtotal	-	0.603		0.203		0.345		-		0.345	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Engineering	Various	ACC Redstone : Redstone Arsenal	-	3.972	Jun 2021	1.331	Jun 2022	3.820	Jan 2023	-		3.820	Continuing	Continuing	Continuing
		Subtotal	-	3.972		1.331		3.820		-		3.820	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	ACC Redstone : Redstone Arsenal	-	1.205	Aug 2021	0.741	Aug 2022	2.365	Aug 2023	-		2.365	Continuing	Continuing	Continuing
		Subtotal	-	1.205		0.741		2.365		-		2.365	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	5.780		2.275		6.530		-		6.530	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605205A / *Small Unmanned Aerial Vehicle (SUAV) (6.5)*	**Project (Number/Name)** BR7 / *Small Unmanned Aircraft System (6.5)*

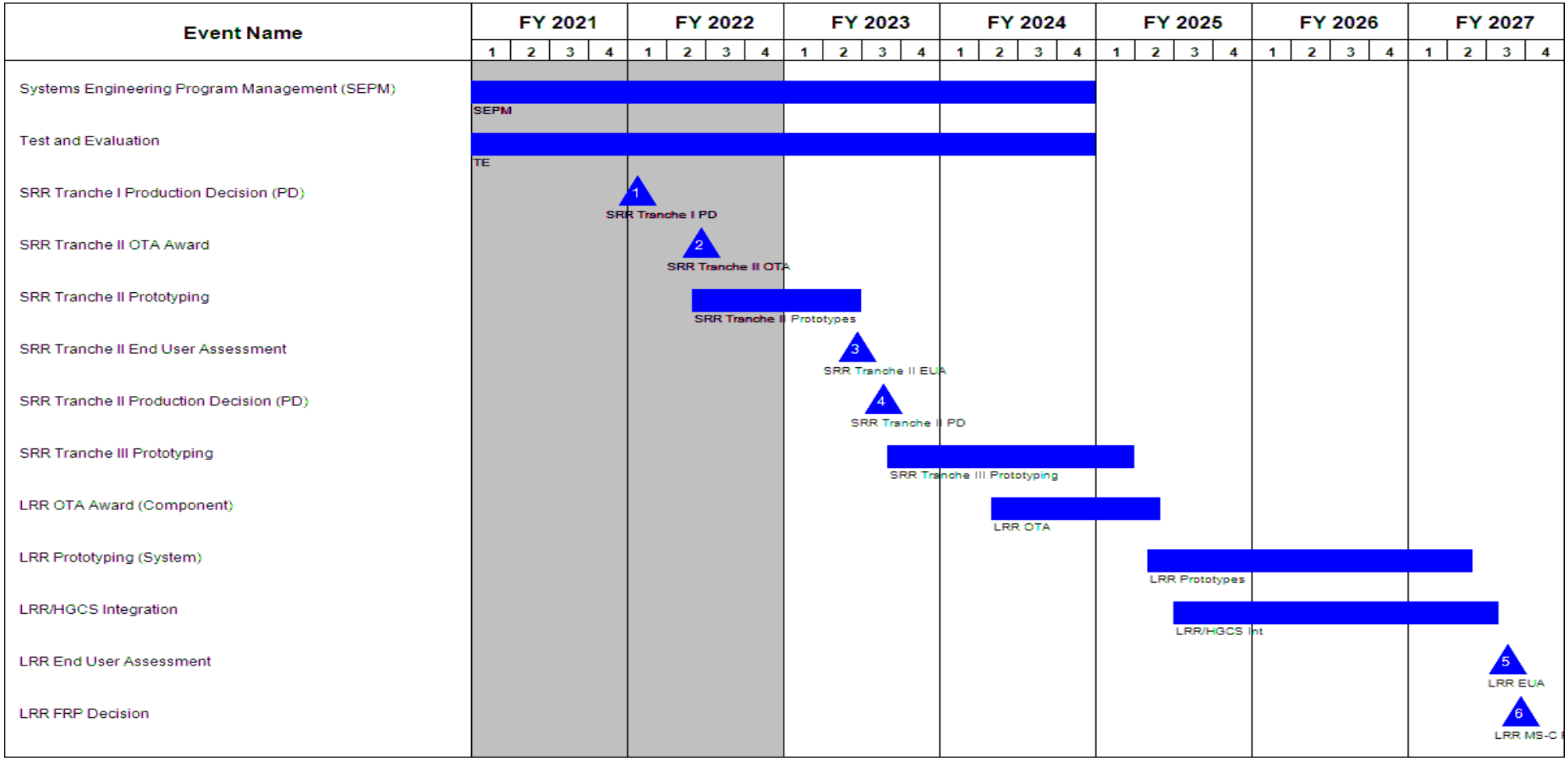


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605205A / *Small Unmanned Aerial Vehicle (SUAV) (6.5)*	**Project (Number/Name)** BR7 / *Small Unmanned Aircraft System (6.5)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Tactical Open Government Owned Architecture Development	4	2014	4	2014
Tactical Open Government Architecture Test Event 2	3	2015	3	2015
Systems Engineering Program Management (SEPM)	2	2018	4	2024
SRR Tranche I Other Transactional Agreements (OTA) Award	3	2019	3	2019
SRR Tranche I Prototyping	3	2019	4	2020
Test and Evaluation	4	2018	4	2024
SRR/(HGCS) Integration	2	2018	4	2020
SRR Tranche I End User Assessment	4	2020	4	2020
SRR Tranche I Production Decision (PD)	1	2022	1	2022
SRR Tranche II OTA Award	2	2022	2	2022
SRR Tranche II Prototyping	2	2022	2	2023
SRR Tranche II End User Assessment	2	2023	2	2023
SRR Tranche II Production Decision (PD)	3	2023	3	2023
SRR Tranche III Prototyping	3	2023	1	2025
LRR OTA Award (Component)	2	2024	2	2025
LRR Prototyping (System)	2	2025	2	2027
LRR/HGCS Integration	3	2025	3	2027
LRR End User Assessment	3	2027	3	2027
LRR FRP Decision	3	2027	3	2027

Note

Schedule events shown prior to Fiscal Year (FY) 2021 are for informational purposes only.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605224A *I Multi-Domain Intelligence*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	9.313	19.911	-	19.911	41.870	39.467	40.176	40.567	0.000	191.304
CK4: *Intelligence Apps and Integration (MIP)*	-	-	9.313	19.911	-	19.911	41.870	39.467	40.176	40.567	0.000	191.304

A. Mission Description and Budget Item Justification

The Intelligence Applications and Integration (Intel Apps) Program is a software-centric ACAT III Program that will provide the Next Generation intelligence capabilities aligned to the National Defense Strategy and Multi-Domain Operations by enabling intelligence professionals to work through the intelligence cycle with increased speed, precision and accuracy. The Intel Apps Program will synchronize applications (including All Source, Information Collection, Weather effects, and Intelligence Support to Targeting) to be integrated into the Command Post Computing Environment (CPCE) architecture thus eliminating redundant, stove-piped, and resource-intensive applications. The Intel Apps program will also support the modernization of Geospatial capabilities currently being used in the Army by purchasing the latest and most effective hardware and software available. The emphasis for adding these and all future Intel Apps capabilities to the Army will be by leveraging commercial items to the maximum extent possible. The Army will leverage proven technology as a means of providing capabilities in the fastest and most efficient means possible.

The FY23 base dollars in the amount of $19.911 million will focus on the development of Information Collection and Weather Operational Effects applications as well as the testing of the All Source and Intelligence Support to Targeting applications.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	9.313	0.000	-	0.000
Current President's Budget	0.000	9.313	19.911	-	19.911
Total Adjustments	0.000	0.000	19.911	-	19.911
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	19.911	-	19.911

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605224A / *Multi-Domain Intelligence*	Project (Number/Name) CK4 / *Intelligence Apps and Integration (MIP)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CK4: *Intelligence Apps and Integration (MIP)*	-	-	9.313	19.911	-	19.911	41.870	39.467	40.176	40.567	0.000	191.304
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Intelligence Applications and Integration (Intel Apps) Program is a software-centric ACAT III Program that will provide the Next Generation intelligence capabilities aligned to the National Defense Strategy and Multi-Domain Operations by enabling intelligence professionals to work through the intelligence cycle with increased speed, precision and accuracy. The Intel Apps Program will synchronize applications (including All Source, Information Collection, Weather effects, and Intelligence Support to Targeting) on top of the Command Post Computing Environment (CPCE) architecture, thus eliminating redundant, stove-piped, and resource-intensive applications. The Intel Apps program will also support the modernization of Geospatial capabilities currently being used in the Army by purchasing the latest and most effective hardware and software available. The emphasis for adding these and all future Intel Apps capabilities to the Army will be by leveraging commercial items to the maximum extent possible. The Army will leverage proven technology as a means of providing capabilities in the fastest and most efficient means possible.

The FY23 funds in the amount of $19.911 million will focus on the development of Information Collection and Weather Operational Effects applications as well as the testing of the All Source and Intelligence Support to Targeting applications.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Intelligence Applications and Integration	-	9.313	19.911
Description: Provide Next Generation intelligence capabilities. Initiate activities for All Source and Intelligence Support, Market Research and intelligence applications. Each application is on a two year cycle, therefore by year 2+ and every year beyond there will be overlap between released applications.			
FY 2022 Plans: Development of All Source and Intelligence Support to Targeting applications and the necessary Market Research.			
FY 2023 Plans: Development of Information Collection and Weather Operational Effects applications, testing of the All Source and Intelligence Support to Targeting applications, and the necessary Market Research for future Intelligence Applications.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605224A / *Multi-Domain Intelligence*	**Project (Number/Name)** CK4 / *Intelligence Apps and Integration (MIP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funds are increased to refine modification, integration, and testing for Information Collection and Weather Operations applications.			
Accomplishments/Planned Programs Subtotals	-	9.313	19.911

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• BZ6111: *INTELLIGENCE APPS*	-	20.095	20.637	-	20.637	30.118	37.726	19.508	19.499	0.000	147.583

Remarks

D. Acquisition Strategy

The acquisition strategy is to acquire the Intelligence Applications by procuring commercial products available from the market place, or leveraging capabilities from Agencies' and Functional Managers' standard software, or using matured intelligence capabilities from Science and Technology initiatives for integration onto the CPCE infrastructure. Based upon Market Research for the first four software applications, the government identified commercial items that will be procured via competitive contracts. In order to meet military maturity and DoD standards, these applications will require additional modification, integration and testing support.

Most importantly, the Government is developing an API Interface to support interoperability between these applications. This interface will be tested to perform in a military environment.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605224A / *Multi-Domain Intelligence*	Project (Number/Name) CK4 / *Intelligence Apps and Integration (MIP)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Managenent	Option/ CPFF	QED : APG, MD	-	-		0.745	Dec 2021	1.486	Dec 2022	-		1.486	0.000	2.231	-
		Subtotal	-	-		0.745		1.486		-		1.486	0.000	2.231	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering/SME Support	Option/ CPFF	BOOZ ALLEN HAMILTON : APG, MD	-	-		3.968	Dec 2021	2.927	Dec 2022	-		2.927	0.000	6.895	-
Information Assurance/ Risk Management	Option/ CPFF	BOOZ ALLEN HAMILTON : APG, MD	-	-		0.500	Dec 2021	0.494	Dec 2022	-		0.494	0.000	0.994	-
		Subtotal	-	-		4.468		3.421		-		3.421	0.000	7.889	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training Development	RO	C5ISR : APG, MD	-	-		0.900	Dec 2021	1.335	Mar 2023	-		1.335	0.000	2.235	-
Integration effort into CPCE	RO	C5ISR : APG, MD	-	-		1.950	Dec 2021	1.085	Mar 2023	-		1.085	0.000	3.035	-
Information Collection (application 3)	TBD	TBD : TBD	-	-		-		5.000		-		5.000	0.000	5.000	-
Weather Operational Effects (application 4)	TBD	TBD : TBD	-	-		-		3.403		-		3.403	0.000	3.403	-
		Subtotal	-	-		2.850		10.823		-		10.823	0.000	13.673	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605224A / *Multi-Domain Intelligence*	Project (Number/Name) CK4 / *Intelligence Apps and Integration (MIP)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	ATEC : APG, MD	-	-		1.250	Jun 2022	4.181	Mar 2023	-		4.181	0.000	5.431	-
		Subtotal	-	-		1.250		4.181		-		4.181	0.000	5.431	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		9.313		19.911		-		19.911	0.000	29.224	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605224A / *Multi-Domain Intelligence*	**Project (Number/Name)** CK4 / *Intelligence Apps and Integration (MIP)*

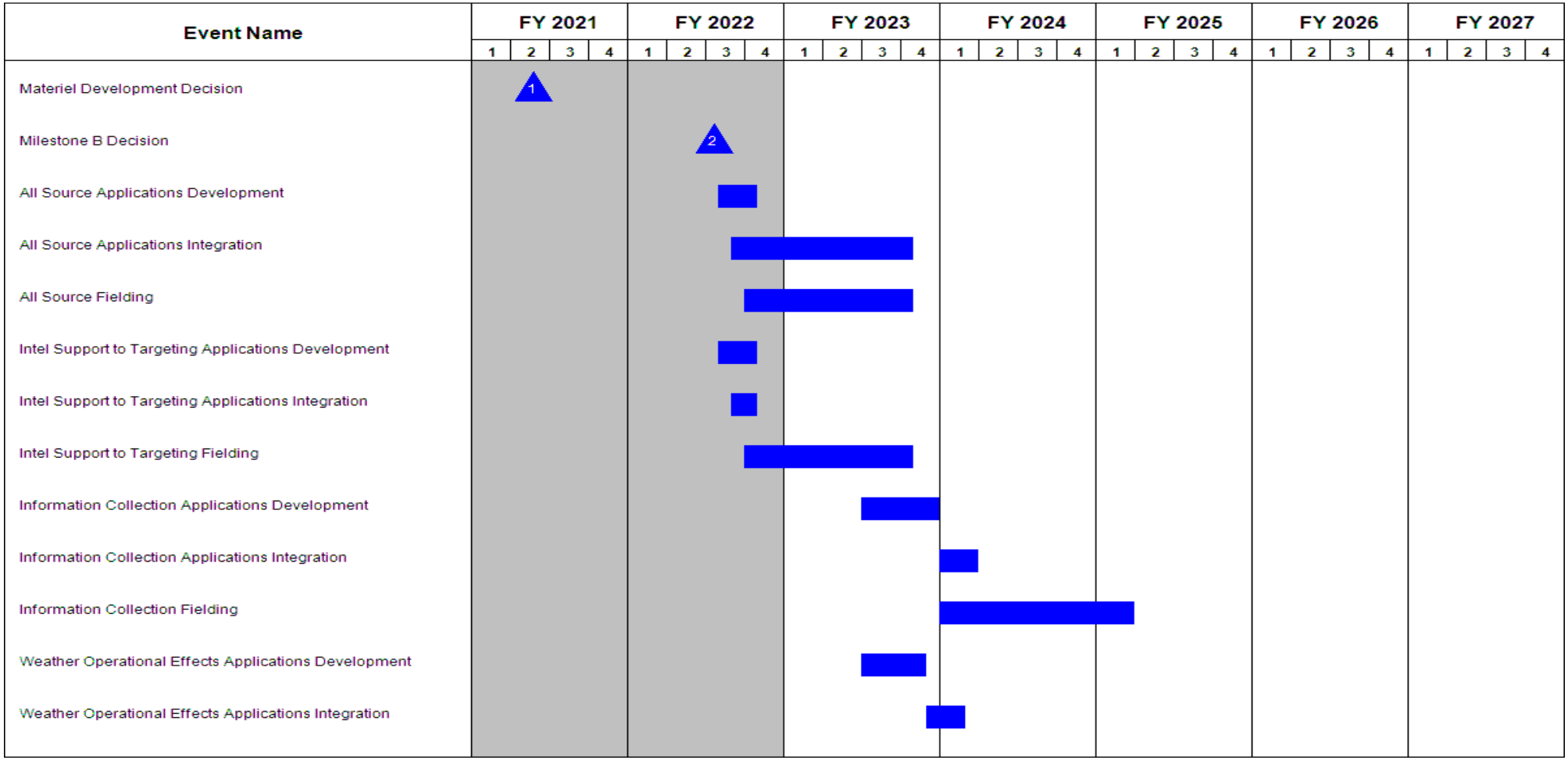


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605224A / *Multi-Domain Intelligence*	**Project (Number/Name)** CK4 / *Intelligence Apps and Integration (MIP)*

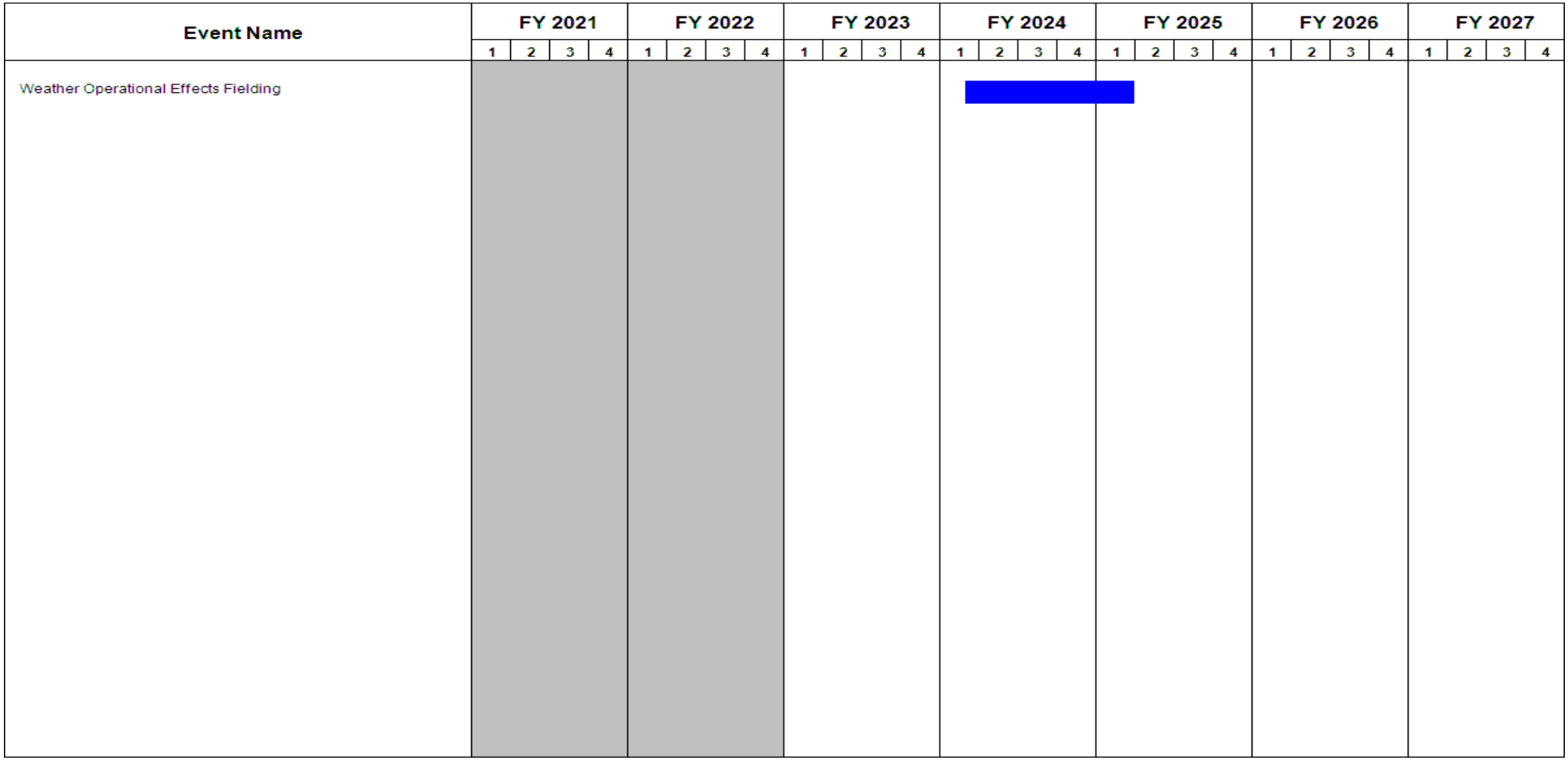


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605224A / *Multi-Domain Intelligence*	**Project (Number/Name)** CK4 / *Intelligence Apps and Integration (MIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Materiel Development Decision	2	2021	2	2021
Milestone B Decision	3	2022	3	2022
All Source Applications Development	3	2022	4	2022
All Source Applications Integration	3	2022	4	2023
All Source Fielding	4	2022	4	2023
Intel Support to Targeting Applications Development	3	2022	4	2022
Intel Support to Targeting Applications Integration	3	2022	4	2022
Intel Support to Targeting Fielding	4	2022	4	2023
Information Collection Applications Development	3	2023	4	2023
Information Collection Applications Integration	1	2024	1	2024
Information Collection Fielding	1	2024	1	2025
Weather Operational Effects Applications Development	3	2023	4	2023
Weather Operational Effects Applications Integration	4	2023	1	2024
Weather Operational Effects Fielding	1	2024	1	2025

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605225A *I SIO Capability Development*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	22.713	-	-	-	0.000	0.000	0.000	0.000	0.000	22.713
CB7: *SIO Capability Development*	-	-	22.713	-	-	-	-	-	-	-	0.000	22.713

A. Mission Description and Budget Item Justification

Program provides critical classified, continuous, rapid evolutionary development of offensive cyberspace capabilities intended to project power in and through the cyberspace domain. Capabilities also provide deliberate, authorized, response actions which are taken external to the DODIN to defeat ongoing or imminent threats. Authorities are provided under Title 10, United States Code Section 394. In FY20 and FY21, the details of this program were reported in accordance with Title 10, United States Code, Section 119(a)(1). In FY22, the transition to an evolved set of technical solutions, controlled at appropriate security classification levels, will enable application against a broader set of Title 10 operational needs and requirements for the program.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	22.713	0.000	-	0.000
Current President's Budget	0.000	22.713	0.000	-	0.000
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605225A / *SIO Capability Development*	Project (Number/Name) CB7 / *SIO Capability Development*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CB7: *SIO Capability Development*	-	-	22.713	-	-	-	-	-	-	-	0.000	22.713
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Program provides critical classified, continuous, rapid evolutionary development of offensive cyberspace capabilities intended to project power in and through cyberspace. Capabilities also provide deliberate, authorized, response actions which taken external to the DODIN to defeat ongoing or imminent threats. Authorities are provided under Title 10, United States Code Section 394. In FY20 and FY21, the details of this program were reported in accordance with Title 10, United States Code, Section 119(a)(1). The transition from Title 10 allows for a broader set of requirements for the program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Special Information Operations	-	22.713	-
FY 2022 Plans: Continues to provide funds to specified Army Programs of Record (POR) and Quick Reaction Capabilities (QRC) for Title 10 classified cyber capability development and integration efforts, ensuring their congruence with Army Cyber Command (ARCYBER) and United States Cyber Command (USCYBERCOM) requirements and initiatives to include but not limited to operational cyber infrastructure platforms, rapid cyber development environments, tools, cyber surveillance and reconnaissance, and additional ARCYBER priorities as directed as elements in the Joint Cyber Warfighting Architecture (JCWA).			
FY 2022 to FY 2023 Increase/Decrease Statement: No funding is requested for FY2023.			
Accomplishments/Planned Programs Subtotals	-	22.713	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Special Information Operations (SIO) funds provide for agile development, integration, and ongoing Army capability testing of advanced technologies and systems to pace the rapidly evolving cyber threat environment during Joint All Domain Operations and support multi-domain soldier test points. The Army Capability Manager-Cyber manages validated Army requirements for operationally relevant capabilities, which are refined and driven by an annual Commanding General (CG) Army Cyber Command prioritization memorandum. Program Executive Office Intelligence, Electronic Warfare & Sensors (PEO IEW&S) then uses Budget Activity (BA) 6.5 RDT&E to manage evolution of these required efforts through classified system development and integration into Army Programs of Record (POR)s and Quick Reaction

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605225A / *SIO Capability Development*	**Project (Number/Name)** CB7 / *SIO Capability Development*

Capabilities (QRC)s. This strategy ensures these capabilities remain viable and operationally focused through multiple budget cycles, significantly increasing successful transitions to recipient Army Cyber warfighting forces.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605225A / *SIO Capability Development*	Project (Number/Name) CB7 / *SIO Capability Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineers and Technical Assistance	Option/ CPFF	MAG Aerospace : Aberdeen, MD	-	-		12.713	Jul 2022	-		-		-	0.000	12.713	-
		Subtotal	-	-		12.713		-		-		-	0.000	12.713	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DA Gov Travel, Office Costs	TBD	USACE : Baltimore, MD	-	-		1.000		-		-		-	0.000	1.000	-
Program Support Costs	TBD	Multiple MIPRS and Functional Support Agreements : Hanover, MD	-	-		5.000	Jun 2022	-		-		-	0.000	5.000	-
		Subtotal	-	-		6.000		-		-		-	0.000	6.000	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Special Information Operations Cyber Capability Testing	TBD	Various : Multiple	-	-		4.000	Jan 2022	-		-		-	0.000	4.000	-
		Subtotal	-	-		4.000		-		-		-	0.000	4.000	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		22.713		-		-		-	0.000	22.713	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605225A / *SIO Capability Development*	**Project (Number/Name)** CB7 / *SIO Capability Development*

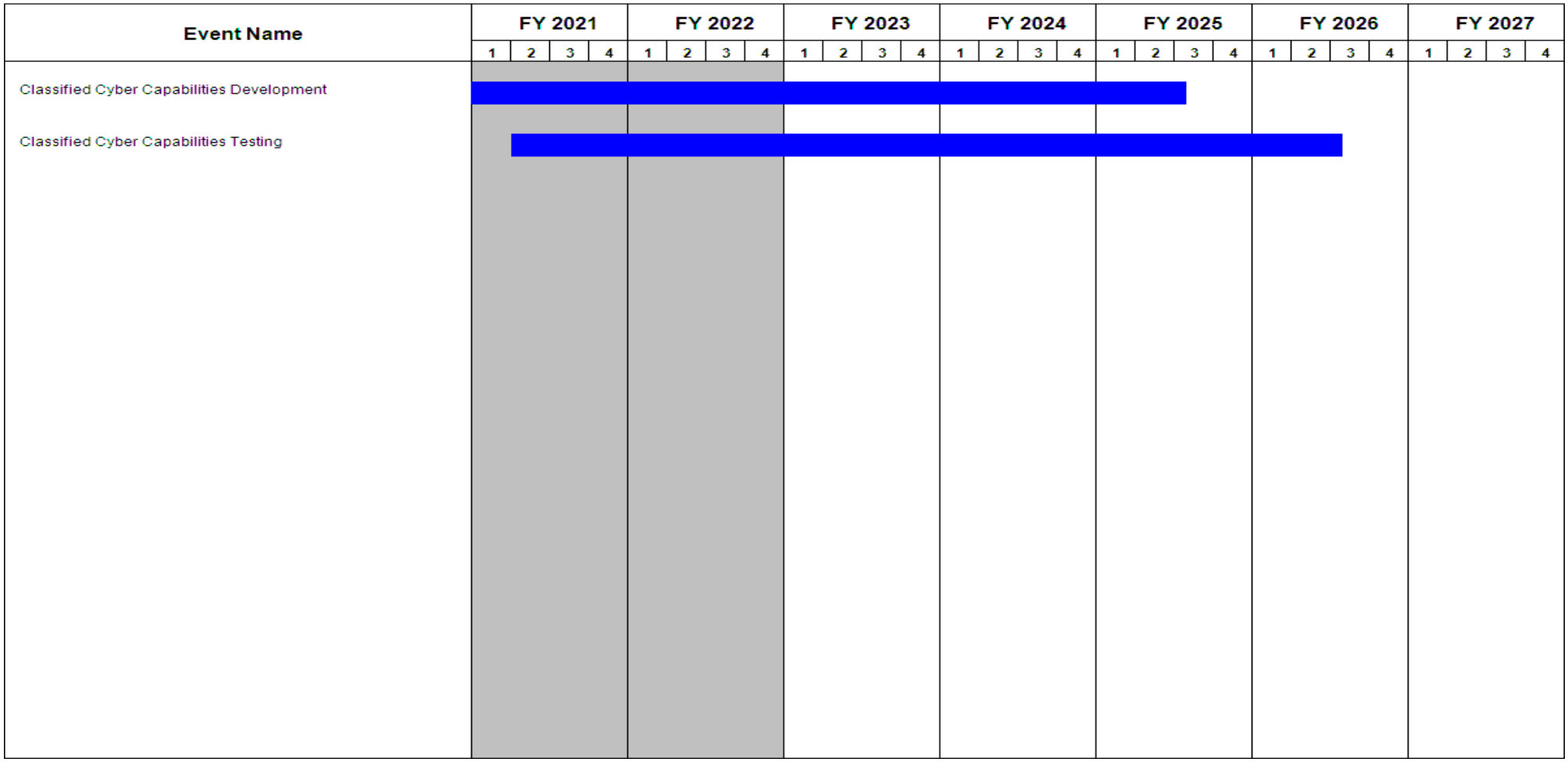


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605225A / *SIO Capability Development*	**Project (Number/Name)** CB7 / *SIO Capability Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Classified Cyber Capabilities Development	3	2020	3	2025
Classified Cyber Capabilities Testing	2	2021	3	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605231A *I Precision Strike Missile (PrSM)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	188.452	259.506	-	259.506	237.566	237.323	237.394	239.702	0.000	1,399.943
CO3: *Precision Strike Missile (PrSM)*	-	-	188.452	259.506	-	259.506	237.566	237.323	237.394	239.702	0.000	1,399.943

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Long Range Precision Fires Modernization Priority.

Precision Strike Missile (PrSM) is the Army's next generation surface-to-surface missile that replaces and improves upon Army Tactical Missile System (ATACMS) capabilities. The mission of PrSM is to attack/neutralize/suppress/destroy targets using missile delivered indirect precision fires. PrSM will provide Joint Force Commanders with a 24/7, all-weather capability to attack critical and time sensitive area and point targets including threat air defense, missile launchers, command and control centers, assembly/staging areas and high payoff targets at all depths of the multi-domain battlefield. PrSM will counter the enemy's ability to conduct combat maneuver and air defense operations.

PrSM requirements include: max range of greater than 400 kilometers (km), specified lethality against the designated target set, a Launch Pod Missile Container (LPMC) that holds two missiles, survivability in a threat environment, and compatibility with the existing launcher platforms (M270A2 Multiple Launch Rocket System (MLRS) and M142 High Mobility Artillery Rocket System (HIMARS)). PrSM will meet cluster and insensitive munition requirements and is designed with an open system architecture that provides the capability for future growth to counter new and emerging threats. Increment 2 of PrSM will include the ability to attack mobile or relocatable ground and maritime targets. Future PrSM increments will provide increased lethality against hardened targets and extend range capability.

FY 2023 base dollars ($259.506 million) supports continuation of PrSM Increment 1 Engineering and Manufacturing Development (EMD) and efforts to develop an Increment 2 prototype.

Increment 1 EMD activities include system level ground, safety and flight testing. PrSM will also conduct missile software testing, along with integration with the Advanced Field Artillery Tactical Data System (AFATDS). On-going PrSM model and simulation efforts will serve to validate and verify system requirements. EMD design and test efforts support a robust and thorough flight test schedule.

Increment 2 activities include transitioning the Land-Based Anti-Ship Missile (LBASM) seeker from the Science and Technology sector to the PrSM product office. LBASM/PrSM development and integration efforts will culminate in FY24/25 with PrSM Increment 2 prototype flight testing.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605231A / *Precision Strike Missile (PrSM)*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	0.000	188.452	0.000	-	0.000
Current President's Budget	0.000	188.452	259.506	-	259.506
Total Adjustments	0.000	0.000	259.506	-	259.506
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	259.506	-	259.506

Change Summary Explanation

FY 2022 President's Budget submission did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605231A / *Precision Strike Missile (PrSM)*	Project (Number/Name) CO3 / *Precision Strike Missile (PrSM)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CO3: *Precision Strike Missile (PrSM)*	-	-	188.452	259.506	-	259.506	237.566	237.323	237.394	239.702	0.000	1,399.943
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Precision Strike Missile (PrSM) is the Army's next generation surface-to-surface missile that replaces and improves upon Army Tactical Missile System (ATACMS) capabilities. The mission of PrSM is to attack/neutralize/suppress/destroy targets using missile delivered indirect precision fires. PrSM will provide Joint Force Commanders with a 24/7, all-weather capability to attack critical and time sensitive area and point targets including threat air defense, missile launchers, command and control centers, assembly/staging areas and high payoff targets at all depths of the multi-domain battlefield. PrSM will counter the enemy's ability to conduct combat maneuver and air defense operations.

PrSM requirements include: max range of greater than 400 kilometers (km), specified lethality against the designated target set, a Launch Pod Missile Container (LPMC) that holds two missiles, survivability in a threat environment, and compatibility with the existing launcher platforms (M270A2 Multiple Launch Rocket System (MLRS) and M142 High Mobility Artillery Rocket System (HIMARS)). PrSM will meet cluster and insensitive munition requirements and is designed with an open system architecture that provides the capability for future growth to counter new and emerging threats. Increment 2 of PrSM will include the ability to attack mobile or relocatable ground and maritime targets. Future PrSM increments will provide increased lethality against hardened targets and extend range capability.

FY 2023 base dollars ($259.506 million) supports continuation of PrSM Increment 1 Engineering and Manufacturing Development (EMD) and efforts to develop an Increment 2 prototype.

Increment 1 EMD activities include system level ground, safety and flight testing. PrSM will also conduct missile software testing, along with integration with the Advanced Field Artillery Tactical Data System (AFATDS). On-going PrSM model and simulation efforts will serve to validate and verify system requirements. EMD design and test efforts support a robust and thorough flight test schedule.

Increment 2 activities include transitioning the Land-Based Anti-Ship Missile (LBASM) seeker from the Science and Technology sector to the PrSM product office. LBASM/PrSM development and integration efforts will culminate in FY24/25 with PrSM Increment 2 prototype flight testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Increment 1: Engineering and Manufacturing Development (EMD)	-	132.347	170.946
Description: EMD activities to develop the Army's next generation missile capability that doubles volume of fire, meets range requirements by exceeding 400km, provides required lethality for both point and area targets, ensures survivability, meets cluster munition policy requirements, and provides an open system approach. PrSM provides field artillery units with a deep-strike			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605231A / *Precision Strike Missile (PrSM)*	**Project (Number/Name)** CO3 / *Precision Strike Missile (PrSM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
capability while supporting Brigade, Division, Corps, Army, Theater, Joint and Coalition forces in full, limited or expeditionary operations. ***FY 2022 Plans:*** Continue EMD efforts awarded in FY 2021. Subsequent to receipt of hardware items procured in FY 2021 for system level qualification the contractor will build test articles for delivery to the Government to conduct system level ground and safety production qualification testing. Assemble (12) flight test articles and representative targets in support of FY 2023 Production Qualification flight tests. Finalize integration of Government missile/ launcher fire control system software and hardware interfaces utilizing an Engineering Release of AFATDS to assess ballistic algorithms and world-wide conditions in preparation for FY 2023 HIMARS Software Integration Testing (SIT), Limited User Test (LUT), and Early Operational Capability (EOC) fielding. Continued Government Survivability testing and analysis to ensure that missile capabilities remain survivable against emerging threat systems. ***FY 2023 Plans:*** The PrSM program will continue executing Increment 1 EMD with system qualification and ground and flight tests to support production of EOC missile deliveries planned for deployment at the end of FY23. Government developed launcher software and testing efforts will integrate the tactical software solution into AFATDS. PrSM will continue investment in M-Code A-PNT compliance efforts. PrSM will execute six Pre-EOC flight tests focused on system level hardware / software integration, performance and safety. The capstone event will be a Limited User Test (LUT) (2 missiles flight) in 4QFY23. Upon successful performance of the LUT, PrSM will staff an Urgent Materiel Release (UMR) in support of fielding an EOC capability in FY23. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** $38.6M increase from FY22-23 is due to increased software development and testing costs required to support a 4QFY23 fielding of a PrSM capability. Within PM STORM, A-PNT is a common interest for both the PrSM and Guided Multiple Launch Rocket System (GMLRS) programs, and is a shared effort between the two. A-PNT efforts were funded in FY 2022 by the GMLRS program.			
Title: Increment 2 Integration ***Description:*** Activities to integrate Science and Technology (S&T) efforts into PrSM Increment 1 will result in an Increment 2 missile. ***FY 2022 Plans:*** FY 2022 funding supports refactoring the Land Based Anti-Ship seeker technology developed by the Combat Capabilities Development Command Aviation & Missile Center (CCDC AvMC) into the Precision Strike Missile (PrSM) program to facilitate PrSM Increment 2 Prototype flight testing activities in FY 2024. These efforts are long lead activities (i.e. hardware and laboratory	-	49.227	88.560

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605231A / *Precision Strike Missile (PrSM)*	**Project (Number/Name)** CO3 / *Precision Strike Missile (PrSM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
assets), Development, and Demonstration (D&D) activities that support the integration of CCDC AvMC sensor technology into the PrSM program to provide a PrSM Increment 2 capability. D&D activities include program development and plans, engineering development including a System Requirements Review, integration and test, and risk reduction activities. ***FY 2023 Plans:*** FY 2023 funding supports the continued long lead and D&D activities necessary to transition the seeker technology into the PrSM program. This includes continued CCDC AvMC engineering support to PrSM, conduct of an Initial Design Review (IDR), and Development Verification Testing (DVT) of hardware in PrSM form factor. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** $39.3M increase is due to increased D&D activities to produce a prototype PrSM Increment 2 missile in support of prototype flight testing.			
Title: FY 2022 SBIR/STTR Transfer ***Description:*** FY 2022 Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	6.878	-
Accomplishments/Planned Programs Subtotals	-	188.452	259.506

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0607134A: *Long Range Precision Fires (LRPF)*	100.146	-	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• C29600: *PRECISION STRIKE MISSILE (PRSM)*	59.929	166.130	213.172	-	213.172	339.302	408.505	439.882	436.358	0.000	2,063.278

Remarks

D. Acquisition Strategy

PrSM received Milestone A approval in 2017. The program awarded two OTA Technology Maturation and Risk reduction (TMRR) contracts to compete PrSM's initial design, development, prototyping, and risk-reduction. In 2017, the program was designated as ACAT 1-B. In 2018, Army leaders directed PrSM to accelerate the

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605231A / *Precision Strike Missile (PrSM)*	**Project (Number/Name)** CO3 / *Precision Strike Missile (PrSM)*

program to provide an Early Operational Capability (EOC) by FY 2023. The program awarded an Enhanced TMRR (E-TMRR) contract to reduce risk, conduct prototype flight-testing and conduct several Engineering and Manufacturing Development (EMD) activities to accelerate development. In FY 2020, one contractor experienced a rocket motor failure and chose to opt out of the program. In 2020, Army senior leaders approved program acceleration using a single vendor. The program is executing E-TMRR as a sole-source effort to demonstrate threshold program requirements. The contractor has conducted six (6) successful flight tests to date, and is conducting subassembly qualification tests while establishing a pilot production line.

The program received Milestone B approval in FY 2021 and awarded an EMD and initial EOC contract. The program is executing to begin delivering EOC missiles in FY 2023.

PrSM is also working with DEVCOM to plan for the integration of a multi-mode seeker to integrate into the baseline missile. The PrSM Increment 2 capability plans to deliver EOC missiles in FY 2027.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605231A / *Precision Strike Missile (PrSM)*	Project (Number/Name) CO3 / *Precision Strike Missile (PrSM)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	MIPR	Various : RSA, AL	-	-		5.442	Apr 2022	5.507	Apr 2023	-		5.507	0.000	10.949	-
FY 2022 SBIR/STTR Transfer	TBD	Various : Various	-	-		6.878		-		-		-	0.000	6.878	-
		Subtotal	-	-		12.320		5.507		-		5.507	0.000	17.827	N/A

Remarks

RSA - Redstone Arsenal, Alabama

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PrSM Increment 1 EMD - 1 Vendor (Lockheed Martin)	SS/FFP	LMMFCS : Grand Prairie, TX	-	-		114.068	Jan 2022	125.735	Jan 2023	-		125.735	0.000	239.803	-
PrSM Increment 2 - 1 Vendor (Lockheed Martin)	SS/CPIF	LMMFCS : Grand Prairie, TX	-	-		20.825	Oct 2021	47.790	Oct 2022	-		47.790	0.000	68.615	-
PrSM Increment 2 Seeker Integration	MIPR	CCDC AvMC : RSA, AL	-	-		22.134	Dec 2021	25.830	Dec 2022	-		25.830	0.000	47.964	-
Development Engineering Support	MIPR	AMCOM/CCDC AvMC : RSA, AL	-	-		5.134	Nov 2021	5.557	Nov 2022	-		5.557	0.000	10.691	-
Increment 1 - Software Development	MIPR	S3I : RSA, AL	-	-		-		10.354	Feb 2023	-		10.354	0.000	10.354	-
Increment 2 - Software Development	MIPR	S3I : RSA, AL	-	-		-		7.247	Feb 2023	-		7.247	0.000	7.247	-
A-PNT	MIPR	CCDC AvMC : RSA, AL	-	-		-		11.500	Dec 2022	-		11.500	0.000	11.500	-
Software Development	MIPR	S3I : RSA, AL	-	-		5.252	Feb 2022	-		-		-	0.000	5.252	-
		Subtotal	-	-		167.413		234.013		-		234.013	0.000	401.426	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605231A / *Precision Strike Missile (PrSM)*	Project (Number/Name) CO3 / *Precision Strike Missile (PrSM)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

AMCOM - Aviation and Missile Command; A-PNT - Assured-Position, Navigation and Timing; CCDC AvMC - Combat Capabilities Development Center Aviation & Missile Command; LMMFCS - Lockheed Martin Missiles and Fire Control System; RSA - Redstone Arsenal, Alabama; S3I - Systems Simulation, Software and Integration; TX - Texas

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Quality, Safety, SETA Support, and Analysis	SS/T&M	Various; Competitive SETA Contract Award in Aug 2021 : RSA, AL	-	-		4.169	Dec 2021	2.554	Dec 2022	-		2.554	0.000	6.723	-
		Subtotal	-	-		4.169		2.554		-		2.554	0.000	6.723	N/A

Remarks

RSA - Redstone Arsenal, AL; SETA - Systems Engineering and Technical Assistance

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment 1 - Test Support	MIPR	WSMR; RTC : WSMR,NM; RSA, AL	-	-		-		13.645	Dec 2022	-		13.645	0.000	13.645	-
Increment 2 - Test Support	MIPR	WSMR; RTC : WSMR,NM; RSA, AL	-	-		-		3.787	Dec 2022	-		3.787	0.000	3.787	-
Test Support	MIPR	WSMR; RTC : WSMR,NM; RSA, AL	-	-		4.550	Dec 2021	-		-		-	0.000	4.550	-
		Subtotal	-	-		4.550		17.432		-		17.432	0.000	21.982	N/A

Remarks

RTC - Redstone Test Center; RSA - Redstone Arsenal, Alabama; WSMR, NM - White Sands Missile Range, New Mexico

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605231A / *Precision Strike Missile (PrSM)*	Project (Number/Name) CO3 / *Precision Strike Missile (PrSM)*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		188.452		259.506		-		259.506	0.000	447.958	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605231A / *Precision Strike Missile (PrSM)*	**Project (Number/Name)** CO3 / *Precision Strike Missile (PrSM)*

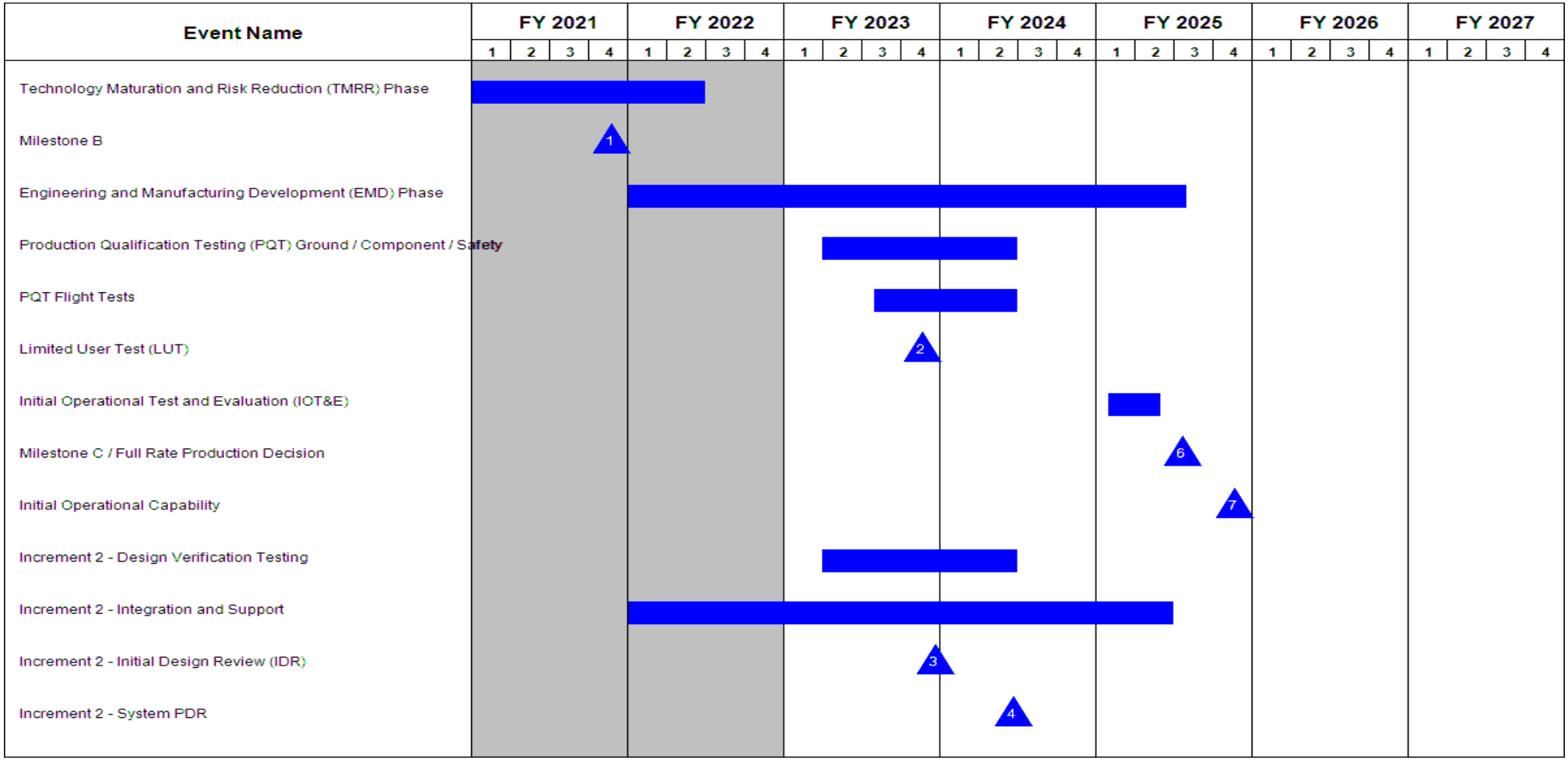


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605231A / *Precision Strike Missile (PrSM)*	**Project (Number/Name)** CO3 / *Precision Strike Missile (PrSM)*

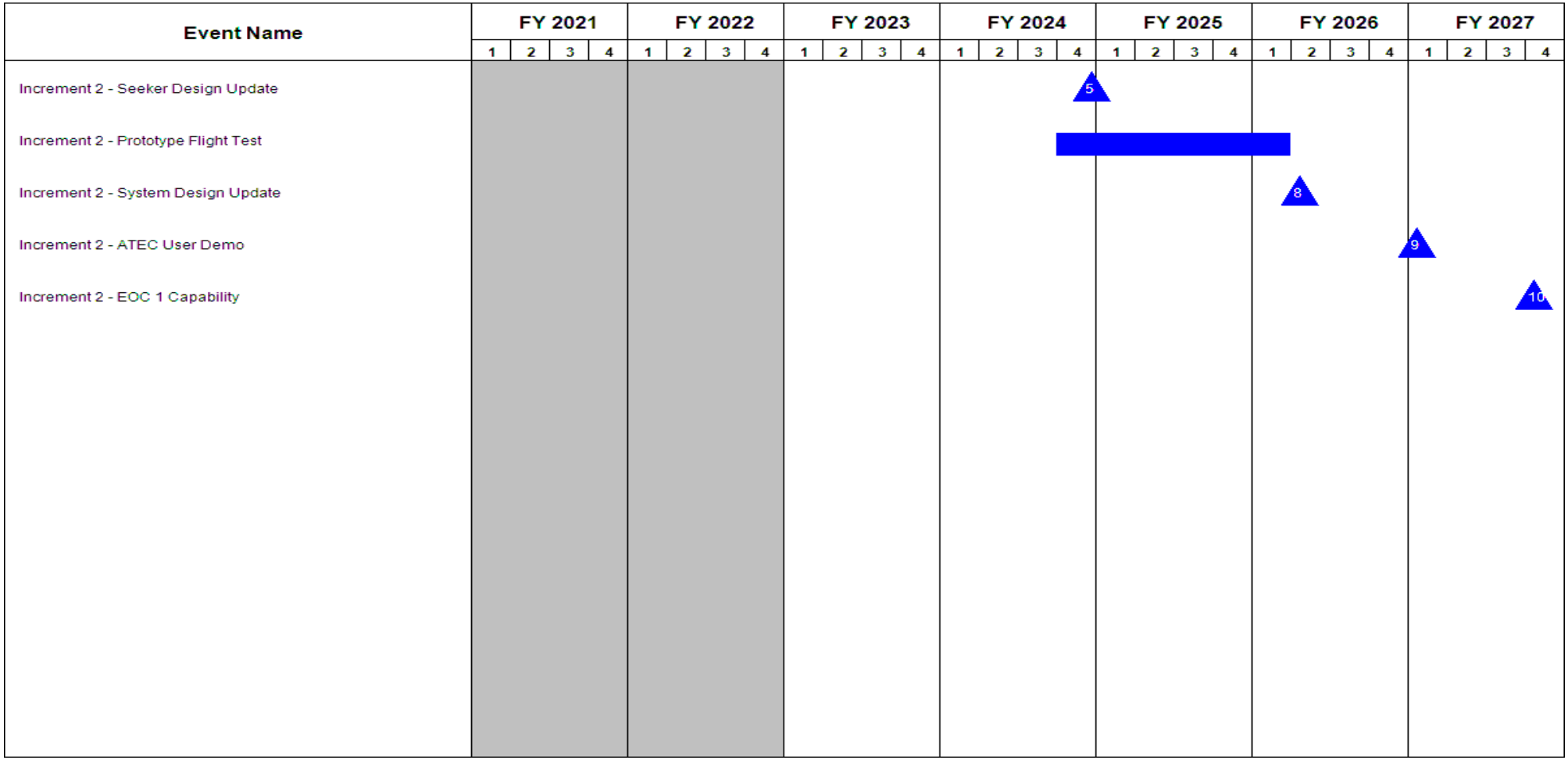


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605231A / *Precision Strike Missile (PrSM)*	**Project (Number/Name)** CO3 / *Precision Strike Missile (PrSM)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technology Maturation and Risk Reduction (TMRR) Phase	1	2020	2	2022
Milestone B	4	2021	4	2021
Engineering and Manufacturing Development (EMD) Phase	1	2022	3	2025
Production Qualification Testing (PQT) Ground / Component / Safety	2	2023	2	2024
PQT Flight Tests	3	2023	2	2024
Limited User Test (LUT)	4	2023	4	2023
Initial Operational Test and Evaluation (IOT&E)	1	2025	2	2025
Milestone C / Full Rate Production Decision	3	2025	3	2025
Initial Operational Capability	4	2025	4	2025
Increment 2 - Design Verification Testing	2	2023	2	2024
Increment 2 - Integration and Support	1	2022	2	2025
Increment 2 - Initial Design Review (IDR)	4	2023	4	2023
Increment 2 - System PDR	2	2024	2	2024
Increment 2 - Seeker Design Update	4	2024	4	2024
Increment 2 - Prototype Flight Test	4	2024	1	2026
Increment 2 - System Design Update	2	2026	2	2026
Increment 2 - ATEC User Demo	1	2027	1	2027
Increment 2 - EOC 1 Capability	4	2027	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605232A *I Hypersonics EMD*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	111.473	633.499	-	633.499	944.768	940.402	422.581	420.219	0.000	3,472.942
HX2: *Hypersonic Weapon (LRHW)*	-	-	111.473	633.499	-	633.499	944.768	940.402	422.581	420.219	0.000	3,472.942

Note

Funds BA5 activities managed by the Program Executive Office Missiles and Space (PEO MS) under Program Element (PE) 0605232A, in preparation for the FY24 transition of the BA4 activities from the Rapid Capabilities and Critical Technologies Office (RCCTO) under PE 0604182A, which continues Long Range Hypersonic Weapon (LRHW) activities.

A. Mission Description and Budget Item Justification

This funding is directly aligned to the Army's precision fires modernization effort.

PE 0605232A / Hypersonics "EMD" efforts fund the continuous hypersonic effort. Hypersonics funds the Program Executive Office, Missiles and Space continuation of the Army's Hypersonic efforts beyond the Rapid Capabilities and Critical Technologies Office (RCCTO) hypersonic activities. This includes the continuous development and prototype fielding of a Long Range Hypersonic Weapon to suppress adversary Long Range Fires and engage other high payoff/time critical targets. The LRHW system will provide the Army a strategic attack weapon system to defeat Anti Access/Area Denial (A2/AD) capabilities, suppress adversary Long Range Fires, and engage other high payoff/time critical targets. The Army is working collaboratively with the Navy in the development of the LRHW. Common with the Navy, the LRHW system includes a Common Hypersonic Glide Body (CHGB) and common 34.5 inch booster.

PEO MS transition activities are performed to support continuous development and production of ground support equipment and Battery 2 training, operational, and reload missiles, as well as Long Range Fires technologies growth, testing, and fielding.

The LRHW system consists of the CHGB with the Navy 34.5 inch booster, a Battery Operations Center (BOC) for command and control (C2), and the Transporter Erector Launcher (TEL). Each TEL holds 2 canisterized rounds. Each LRHW Battery contains eight (8) All Up Rounds (AUR) with canister (AUR+C), one (1) BOC, and four (4) TELs. Additionally, the LRHW will use a modified version of an existing C2 network, the Advanced Field Artillery Tactical Data System (AFATDS).

Prior development effort is funded in PE 0604182A.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605232A / *Hypersonics EMD*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	0.000	111.473	0.000	-	0.000
Current President's Budget	0.000	111.473	633.499	-	633.499
Total Adjustments	0.000	0.000	633.499	-	633.499
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	633.499	-	633.499

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605232A / *Hypersonics EMD*	Project (Number/Name) HX2 / *Hypersonic Weapon (LRHW)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
HX2: *Hypersonic Weapon (LRHW)*	-	-	111.473	633.499	-	633.499	944.768	940.402	422.581	420.219	0.000	3,472.942
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funds BA5 activities managed by the Program Executive Office Missiles and Space (PEO MS) under Program Element (PE) 0605232A, in preparation for the FY24 transition of the BA4 activities from the Rapid Capabilities and Critical Technologies Office (RCCTO) under PE 0604182A, and continues Long Range Hypersonic Weapon (LRHW) activities.

A. Mission Description and Budget Item Justification

This funding is directly aligned to the Army's precision fires modernization effort.

PE 0605232A / Hypersonics "EMD" efforts fund the continuous hypersonic effort. Hypersonics funds the Program Executive Office, Missiles and Space continuation of the Army's Hypersonic efforts beyond the Rapid Capabilities and Critical Technologies Office (RCCTO) hypersonic activities. This includes the continuous development and prototype fielding of a Long Range Hypersonic Weapon to suppress adversary Long Range Fires and engage other high payoff/time critical targets. The LRHW system will provide the Army a strategic attack weapon system to defeat Anti Access/Area Denial (A2/AD) capabilities, suppress adversary Long Range Fires, and engage other high payoff/time critical targets. The Army is working collaboratively with the Navy in the development of the LRHW. Common with the Navy, the LRHW system includes a Common Hypersonic Glide Body (CHGB) and common 34.5 inch booster.

PEO MS transition activities are performed to support continuous development and production of ground support equipment and Battery 2 training, operational, and reload missiles, as well as Long Range Fires technologies growth, testing, and fielding.

The LRHW system consists of the CHGB with the Navy 34.5 inch booster, a Battery Operations Center (BOC) for command and control (C2), and the Transporter Erector Launcher (TEL). Each TEL holds 2 canisterized rounds. Each LRHW Battery contains eight (8) All Up Rounds (AUR) with canister (AUR+C), one (1) BOC, and four (4) TELs. Additionally, the LRHW will use a modified version of an existing C2 network, the Advanced Field Artillery Tactical Data System (AFATDS).

Prior development effort is funded in PE 0604182A.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Long Range Hypersonic Weapon	-	-	625.393
Description: Funding is provided for planning, prototype manufacturing, testing and delivery of the Long Range Hypersonic Weapon and consists of four lines of effort:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
CHGB with TPS Development, purchase of hardware, integration, assembly, test and delivery of the Common Hypersonic Glide Body (CHGB) system for the All Up Round and Canister (AUR+C). Remain technologically capable to support CHGB production for requiring services. All Up Round and Canister (AUR+C) Technology development, purchase of hardware, integration, assembly, test and delivery of the All Up Round and Canister (AUR +C). Ground Support Equipment (GSE) Provides for planning, manufacturing and integration efforts for LRHW reload trailers, LRHW technology development and deployment, and additional training development (enhances existing and incorporates detailed operator and maintainer skills). Designs training aid devices, simulations, and simulator in accordance with the system training plan. Develops the overall Systems Integration and training for the All Up Round and Canister (AUR+C) for the LRHW program. Test and Evaluation Test and evaluation includes test planning, execution and analysis of POR JFCs and Army operational and developmental tests. Also provides required support for environmental testing. ***FY 2023 Plans:*** FY23 Base funds continue transition efforts for the LRHW prototype battery from RCCTO to PEO MS as a POR. Supports further development and demonstration of LRHW system components and training; purchases basic load and reload All Up Rounds and Canisters (AUR+C); designs reload trailers; enhances training in accordance with system training plan; performs logistics analysis required for materiel release; and provides resources to stand up a PEO MS project office. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increase from FY 2022 to FY 2023 is due to program of record initiation and transition efforts for the LRHW prototype battery from RCCTO to PEO MS as a POR. Cost drivers for the increase include purchase of basic load and reload AUR+C, reload trailer design, and testing requirements.			
Title: System Engineering/Program Management ***Description:*** Includes the Government PM's office (civilian, SETA, and matrix personnel) to support RDT&E efforts. This encompasses overall planning, direction, and control of the definition, development, and production of the system/program, including functions of logistics engineering and integrated logistics support. ***FY 2023 Plans:***	-	-	8.106

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY23 Plans continue transition efforts for the LRHW prototype Battery from RCCTO to PEO MS as a POR. Stands up project office, supports further analysis and assessments for development and demonstration of LRHW system components and training. Continues logistics analysis required for the POR. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding increase from FY 2022 to FY 2023 is due to program initiation and contracting efforts for LRHW GSE, missile Long Lead requirements, Missile buys for Battery 2 with reloads, testing requirements, and logistics analysis for system supportability.			
Title: Training/Evaluation/Certification Hardware - Live AUR+C and Training Canisters ***Description:*** Purchase live AUR+C components and training canisters to support LRHW training, evaluation, certification, and delivery of LRHW battery 2. ***FY 2022 Plans:*** Purchase live AUR+C components and training canisters to support LRHW training, evaluation, certification, and delivery of LRHW battery 2. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decrease in FY23 due to the purchase of 6 additional missile assets in FY22.	-	101.920	-
Title: Development Engineering/Studies ***Description:*** Continues analysis for investment determination required to produce data required for program of record (POR) documentation for fielded equipment. ***FY 2022 Plans:*** FY22 Base funds initiate transition efforts for the LRHW prototype battery from RCCTO to PEO MS as a POR. Initiates project office planning efforts, supports further development and demonstration of LRHW training, and performs logistics analysis and assessments on delivered equipment to further mature the LRHW prototype design. Includes development engineering for LRHW hardware components and systems engineering support to modify the battery configuration delivered by RCCTO. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease of FY23 funding is due to transition efforts from the Army Rapid Capabilities and Critical Technologies Office (RCCTO) to PEO Missiles and Space.	-	5.484	-
Title: FY 2022 SBIR/STTR Transfer ***FY 2022 Plans:*** FY 2022 SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	4.069	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 SBIR/STTR Transfer			
Accomplishments/Planned Programs Subtotals	-	111.473	633.499

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0604182A: *Hypersonics*	841.666	315.131	173.168	-	173.168	43.244	28.014	-	-	0.000	1,401.223

Remarks

D. Acquisition Strategy

The Army will field two additional Hypersonic Weapons System Batteries with residual operational capability NLT FY 2025 and FY2027, respectively. These Battery Level assets are part of the Long Range Fires Battalion in support of Multi-domain Operations. RCCTO will provide CLS for one year following the delivery of the first LRHW Battery in FY23. PEO MS will leverage current RCCTO contract vehicles, Navy contract vehicles (Navy Conventional Prompt Strike (CPS) contract with Lockheed Martin)for the missile booster and integration, and initiate stand-alone Other Transaction Authority's (OTA's) for follow on Ground Support Equipment and CHGB efforts. Long-lead procurement is required 2 years prior to delivery resulting in a requirement to execute funding in FY 2022 to meet the FY 2024 manufacturing and FY 2025 fielding requirement. Quick awards of the OTA and Navy CPS contracts ensure procurements are executed with adequate time to execute the funds and program requirements. A SETA contract provides support to the Government Project Office. The PEO MS transition team is currently embedded within RCCTO to ensure an efficient transition in FY 2024 as a program of record and to facilitate the initiation of follow-on contracts required for continuous production. PEO MS transition activities, are performed in support of continuous development and production of LRHW systems, as well as Long Range Fires technologies growth, testing, and fielding.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605232A / *Hypersonics EMD*	Project (Number/Name) HX2 / *Hypersonic Weapon (LRHW)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering/ Program Management	Various	Various : Various	-	-		5.484	Dec 2021	8.106	Dec 2022	-		8.106	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		4.069		-		-		-	0.000	4.069	-
		Subtotal	-	-		9.553		8.106		-		8.106	Continuing	Continuing	N/A

Remarks

Includes the Government PM's office (civilian, SETA, and matrix personnel) to support RDT&E efforts. This encompasses overall planning, direction, and control of the definition, development, and production of the system/program, including functions of logistics engineering and integrated logistics support.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Engineering/ Studies	C/TBD	Various : Various	-	-		4.881	Jan 2022	15.643	Jan 2023	-		15.643	Continuing	Continuing	-
Development Engineering/ Hardware	TBD	Various : Various	-	-		97.039	Mar 2022	596.631	Mar 2023	-		596.631	Continuing	Continuing	-
		Subtotal	-	-		101.920		612.274		-		612.274	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support	MIPR	Various : Various	-	-		-		13.119	Dec 2022	-		13.119	Continuing	Continuing	-
		Subtotal	-	-		-		13.119		-		13.119	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		111.473		633.499		-		633.499	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

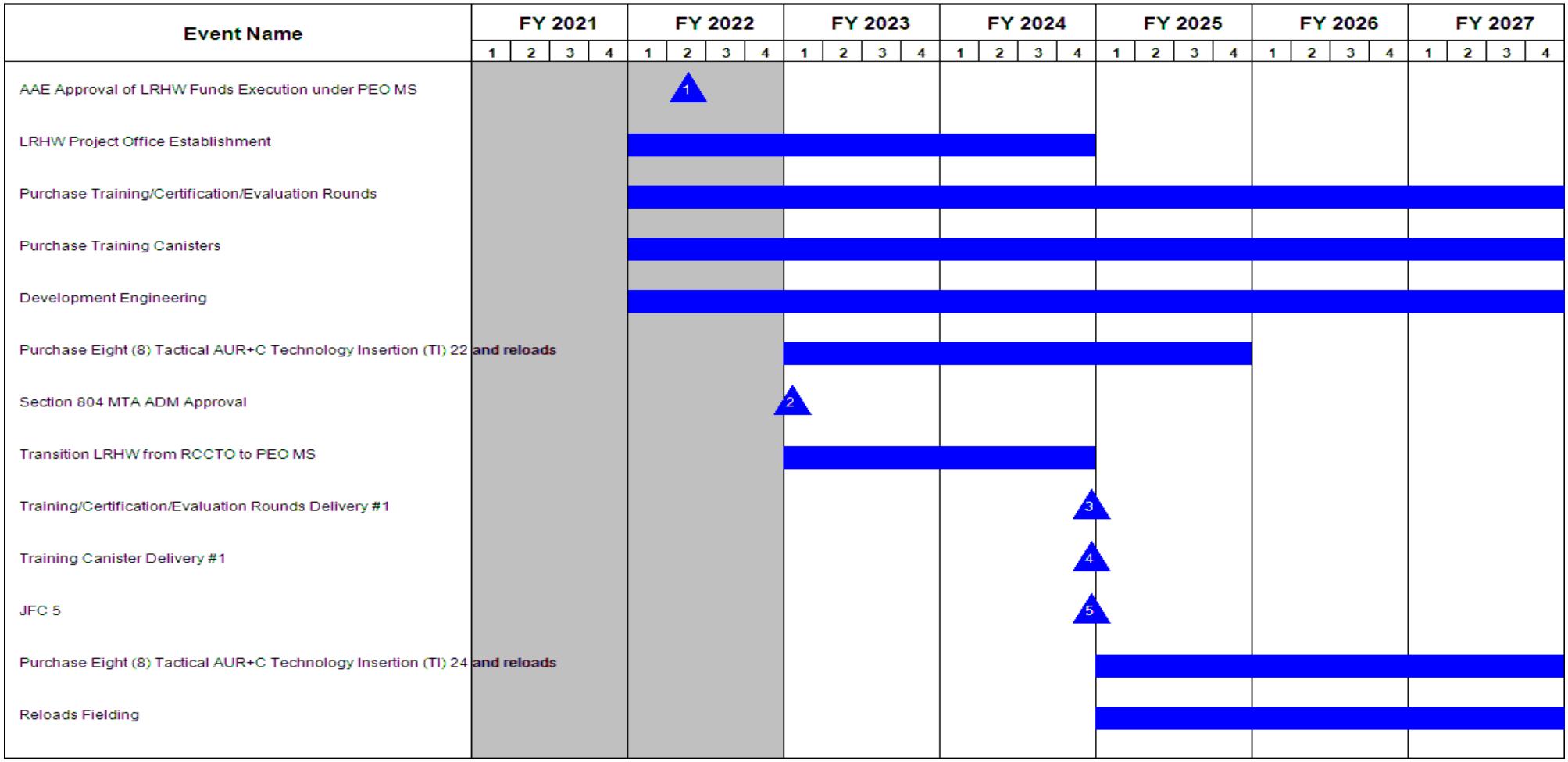


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

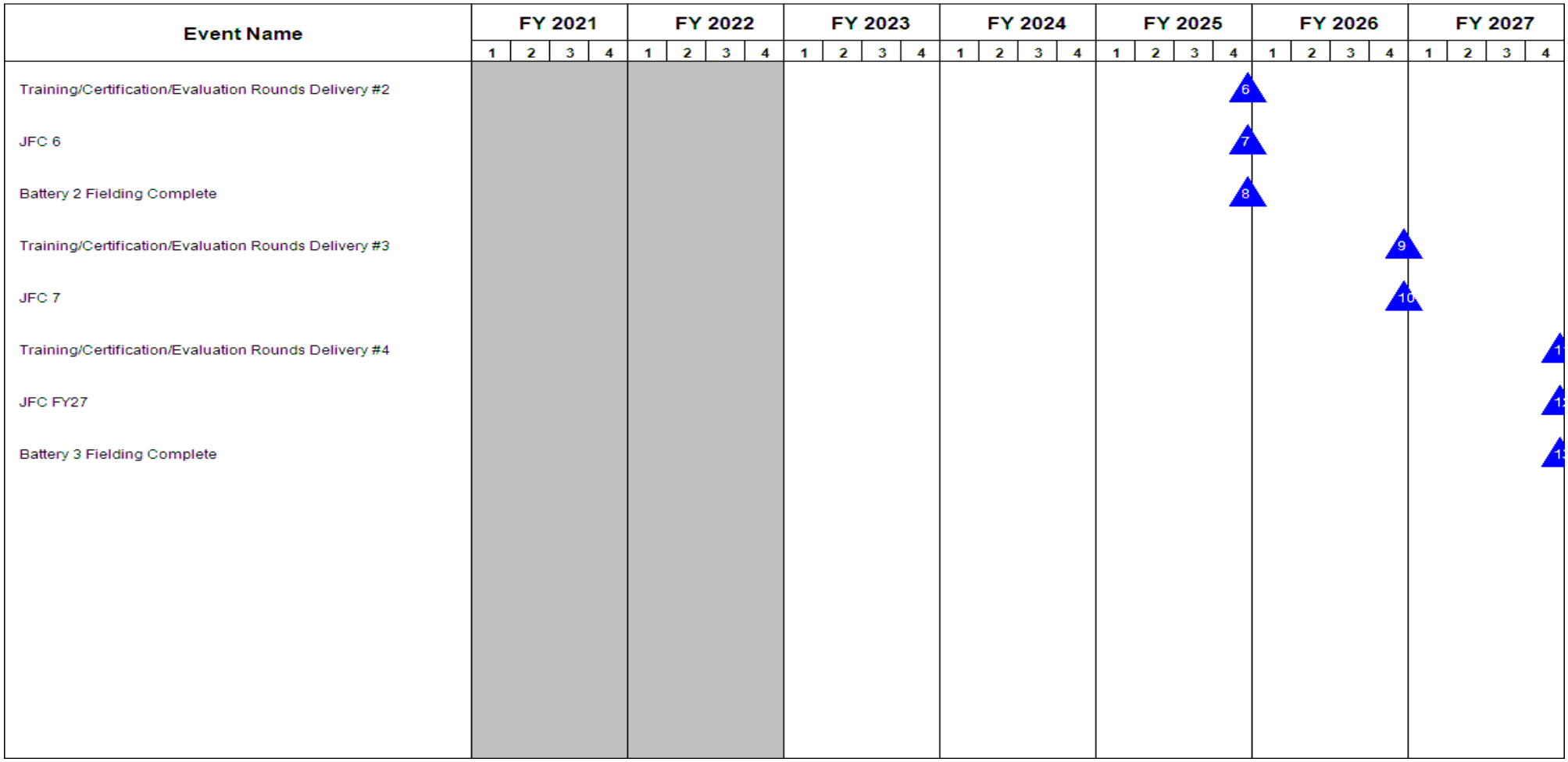


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605232A / *Hypersonics EMD*	**Project (Number/Name)** HX2 / *Hypersonic Weapon (LRHW)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AAE Approval of LRHW Funds Execution under PEO MS	2	2022	2	2022
LRHW Project Office Establishment	1	2022	4	2024
Purchase Training/Certification/Evaluation Rounds	1	2022	4	2028
Purchase Training Canisters	1	2022	4	2028
Development Engineering	1	2022	4	2028
Purchase Eight (8) Tactical AUR+C Technology Insertion (TI) 22 and reloads	1	2023	4	2025
Section 804 MTA ADM Approval	1	2023	1	2023
Transition LRHW from RCCTO to PEO MS	1	2023	4	2024
Training/Certification/Evaluation Rounds Delivery #1	4	2024	4	2024
Training Canister Delivery #1	4	2024	4	2024
JFC 5	4	2024	4	2024
Purchase Eight (8) Tactical AUR+C Technology Insertion (TI) 24 and reloads	1	2025	4	2027
Reloads Fielding	1	2025	4	2028
Training/Certification/Evaluation Rounds Delivery #2	4	2025	4	2025
JFC 6	4	2025	4	2025
Battery 2 Fielding Complete	4	2025	4	2025
Training/Certification/Evaluation Rounds Delivery #3	4	2026	4	2026
JFC 7	4	2026	4	2026
Training/Certification/Evaluation Rounds Delivery #4	4	2027	4	2027
JFC FY27	4	2027	4	2027
Training/Certification/Evaluation Rounds Delivery #5	4	2028	4	2028
Battery 3 Fielding Complete	4	2027	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605233A *I Accessions Information Environment (AIE)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	16.790	13.647	-	13.647	13.636	11.879	9.616	7.066	0.000	72.634
CP8: *Accessions Information Environment (AIE)*	-	-	16.790	13.647	-	13.647	13.636	11.879	9.616	7.066	0.000	72.634

A. Mission Description and Budget Item Justification

AIE supports the Army recruiter's mission to find, manage, and enlist recruits. AIE aligns authorities, responsibilities, and resources for total Army accessions. It provides the Army's strength through its four missions: (1) Enlist Soldiers, (2) Commission Officers, (3) Fulfill In-Service requirements, and (4) Support and sustain. AIE will replace 11 legacy systems with 33 modules of the current legacy Accessions IT systems which have experienced frequent outages and unstable performance, directly impairing the Army's ability to make its recruiting mission. Successful implementation is of utmost priority for the enterprise. AIE is a critical Army modernization effort to re-engineer the business processes for Army Accessions and to ensure the Army can acquire the best qualified talent, meet manning requirements and readiness objectives. The delivery of AIE will provide an enterprise level capability for recruiting Army Soldiers across all components, enabling transparent and efficient workforce accessions. AIE is a COTS based information technology (IT) software system that will modernize the AE. Key AIE functions/core capabilities include: lead generation & management, prospecting, interviewing, processing, pay & incentives, intelligence, marketing, training/leader development. This effort will ultimately ensure the accessions workforce has the information needed to engender commitments, lead future Soldiers, and engage communities in direct contact with young Americans.

Accessions Information Environment's (AIE's) RDT&E funding line transitioned to APE 655233CP8 in FY22. Prior to FY22, AIE's RDT&E APE was 655013FL9. AIE's OPA line also transitioned in FY22, from APE BE4164000 to B45015000.

FY 2023 RDT&E funding supports iterative design configuration for AIE Solution, including requirements analysis, business process reengineering, interface development, integration, cybersecurity, systems engineering, developer and test software licenses, Test & Evaluation, Cloud Hosting, and ongoing analysis of potential alternatives to support solution requirements. AIE FY23 RDT&E funded activity is critical in that it supports the deployment of the AIE system to the first wave of users.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605233A / *Accessions Information Environment (AIE)*

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	18.790	0.000	-	0.000
Current President's Budget	0.000	16.790	13.647	-	13.647
Total Adjustments	0.000	-2.000	13.647	-	13.647
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	13.647	-	13.647

Change Summary Explanation

Fiscal Year 2023 (FY23) funding increase reflects the fact that the FY22 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605233A / *Accessions Information Environment (AIE)*	Project (Number/Name) CP8 / *Accessions Information Environment (AIE)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CP8: *Accessions Information Environment (AIE)*	-	-	16.790	13.647	-	13.647	13.636	11.879	9.616	7.066	0.000	72.634
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

AIE supports the Army recruiter's mission to find, manage, and enlist recruits. AIE aligns authorities, responsibilities, and resources for total Army accessions. It provides the Army's strength through its four missions: (1) Enlist Soldiers, (2) Commission Officers, (3) Fulfill In-Service requirements, and (4) Support and sustain. AIE will replace 11 legacy systems with 33 modules of the current legacy Accessions IT systems which have experienced frequent outages and unstable performance, directly impairing the Army's ability to make its recruiting mission. Successful implementation is of utmost priority for the enterprise. AIE is a critical Army modernization effort to re-engineer the business processes for Army Accessions and to ensure the Army can acquire the best qualified talent, meet manning requirements and readiness objectives. The delivery of AIE will provide an enterprise level capability for recruiting Army Soldiers across all components, enabling transparent and efficient workforce accessions. AIE is a COTS based information technology (IT) software system that will modernize the AE. Key AIE functions/core capabilities include: lead generation & management, prospecting, interviewing, processing, pay & incentives, intelligence, marketing, training/leader development. This effort will ultimately ensure the accessions workforce has the information needed to engender commitments, lead future Soldiers, and engage communities in direct contact with young Americans.

FY 2023 RDT&E funding supports iterative design configuration for AIE Solution, including requirements analysis, business process reengineering, interface development, integration, cybersecurity, systems engineering, developer and test software licenses, Test & Evaluation, Cloud Hosting, and ongoing analysis of potential alternatives to support solution requirements. AIE FY23 RDT&E funded activity is critical in that it supports the deployment of the AIE system to the first wave of users.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Accessions Information Environment (AIE)	-	16.177	13.647
Description: AIE will provide a fully integrated enterprise level COTS-based capability enabling transparency, efficiency and effectiveness of the accessions workforce to acquire the best-qualified talent to meet Army recruiting and accessions requirements. It will ultimately replace the current legacy Accessions IT systems that have been in existence for over 30 years, and which have experienced frequent outages and unstable performance since FY18. April 2019 the Program awarded an Other Transaction Authority (OTA) Firm Fixed Price agreement with defined milestone payments based on technical performance achievements. Configuration of core capabilities will be ultimately deployed to 24,000+ end users. Through fact of life changes and performance of the solution provider, Wave 1 capability configuration has extended through FY22, utilizing current funding thresholds but adding future costs and schedule to complete full configuration of requirements.			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605233A / *Accessions Information Environment (AIE)*	**Project (Number/Name)** CP8 / *Accessions Information Environment (AIE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: In FY 2022, prototyping efforts will be at the height of work efforts under the DoD 5000.75 Acquisition, Testing and Deployment phase for Wave 2 and Wave 3 design, development, testing, software licensing, cloud hosting applications, and data storage to add additional functionality to Wave 1 capabilities, pay and incentives, intelligence, and marketing. ***FY 2023 Plans:*** FY 2023 RDT&E funding supports iterative design configuration for AIE Solution, including requirements analysis, business process reengineering, interface development, integration, cybersecurity, systems engineering, developer and test software licenses, Test & Evaluation, Cloud Hosting, and ongoing analysis of potential alternatives to support solution requirements. AIE FY23 RDT&E funded activity is critical in that it supports the deployment of the AIE system to the first wave 12,107 end users. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decrease reflects AIE's development schedule.			
Title: FY22 SBIR/STTR Transfer ***FY 2022 Plans:*** FY22 SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY22 SBIR/STTR Transfer	-	0.613	-
Accomplishments/Planned Programs Subtotals	-	16.790	13.647

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• B45015: *ACCESSIONS INFORMATION ENVIRONMENT*	-	39.635	43.767	-	43.767	-	-	-	-	0.000	83.402
• OMA - OMA/331715000/AIE: *Sustainment Support & CivPay*	-	14.596	63.047	-	63.047	60.503	62.417	63.047	70.100	Continuing	Continuing

Remarks

Note: Items referenced above correspond to the following data points:
1) B45015 represents new OPA line for planned execution FY22 - FY26 to support fielding efforts, Commercial off the Shelf (COTS) Software Licenses and Training.
2) OMA/33171500/AIE represents Other, Maintenance Army (OMA) execution FY22 - FY27.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605233A / *Accessions Information Environment (AIE)*	**Project (Number/Name)** CP8 / *Accessions Information Environment (AIE)*

D. Acquisition Strategy

AIE is following the tailored Acquisition process for Defense Business Systems (DBS) in accordance with DoD 5000.75 and is currently designated as a Business System Category (BCAT) I program. AIE is acquiring a COTS solution (application hosting and software as a service) to support the Army's Accessions Enterprise requirements. A competitive prototype contract was awarded on 30 April 2019 to execute the pilot phase.

AIE has transitioned from a 5 wave deployment plan to a 4 wave deployment plan. The new acquisition strategy is summarized as follows:

FY23 (Wave 1) - Complete development of the AIE system in preparation for deployment to first wave of users. The AIE system will be deployed to a small group of pilot users in FY22, defects will be tracked and addressed, and additional key capabilities will be added to the system in FY23. The AIE system will be deployed to Wave 1 users in FY23. The user base planned for FY23 includes US Army Recruiting Command (USAREC), Army National Guard (ARNG), and Center for Initial Military Training (CIMT). 12,107 users are scheduled for onboarding in FY23.

FY24 (Wave 2) - Development of the AIE system continues with addition of key capabilities. Exact capabilities depend on development status in FY24, but likely to be Pay & Incentives/Intelligence. The user base planned for FY24 also includes US Army Recruiting Command (USAREC), Army National Guard (ARNG), and Center for Initial Military Training (CIMT). An additional 8072 users are scheduled for onboarding in FY24.

FY25 (Wave 3) - Development of the AIE system continues with additional of more key capabilities. Exact capabilities depend on development status in FY25, but likely to be Training/Leader Development. The targeted user base in FY25 is USAREC Army Medical Department (AMEDD)/Special Operations Recruiting Battalion (SORB)/ Chaplain (CHAP). An additional 1318 users are scheduled for onboarding in FY25.

FY26 (Wave 4) - Final year of planned full development work for AIE. All key capabilities should be online at this point; development effort is "cleanup" focused. Goal is to address any remaining defects, refine key capabilities, and deploy AIE to remaining users. The targeted user base in FY26 is US Army Cadet Command (USACC). An additional 3513 users are scheduled for onboarding in FY26.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605233A / *Accessions Information Environment (AIE)*	Project (Number/Name) CP8 / *Accessions Information Environment (AIE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AIE - Management Services	C/FFP	Chenega Decision Services : Lorton, VA	-	-		0.770	Jun 2022	0.969	Jun 2023	-		0.969	0.000	1.739	7.288
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.613		-		-		-	0.000	0.613	-
		Subtotal	-	-		1.383		0.969		-		0.969	0.000	2.352	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AIE - COTS Based Solution Configuration and Development	C/FFP	Booz Allen Hamilton : Herdon, VA	-	-		11.848	Apr 2022	10.184	Apr 2023	-		10.184	0.000	22.032	75.510
		Subtotal	-	-		11.848		10.184		-		10.184	0.000	22.032	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AIE - Cybersecurity - RMF, FedRAMP, ATO	TBD	TBD : TBD	-	-		1.579	Oct 2021	1.107	Oct 2022	-		1.107	0.000	2.686	3.861
		Subtotal	-	-		1.579		1.107		-		1.107	0.000	2.686	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AIE - Testing, Operational and Developmental Support	MIPR	ATEC/JITC : Various	-	-		1.980	Jan 2022	1.387	Jan 2023	-		1.387	0.000	3.367	15.929
		Subtotal	-	-		1.980		1.387		-		1.387	0.000	3.367	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605233A / *Accessions Information Environment (AIE)*	Project (Number/Name) CP8 / *Accessions Information Environment (AIE)*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		16.790		13.647		-		13.647	0.000	30.437	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605233A / *Accessions Information Environment (AIE)*	**Project (Number/Name)** CP8 / *Accessions Information Environment (AIE)*

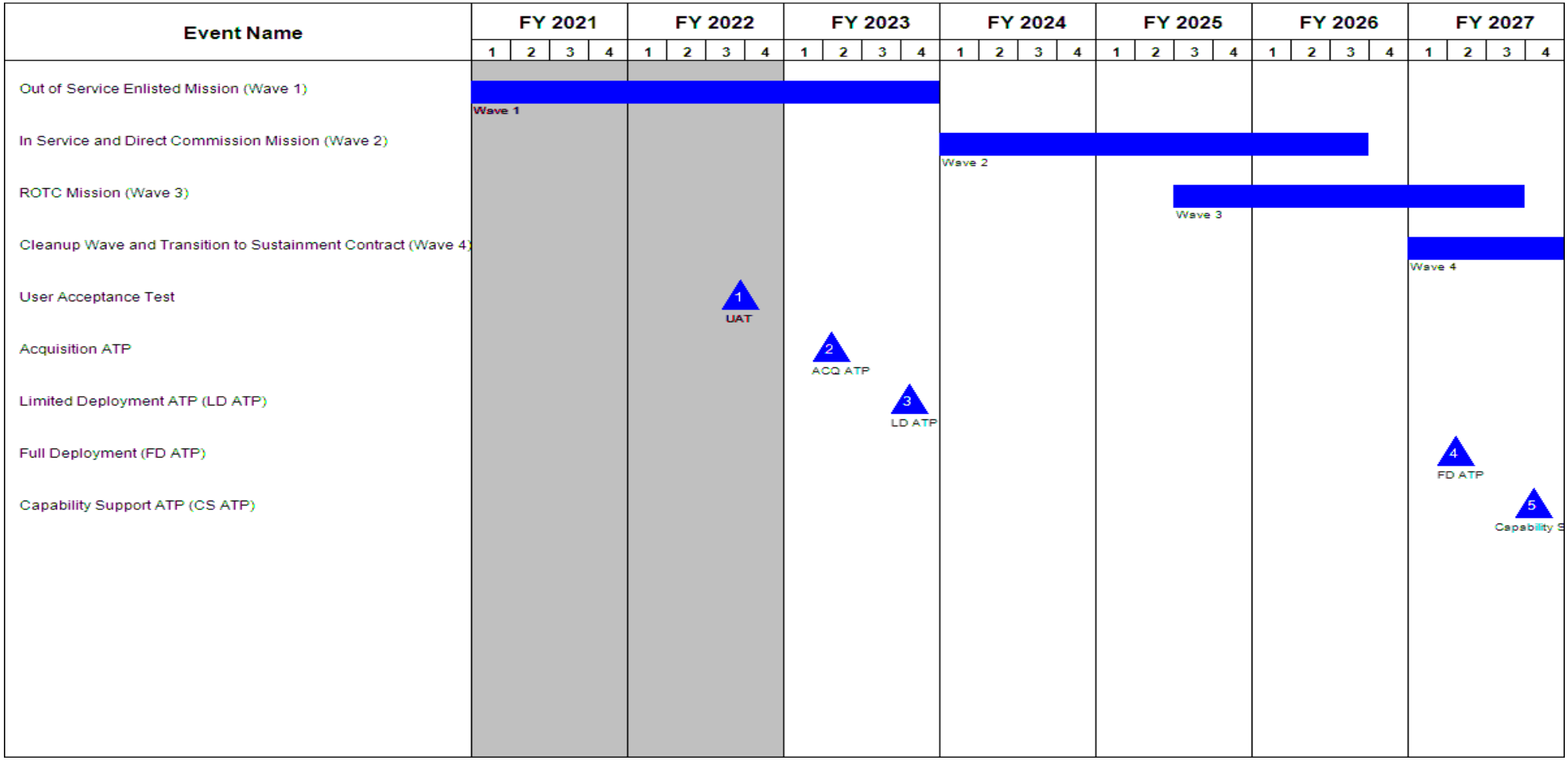


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605233A / *Accessions Information Environment (AIE)*	**Project (Number/Name)** CP8 / *Accessions Information Environment (AIE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Out of Service Enlisted Mission (Wave 1)	3	2019	4	2023
In Service and Direct Commission Mission (Wave 2)	1	2024	3	2026
ROTC Mission (Wave 3)	3	2025	3	2027
Cleanup Wave and Transition to Sustainment Contract (Wave 4)	1	2027	4	2027
User Acceptance Test	3	2022	3	2022
Acquisition ATP	2	2023	2	2023
Limited Deployment ATP (LD ATP)	4	2023	4	2023
Full Deployment (FD ATP)	2	2027	2	2027
Capability Support ATP (CS ATP)	4	2027	4	2027
Capability Support & Enhancements	1	2029	1	2039

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605235A *I Strategic Mid-Range Capability*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	-	5.016	-	5.016	644.380	567.918	328.471	388.085	0.000	1,933.870
CQ4: *Mid-Range Capability*	-	-	-	5.016	-	5.016	644.380	567.918	328.471	388.085	0.000	1,933.870

Note

This is a new start in FY 2023.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Long-Range Precision Fires Modernization Priority. The Program Element (PE) 0604644A / Mobile Medium Range Missile was moved to (PE) 0604135A Strategic Mid-Range Fires in FY2023 and funds the US Army Rapid Capabilities and Critical Technologies Office (RCCTO) Mid-Range Capability (MRC), and begins transition to the US Army Program Executive Office Missiles and Space (PEO MS) PE 0605235A in FY23. The MRC Prototype Weapon System leverages Joint Service technologies and integration of common hardware, software, and mutually supporting test events. MRC provides Launchers and Battery Operations Center (BOC) to fire a mix of missiles capable of engaging targets at mid-range distances. The mission of the prototype MRC is to provide Combatant Commanders with a strategic, ground-mobile, midrange missile capability. The prototype MRC leverages existing SM-6 and Tomahawk missiles to provide a responsive, highly accurate capability designed for high value targets. MRC is optimized for the penetration / dis-integration phase of Multi-Domain Operations (MDO) by defeating enemy Anti-Access /Area Denial (A2/AD) systems, enabling Combatant Commanders freedom of maneuver. Five MRC batteries will be developed and deployed; the initial prototype MRC battery by RCCTO and four additional MRC batteries by PEO MS plus hardware support for additional capabilities. The first prototype MRC deliverable with residual combat capability consists of four Launchers, one BOC, and one Reload Capability, to be developed and deployed by RCCTO nlt 4Q FY2023 as the First Unit of Issue (FUI). Delivery of follow-on batteries by PEO MS will occur annually thereafter.

FY 2023 Base funding in the amount of $5.016 million has been moved to PE 0605235A. The funding aligns RCCTO and PEO MS transition activities and establishes the PEO MS project initiation activities (manpower, program office startup, acquisition strategy, budget/cost position formulation, etc) required to comply with statutory and appropriate regulatory acquisition requirements. Starting in FY23, PEO MS is the OPR for Batteries 2 - 5. Base funding supports continuing efforts to manage transition acquisition activities, RCCTO long lead procurement, and project initiation including supportability, test, and systems engineering planning activities related to the successful fabrication and integration of field-able prototype technology into Battery 2 - 5 in order to meet AROC-approved requirements. The outputs of these efforts complements RCCTO efforts and continues the delivery of Batteries 2 - 5 to meet DOD and SecArmy program directives. This Project is executed by the PEO MS.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605235A / *Strategic Mid-Range Capability*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	5.016	-	5.016
Total Adjustments	0.000	0.000	5.016	-	5.016
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	5.016	-	5.016

Change Summary Explanation

The Program Element (PE) 0604644A / Mobile Medium Range Missile was moved to (PE) 0605235A / Strategic Mid-Range Capability in FY2023.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605235A / *Strategic Mid-Range Capability*	Project (Number/Name) CQ4 / *Mid-Range Capability*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CQ4: *Mid-Range Capability*	-	-	-	5.016	-	5.016	644.380	567.918	328.471	388.085	0.000	1,933.870
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This is a new start in FY 2023.

The Program Element (PE) 0604644A / Mobile Medium Range Missile was moved to PE 0604135A and PE 0605235A / Strategic Mid-Range Capability in FY2023.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Long-Range Precision Fires Modernization Priority. The Program Element (PE) 0604644A / Mobile Medium Range Missile was moved to (PE) 0604135A Strategic Mid-Range Fires in FY2023 and funds the US Army Rapid Capabilities and Critical Technologies Office (RCCTO) Mid-Range Capability (MRC), and begins transition to the US Army Program Executive Office Missiles and Space (PEO MS) PE 0605235A in FY23. The MRC Prototype Weapon System leverages Joint Service technologies and integration of common hardware, software, and mutually supporting test events. MRC provides Launchers and Battery Operations Center (BOC) to fire a mix of missiles capable of engaging targets at mid-range distances. The mission of the prototype MRC is to provide Combatant Commanders with a strategic, ground-mobile, midrange missile capability. The prototype MRC leverages existing SM-6 and Tomahawk missiles to provide a responsive, highly accurate capability designed for high value targets. MRC is optimized for the penetration / dis-integration phase of Multi-Domain Operations (MDO) by defeating enemy Anti-Access /Area Denial (A2/AD) systems, enabling Combatant Commanders freedom of maneuver. Five MRC batteries will be developed and deployed; the initial prototype MRC battery by RCCTO and four additional MRC batteries by PEO MS plus hardware support for additional capabilities. The first prototype MRC deliverable with residual combat capability consists of four Launchers, one BOC, and one Reload Capability, to be developed and deployed by RCCTO nlt 4Q FY2023 as the First Unit of Issue (FUI). Delivery of follow-on batteries by PEO MS will occur annually thereafter.

FY 2023 Base funding in the amount of $5.018 million has been moved to PE 0605235A. The funding aligns RCCTO and PEO MS transition activities and establishes the PEO MS project initiation activities (manpower, program office startup, acquisition strategy, budget/cost position formulation, etc) required to comply with statutory and appropriate regulatory acquisition requirements. Starting in FY23, PEO MS is the OPR for Batteries 2 - 5. Base funding supports continuing efforts to manage transition acquisition activities, RCCTO long lead procurement, and project initiation including supportability, test, and systems engineering planning activities related to the successful fabrication and integration of field-able prototype technology into Battery 2 - 5 in order to meet AROC-approved requirements. The outputs of these efforts complements RCCTO efforts and continues the delivery of Batteries 2 - 5 to meet DOD and SecArmy program directives. This Project is executed by the PEO MS.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: MRC Prototype Program Transition and Startup	-	-	5.016

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605235A / *Strategic Mid-Range Capability*	**Project (Number/Name)** CQ4 / *Mid-Range Capability*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: PEO MS develops agreements, decision points, acquisition strategies and plans that document the transition of the RCCTO prototype MRC to a Programs of Record, thus aligning the Defense Management process and SecArmy guidance for MRC requirements, funding, acquisition, engineering assessments, fielding, NET, etc. ***FY 2023 Plans:*** This effort funds program support costs necessary to prepare program acquisition, budget/cost, contract, prototype technology transition, and product support documentation. Provides for follow-on prototype development, acquisition, affordability, and risk reduction activities for batteries 2 - 5. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding decrease/increase from FY 2022 to FY 2023 is due to The Program Element (PE) 0604644A / Mobile Medium Range Missile being moved to PE 0604135A and PE 0605235A / Strategic Mid-Range Capability in FY2023			
Accomplishments/Planned Programs Subtotals	-	-	5.016

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

The Program Element (PE) 0604644A / Mobile Medium Range Missile was moved to PE 0604135A and PE 0605235A / Strategic Mid-Range Capability in FY2023.

D. Acquisition Strategy

Based on SecArmy guidance and DOD 5000.01 authority, the efforts leverage a variety of contract vehicles, including Other Transaction Authority Agreements to meet project initiation requirements. Efforts begin transition from the Rapid Capabilities and Critical Technologies Office (RCCTO) to PEO MS in FY23. PEO MS will initiate acquisition and program documentation to support Program of Record startup, acquisition pathway, systems engineering, and contracting decisions. The efforts will support Army pre and post-acquisition strategy decision points in FY23 for Batteries 2-5. These include acquisition pathway determination, contract planning, requirements development / technology insertion planning support, cost analysis, test planning, and lifecycle support planning.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605235A / *Strategic Mid-Range Capability*	Project (Number/Name) CQ4 / *Mid-Range Capability*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management / Systems Engineering	TBD	Various : Huntsville, AL	-	-		-		5.016		-		5.016	0.000	5.016	-
		Subtotal	-	-		-		5.016		-		5.016	0.000	5.016	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		5.016		-		5.016	0.000	5.016	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605235A / *Strategic Mid-Range Capability*	**Project (Number/Name)** CQ4 / *Mid-Range Capability*

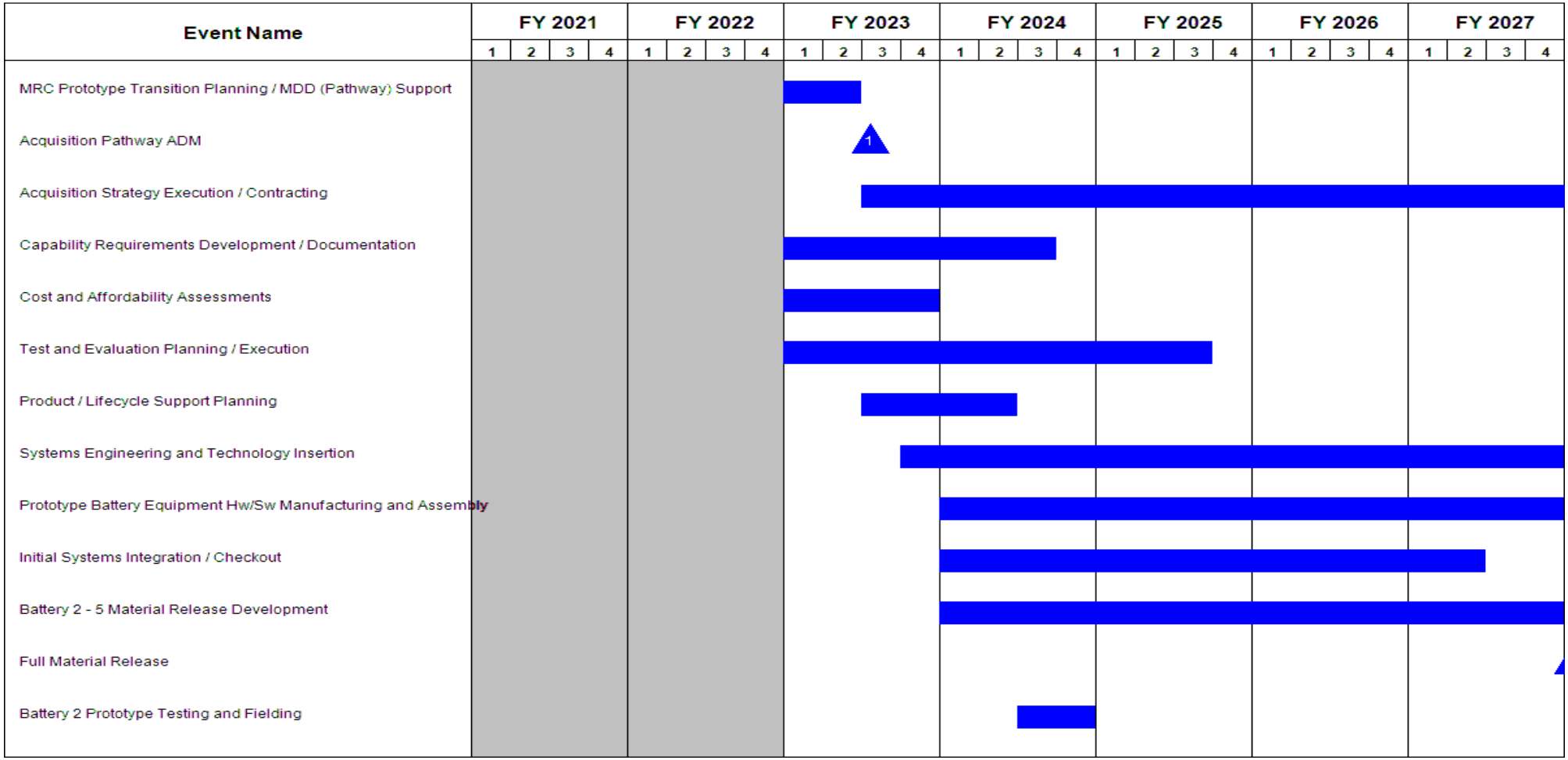
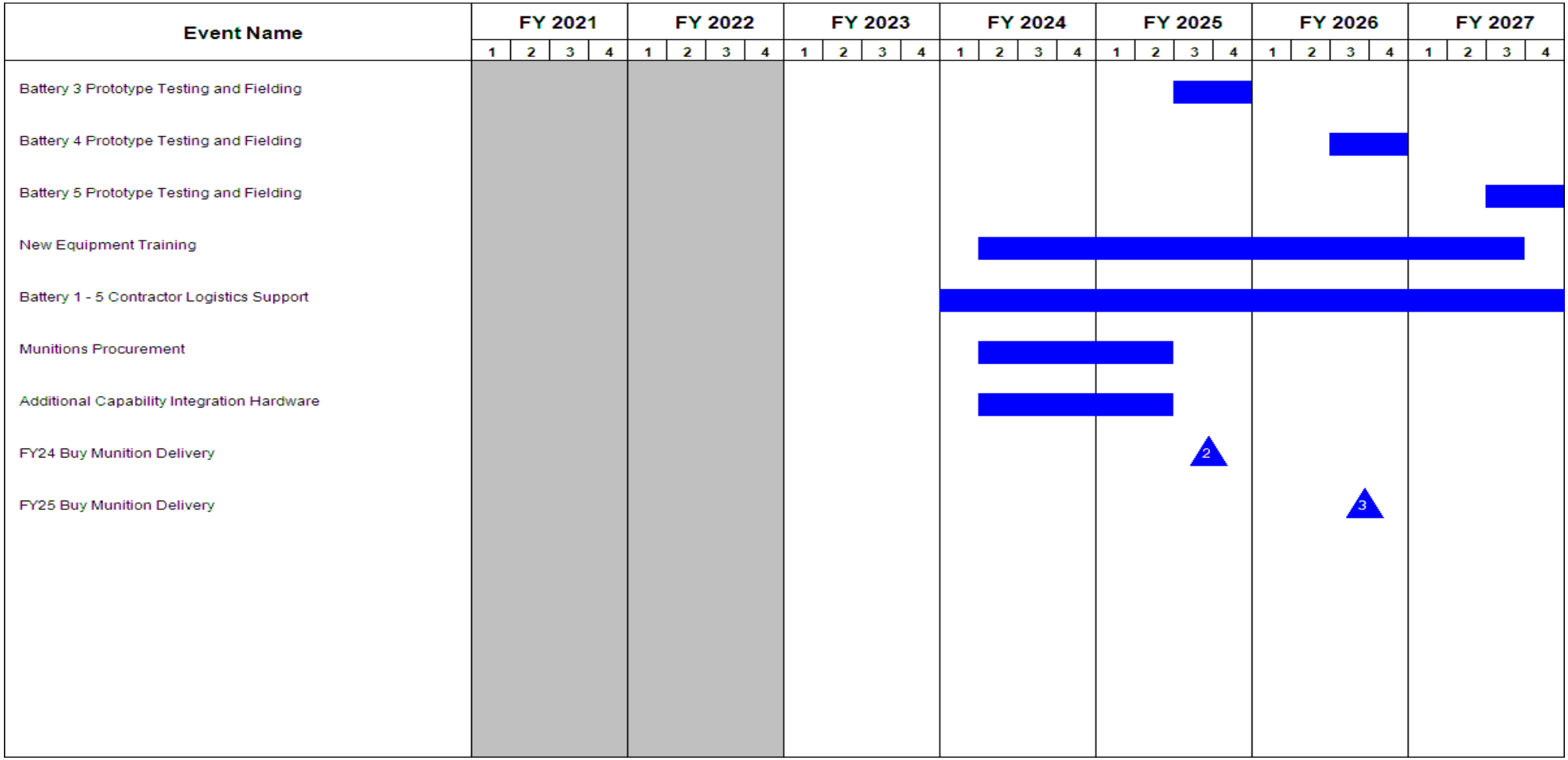


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605235A / *Strategic Mid-Range Capability*	**Project (Number/Name)** CQ4 / *Mid-Range Capability*



Note

Program Element (PE) 06046434A / Mobile Medium Range Missile was moved to (PE) 0605235A / Strategic Mid-Range Cability in FY2023.
Program transitions from Army RCCTO (PE 0604135A) to PEO Missiles and Space (PE 0505235A) in FY24.

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605235A / *Strategic Mid-Range Capability*	**Project (Number/Name)** CQ4 / *Mid-Range Capability*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MRC Prototype Transition Planning / MDD (Pathway) Support	1	2023	2	2023
Acquisition Pathway ADM	3	2023	3	2023
Acquisition Strategy Execution / Contracting	3	2023	2	2028
Capability Requirements Development / Documentation	1	2023	3	2024
Cost and Affordability Assessments	1	2023	4	2023
Test and Evaluation Planning / Execution	1	2023	3	2025
Product / Lifecycle Support Planning	3	2023	2	2024
Systems Engineering and Technology Insertion	4	2023	4	2027
Prototype Battery Equipment Hw/Sw Manufacturing and Assembly	1	2024	4	2027
Initial Systems Integration / Checkout	1	2024	2	2027
Battery 2 - 5 Material Release Development	1	2024	4	2027
Full Material Release	1	2028	1	2028
Battery 2 Prototype Testing and Fielding	3	2024	4	2024
Battery 3 Prototype Testing and Fielding	3	2025	4	2025
Battery 4 Prototype Testing and Fielding	3	2026	4	2026
Battery 5 Prototype Testing and Fielding	3	2027	4	2027
New Equipment Training	2	2024	3	2027
Battery 1 - 5 Contractor Logistics Support	1	2024	2	2028
Munitions Procurement	2	2024	2	2025
Additional Capability Integration Hardware	2	2024	2	2025
FY24 Buy Munition Delivery	3	2025	3	2025
FY25 Buy Munition Delivery	3	2026	3	2026

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605235A / *Strategic Mid-Range Capability*	**Project (Number/Name)** CQ4 / *Mid-Range Capability*

Note

Program Element (PE) 06046434A / Mobile Medium Range Missile was moved to (PE) 0605235A / Strategic Mid-Range Cability in FY2023.
Program transitions from Army RCCTO (PE 0604135A) to PEO Missiles and Space (PE 0505235A) in FY24.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605236A *I Integrated Tactical Communications*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	-	12.447	-	12.447	7.737	7.775	7.474	7.331	0.000	42.764
CQ1: *Tactical Communication Network Evaluation (TCNE)*	-	-	-	12.447	-	12.447	7.737	7.775	7.474	7.331	0.000	42.764

Note

This line is not a new start rather it is a realignment of TCNE scope previously executed in 0605042A FA1/FA2.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization Priority. Tactical Communication Network Evaluation (TCNE) is directly aligned to the Army Network Modernization Strategy Line of Effort 1 (LOE 1) Unified Network; LOE 2, Common Operating Environment (COE), LOE 3, Interoperability; and LOE 4, Command Post Mobility and Survivability. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve their network modernization strategy.

To deliver the network of 2028, the Army outlined four Capability Sets (CS) in Fiscal Years 2021, 2023, 2025, and 2027. In this end-to-end tactical network approach, each CS builds off the previous and is infused with commercial solutions informed by synchronized assessments, experimentations, evaluations, and developmental and operational tests. The TCNE mission represents the development phases of the Cap Sets.

The mission of Tactical Communication Network Evaluation (TCNE) is to deliver the System of Systems(SoS) validation of the N-CFT's Design Goals for every Capability Set. TCNE will develop the system of systems (SoS) network architecture through continuous test and evaluation to include user/soldier feedback, lab based risk reduction(LBRR) and concept development. These events help to identify network gaps in a specific unit, mitigate risk and mature capabilities that are ready for SoS integration within the Integrated Tactical Network(ITN). TCNE will deliver network architectures that have been validated at a representative scale (typically BN+) in an operational environment prior to fielding.

FY 2023 resources will be used to provide SoS network engineering analysis and lab based testing for network advances. Lab based testing will address cyber vulnerabilities and reduce risk related to the integration of the system of system architecture.
The total cost of the Integrated Tactical Network Rapid Prototyping (ITN RP) Middle Tier of Acquisition effort is $75.6 million RDT&E from FY19 to FY24. The remainder of the ITN RP is fully funded across the Future Years Defense Program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605236A *I Integrated Tactical Communications*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	12.447	-	12.447
Total Adjustments	0.000	0.000	12.447	-	12.447
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	12.447	-	12.447

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605236A / *Integrated Tactical Communications*	Project (Number/Name) CQ1 / *Tactical Communication Network Evaluation (TCNE)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CQ1: *Tactical Communication Network Evaluation (TCNE)*	-	-	-	12.447	-	12.447	7.737	7.775	7.474	7.331	0.000	42.764
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This line is not a new start. It is a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Cross Functional Team. Tactical Communication Network Evaluation (TCNE) is directly aligned to the Army Network Modernization Strategy Line of Effort 1 (LOE 1) Unified Network; LOE 2, Common Operating Environment (COE), LOE 3, Interoperability; and LOE 4, Command Post Mobility and Survivability. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve their network modernization strategy.

To deliver the network of 2028, the Army outlined four Capability Sets (CS) in Fiscal Years 2021, 2023, 2025, and 2027. In this end-to-end tactical network approach, each CS builds off the previous and is infused with commercial solutions informed by synchronized assessments, experimentations, evaluations, and developmental and operational tests. The TCNE mission represents the development phases of the Cap Sets.

The mission of Tactical Communication Network Evaluation (TCNE) is to deliver the System of Systems(SoS) validation of the N-CFT's Design Goals for every Capability Set. TCNE will develop the system of systems (SoS) network architecture through continuous test and evaluation to include user/soldier feedback, lab based risk reduction(LBRR) and concept development. These events help to identify network gaps in a specific unit, mitigate risk and mature capabilities that are ready for SoS integration within the Integrated Tactical Network(ITN). TCNE will deliver network architectures that have been validated at a representative scale (typically BN+) in an operational environment prior to fielding.

FY 2023 resources will be used to provide SoS network engineering analysis and lab based testing for network advances. Lab based testing will address cyber vulnerabilities and reduce risk related to the integration of the system of system architecture.

The total cost of the Integrated Tactical Network Rapid Prototyping (ITN RP) Middle Tier of Acquisition effort is $75.6 million RDT&E from FY19 to FY24. The remainder of the ITN RP is fully funded across the Future Years Defense Program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Program Management Support	-	-	0.945

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605236A / *Integrated Tactical Communications*	**Project (Number/Name)** CQ1 / *Tactical Communication Network Evaluation (TCNE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Funding for this purchases SETA support for the TCNE program. Funding goes toward Program management, program execution, major events, reporting, funds execution, contract management, and logistical support. Includes participation in program planning and Integrated Product Team meetings. ***FY 2023 Plans:*** FY23 funds will provide overall management and oversight to implement ITN acquisition strategy and evaluation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase in funds is due to a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.			
Title: Engineering Technical Support ***Description:*** Engineering & Technical Analysis Support ***FY 2023 Plans:*** FY 2023 funds will provide technical systems engineering support to evaluate technical alternatives and perform communication architecture analysis to identify alternatives to reduce cost, improve performance, and achieve ITN objectives. Funds will facilitate technical test support for candidate products utilized within ITN's iterative evaluation and capability implementation strategy. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase in funds is due to a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.	-	-	1.416
Title: Test and Evaluation ***Description:*** Testing will include a series of events to identify network capabilities, gaps and potential enhancements to improve mission effectiveness and lethality for a designated unit formation. The results of the events will facilitate the planning preparation, and coordination of the proposed system of system network architecture for a capability set. ***FY 2023 Plans:*** ITN testing and evaluation will utilize a series of System of Systems assessments that gather multiple data points which include Lab Based Risk Reduction (LBRR),Technical Test(TT) and Cyber Testing Events. These are collaborative events that provide feedback regarding cybersecurity resiliency, risk reduction and network performance prior to an operational demonstration. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase in funds is due to a realignment of the TCNE scope previously executed on 655042AFA1 and 655042AFA2.	-	-	10.086
Accomplishments/Planned Programs Subtotals	-	-	12.447

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605236A / *Integrated Tactical Communications*	**Project (Number/Name)** CQ1 / *Tactical Communication Network Evaluation (TCNE)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Army will use a rapid prototyping Middle Tier Acquisition (MTA) that will develop and demonstrate multiple prototypes and will validate and demonstrate new / innovative capabilities to meet emerging military needs by conducting a continuous prototyping process. The product of ITN rapid prototyping will provide Warfighters a residual enhanced operational capability and will posture the Army for decisions on follow on MTA rapid fielding efforts or tailored DoD Instruction 5000.02 program acquisitions following each iteration. The ITN will purchase the commercial off the shelf items needed by utilizing various contractual vehicles, to include Common Hardware System 5th Generation (CHS-5), indefinite delivery/indefinite quantity, Defense Logistics Agency and Global Tactical Advanced Communication Systems II.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605236A / *Integrated Tactical Communications*	Project (Number/Name) CQ1 / *Tactical Communication Network Evaluation (TCNE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	TBD	Booz Allen Hamilton : APG	-	-		-		0.945	Feb 2023	-		0.945	0.000	0.945	-
		Subtotal	-	-		-		0.945		-		0.945	0.000	0.945	N/A

Remarks

RS3 SETA Contract picks up option year in February of each year.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	TBD	MITRE/Booz Allen Hamilton : APG	-	-		-		1.416	Dec 2022	-		1.416	0.000	1.416	-
		Subtotal	-	-		-		1.416		-		1.416	0.000	1.416	N/A

Remarks

Features MITRE and Booz Allen Engineering and Test Support

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	C/Various	Testing : APG/NJ	-	-		-		10.086	Dec 2022	-		10.086	0.000	10.086	-
		Subtotal	-	-		-		10.086		-		10.086	0.000	10.086	N/A

Remarks

Funds need to be released by Dec 2022 to support testing events starting in January

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		12.447		-		12.447	0.000	12.447	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605236A / *Integrated Tactical Communications*	Project (Number/Name) CQ1 / *Tactical Communication Network Evaluation (TCNE)*	

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605236A / *Integrated Tactical Communications*	**Project (Number/Name)** CQ1 / *Tactical Communication Network Evaluation (TCNE)*

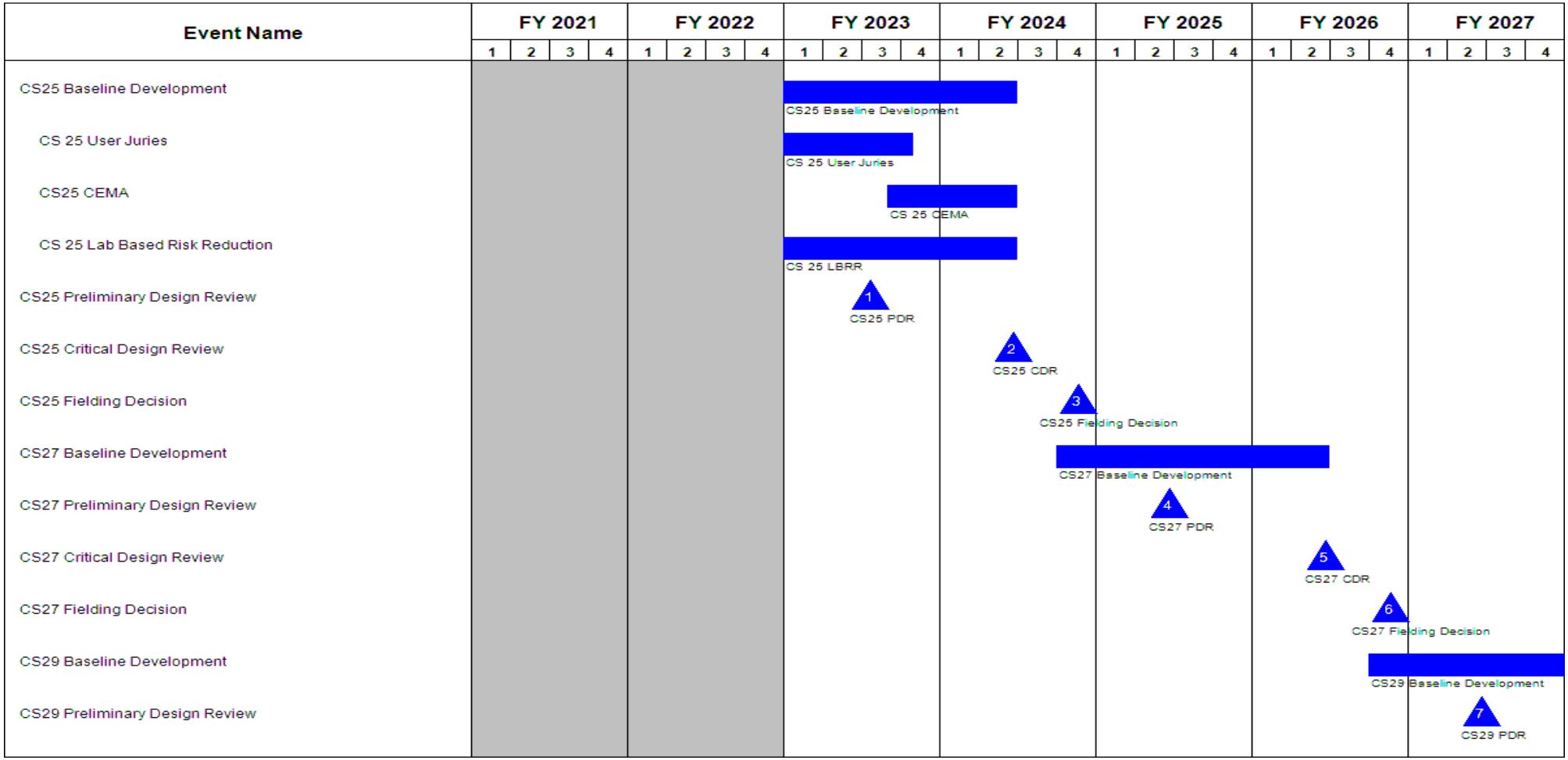


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605236A / *Integrated Tactical Communications*	**Project (Number/Name)** CQ1 / *Tactical Communication Network Evaluation (TCNE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CS25 Baseline Development	1	2023	2	2024
CS 25 User Juries	1	2023	4	2023
CS25 CEMA	3	2023	2	2024
CS 25 Lab Based Risk Reduction	1	2023	2	2024
CS25 Preliminary Design Review	3	2023	3	2023
CS25 Critical Design Review	2	2024	2	2024
CS25 Fielding Decision	4	2024	4	2024
CS27 Baseline Development	4	2024	2	2026
CS27 Preliminary Design Review	2	2025	2	2025
CS27 Critical Design Review	2	2026	2	2026
CS27 Fielding Decision	4	2026	4	2026
CS29 Baseline Development	4	2026	2	2028
CS29 Preliminary Design Review	2	2027	2	2027
CS29 Fielding Decision	4	2028	4	2028

Note

CS25 Baseline Development Began Under FA1/FA2 scope in 4QFY22 and will continue into FY23 for CQ1. Baseline Development includes hosting several testing events to include Lab Based Risk Reduction, technical test, and Cyber Events to burn down risk and identify gaps in the network architecture. CS27 & CS29 will undergo similar testing to establish network baseline that will ultimately lead to a fielding decision.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	7.566	2.134	2.366	-	2.366	3.078	3.084	0.000	0.000	Continuing	Continuing
JA6: *Joint Air-To-Ground Missile (JAGM)*	-	7.566	2.134	2.366	-	2.366	3.078	3.084	-	-	Continuing	Continuing
Program MDAP/MAIS Code: 355												

A. Mission Description and Budget Item Justification

The JAGM program is an Army-led, Acquisition Category (ACAT) 1C Major Defense Acquisition Program (MDAP) with joint interest with the Navy, Marine Corps, and Air Force. JAGM is the next generation, multi-mode, air-to-ground munition replacing legacy HELLFIRE (HF) and HF Longbow munitions. JAGM will be used for destruction of high-value land and maritime targets, moving or stationary, and is capable of being fired from any platform currently firing HF from a US Army-issued M299 launcher. JAGM utilizes a HF back-end (propulsion, warhead and control system) with a new-design, Millimeter Wave (MMW) and Semi-Active Laser (SAL), multi-mode guidance section. The multi-mode capability provides fire-and-forget and precision-point targeting as well as unique, blended modes of each, for improved capability over legacy munitions.

The Fiscal Year (FY) 2023 dollars in the amount of $2.366 million will continue the objective platform review, analysis, and threat management.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	7.566	2.134	0.000	-	0.000
Current President's Budget	7.566	2.134	2.366	-	2.366
Total Adjustments	0.000	0.000	2.366	-	2.366
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	2.366	-	2.366

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	Project (Number/Name) JA6 / *Joint Air-To-Ground Missile (JAGM)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
JA6: *Joint Air-To-Ground Missile (JAGM)*	-	7.566	2.134	2.366	-	2.366	3.078	3.084	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Air-to-Ground Missile (JAGM) program is an Army-led, Acquisition Category (ACAT) IC Major Defense Acquisition Program (MDAP) with joint interest with the United States (U.S.) Air Force, U.S. Marine Corps (USMC), and U.S. Navy. The JAGM is the next generation of aviation-launched, fire and forget missiles to replace the HELLFIRE Laser and Longbow radar missiles. JAGM will be used by joint service aircraft for destruction of high value stationary, moving, and relocatable land and maritime targets from standoff range in day, night, adverse weather, and obscured battlefield conditions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Full Rate Production (FRP) Decision Preparation	-	0.284	-
Description: The Air-to-Ground Missile Systems (AGMS) Product Office and Other Government Agencies (OGAs) will confirm that JAGM is producible, as well as operable, safe, and logistically supportable. ***FY 2022 Plans:*** Confirm documentation to support a March FY22 FRP decision. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to completion of July FY22 FRP decision.			
Title: Integration and Counter Measure/Threat Management	3.789	0.083	2.366
Description: The Air-to-Ground Missile Systems (AGMS) Product Office and Other Government Agencies (OGAs) will continue objective platform review, analysis, and threat management. The AGMS Product Office and OGAs will perform technical assessments, concept studies, prepare documentation, and perform demonstrations and risk reduction efforts. ***FY 2022 Plans:*** Continue software testing and review and analysis of objective Army platforms. ***FY 2023 Plans:*** The AGMS Product Office and OGAs will perform technical assessments, concept studies, prepare documentation, and perform risk reduction efforts to address emerging threats. ***FY 2022 to FY 2023 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Increase due to initiation of Assured Position, Navigation, and Timing (APNT), and Counter-Unmanned Aerial Systems (c-UAS) threat management activities.			
Title: Captive Air Training Missile (CATM) Development ***Description:*** The CATM is used for captive flight training and for qualification of aircrews to employ tactical missiles in combat. The Air-to-Ground Missile Systems (AGMS) Product Office will develop an inert missile configuration that will meet training needs. ***FY 2022 Plans:*** Complete JAGM CATM development. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to completion of CATM development.	1.335	0.486	-
Title: Captive Air Training Missile (CATM) Testing ***Description:*** The Air-to-Ground Missile Systems (AGMS) Product Office and Other Government Agencies (OGAs) will continue development testing and qualification of the JAGM CATM; achieve air worthiness on threshold platforms. ***FY 2022 Plans:*** Verify AH-64E Software Integration through captive carry and environmental testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease due to completion of CATM testing.	2.442	1.203	-
Title: FY 2022 SBIR/STTR Transfer ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	0.078	-
Accomplishments/Planned Programs Subtotals	7.566	2.134	2.366

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• C70302: *Joint Air-to-Ground MSLS (JAGM)*	196.548	147.177	216.030	-	216.030	160.198	165.424	200.762	184.198	5,021.811	6,292.148

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• NAVY - 0605450M: *Navy JAGM Missile RDT&E*	12.713	0.357	0.392	-	0.392	0.375	0.383	0.392	-	Continuing	Continuing
• NAVY - 0206138M: *Navy JAGM Missile Procurement*	43.647	49.702	79.804	-	79.804	76.765	78.246	79.804	-	Continuing	Continuing
• AF - 0201109F: *Air Force Missile Procurement*	-	-	-	-	-	-	-	-	-		

Remarks

D. Acquisition Strategy

The JAGM Production and Deployment (PD) Acquisition Strategy (AS) was approved at Milestone C on 15 June 2018. Five Low-Rate Initial Production (LRIP) contract options were awarded in August 2018, September 2018, December 2018, March 2021, and April 2021. Initial Operational Capability (IOC) of 96 missiles was achieved in March 2019. Initial Operational Testing was completed in May 2019. On 22 June 2020, the Army Acquisition Executive (AAE) was informed the JAGM program would not execute its Full Rate Production (FRP) decision. Integration challenges on the Navy AH-1Z Viper threshold platform delayed completion of Initial Operational Test and Evaluation (IOT&E) until Sep 2021, and the program does not meet the statutory requirement for FRP until IOT&E is complete. In response, the AAE extended Low Rate Initial Production (LRIP) and issued an Acquisition Decision Memorandum (ADM) authorizing additional LRIP quantities in support of Service and Foreign Military Sales (FMS) requirements until IOT&E is complete and a FRP decision is made. There are no impacts to FY23 funding or quantities. Missile performance and missile tests to date have been successful. There are no significant software-related issues with the JAGM missile at this time. Integration issues are with the Navy AH-1Z Viper Attack Helicopter platform. There are no issues with JAGM specific resources or execution and the program will still provide the required capability on time and with the same planned production quantities. The Services maintain their commitments to the program and continue to address the Navy AH-1Z platform integration challenges.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	Project (Number/Name) JA6 / *Joint Air-To-Ground Missile (JAGM)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Eng/ Project Management	C/LH	Various : Performers	85.172	-		0.180	Apr 2022	0.190	Mar 2023	-		0.190	Continuing	Continuing	Continuing
FY2022 SBIR/STTR Transfer	TBD	Various : Various	-	-		0.078		-		-		-	0.000	0.078	-
		Subtotal	85.172	-		0.258		0.190		-		0.190	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JAGM Engineering Services	SS/CPFF	Lockheed Martin : Orlando, FL	3.602	5.152	Mar 2021	1.125	Jun 2022	1.300	Mar 2023	-		1.300	Continuing	Continuing	Continuing
		Subtotal	3.602	5.152		1.125		1.300		-		1.300	Continuing	Continuing	N/A

Remarks

(C / FFP) - Competitive/Firm Fixed Price
(C / CPFF) - Competitive/Cost-Plus Fixed Fee
(C / LH) - Competitive/Labor Hour
(SS / FFP) - Sole Source/Firm Fixed Price
(C / FPIF) - Competitive/Fixed Price Incentive (Firm Target)

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Gov Agencies	C/LH	Various : Performers	133.359	2.414	Nov 2020	0.751	Apr 2022	0.876	Mar 2023	-		0.876	Continuing	Continuing	Continuing
		Subtotal	133.359	2.414		0.751		0.876		-		0.876	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	222.133	7.566		2.134		2.366		-		2.366	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	Project (Number/Name) JA6 / *Joint Air-To-Ground Missile (JAGM)*	

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

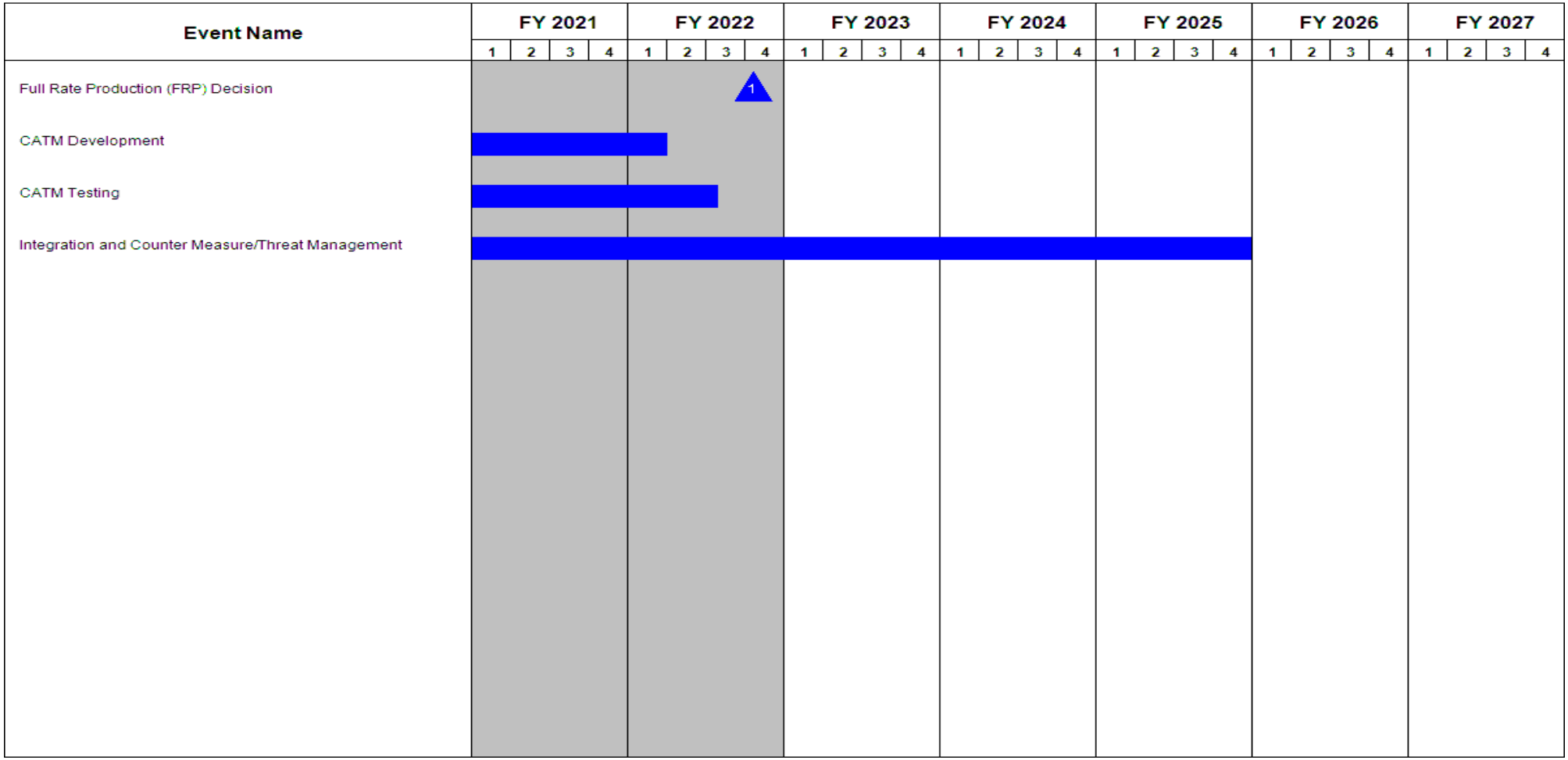


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605450A / *Joint Air-to-Ground Missile (JAGM)*	**Project (Number/Name)** JA6 / *Joint Air-To-Ground Missile (JAGM)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMD	4	2015	3	2018
Army System & Integration Testing	4	2015	3	2018
Limited User Testing (LUT)	2	2018	2	2018
MS C Decision	3	2018	3	2018
IOC	2	2019	2	2019
IOT&E	3	2019	3	2019
Full Rate Production (FRP) Decision	4	2022	4	2022
CATM Development	1	2020	1	2022
CATM Testing	1	2021	3	2022
Integration and Counter Measure/Threat Management	1	2019	4	2025

Note

MS: Milestone
IOC: Initial Operational Capability
IOT&E: Initial Operational Test & Evaluation
CATM: Captive Air Training Missile
HW: Hardware
SW: Software

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605457A *I Army Integrated Air and Missile Defense (AIAMD)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	213.956	159.873	265.288	-	265.288	289.312	344.958	182.204	131.523	0.000	1,587.114
S40: *Army Integrated Air and Missile Defense*	-	213.956	159.873	265.288	-	265.288	289.312	344.958	182.204	131.523	0.000	1,587.114
Program MDAP/MAIS Code: 205												

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the U.S. Army Air and Missile Defense (AMD) Modernization Priority. The Army Integrated Air and Missile Defense (AIAMD) program is a designated Major Defense Acquisition Program (MDAP), a critical component of the Army's AMD strategy, and is a top AMD Cross Functional Team modernization priority program.

The AIAMD program is a direct response to the U.S. Army AMD Concept and Operational and Organizational (O&O) Plan for the Future Force, the AIAMD System of Systems (SoS) Capabilities Development Document (CDD) and the AMD Task Force Concept of Operations (CONOPS). The AIAMD Program is uniquely structured to enable the development of an overarching SoS capability with all participating Department of Defense (DoD) Air Defense Artillery (ADA) components functioning interdependently to provide total operational capabilities not achievable by the individual element systems. The AIAMD program achieves this objective by establishing the AIAMD architecture and developing (1) the IAMD Battle Command Systems (IBCS) Engagement Operations Center (EOC) that provides the common Mission Command capability, (2) the Integrated Fire Control Relay capability for fire control connectivity and distributed operations, and (3) the common Plug and Fight (P&F) Kits that network-enable multiple sensor components, weapon components, and the IBCS EOC.

The AIAMD Program provides advanced capabilities to the Army through agile software development and a network-centric SoS capability (also referred to as "Plug and Fight") that integrates AMD sensors and weapons with the IBCS EOC. The AIAMD SoS architecture enables extended range and non-line-of-sight engagements, to include joint kill chain engagements across the full spectrum of aerial threats, providing fire control quality data to the most appropriate weapon to complete the mission successfully. Further, it mitigates the coverage gaps and single points of failure that have plagued AMD design in the past. The AIAMD program provides the user with the ability to train on a single C2 system, resulting in overall training savings. The AIAMD program also provides the Army with the ability to procure components that interface with the Integrated Fire Control Network (IFCN), alleviating the cost of procuring total system capabilities in the future.

AIAMD Initial Operation Capability (IOC) will be delivered through the fielding of the IBCS-based AIAMD architecture including the IBCS EOC, IFCN Relay, Sentinel A3, and PATRIOT components working in an integrated manner through the IFCN connection. The government controlled open architecture enables integration of beyond IOC capabilities to meet emerging threats and fielding to include but, not limited to, Air Defense Airspace Management (ADAM) Cells, ADA Brigade, and Army Air and Missile Defense Command (AAMDC). The AIAMD Program will also continue integration with both Lower Tier Air and Missile Defense Sensor (LTAMDS) and Enduring Indirect Fire Protection Capability (IFPC).

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605457A *I Army Integrated Air and Missile Defense (AIAMD)*

Funding in FY 2023 supports agile software development and integration, developmental testing and requirements verification of the software build, operational testing, collective training and integration activities for integrated fires capabilities. Funding also continues Post-IOC 1-N Capabilities to include Terminal High Altitude Area Defense (THAAD) Planner, and F-35 Joint Striker. Funding includes test hardware requirements as well as lab infrastructure in order to support integration. Funds will continue the development and integration efforts of the Remote Interceptor Guidance-360 (RIG-360), which will provide integration of an independent, adapted uplinker into IBCS to support 360 degree PAC-3 Missile Segment Enhancement (MSE) engagements outside the coverage of the current PATRIOT Radar.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	206.850	157.873	0.000	-	0.000
Current President's Budget	213.956	159.873	265.288	-	265.288
Total Adjustments	7.106	2.000	265.288	-	265.288
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	6.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	7.106	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	265.288	-	265.288

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: S40: *Army Integrated Air and Missile Defense*		
Congressional Add: *Counter Emerging Threat*	20.000	-
Congressional Add: *Kill Chain Automation*	-	6.000
Congressional Add Subtotals for Project: S40	20.000	6.000
Congressional Add Totals for all Projects	20.000	6.000

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	Project (Number/Name) S40 / *Army Integrated Air and Missile Defense*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
S40: *Army Integrated Air and Missile Defense*	-	213.956	159.873	265.288	-	265.288	289.312	344.958	182.204	131.523	0.000	1,587.114
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the U.S. Army Air and Missile Defense (AMD) Modernization Priority. The Army Integrated Air and Missile Defense (AIAMD) program is a designated Major Defense Acquisition Program (MDAP), a critical component of the Army's AMD strategy, and is a top AMD Cross Functional Team modernization priority program.

The AIAMD program is a direct response to the U.S. Army AMD Concept and Operational and Organizational (O&O) Plan for the Future Force, the AIAMD System of Systems (SoS) Capabilities Development Document (CDD) and the AMD Task Force Concept of Operations (CONOPS). The AIAMD Program is uniquely structured to enable the development of an overarching SoS capability with all participating Department of Defense (DoD) Air Defense Artillery (ADA) components functioning interdependently to provide total operational capabilities not achievable by the individual element systems. The AIAMD program achieves this objective by establishing the AIAMD architecture and developing (1) the IAMD Battle Command Systems (IBCS) Engagement Operations Center (EOC) that provides the common Mission Command capability, (2) the Integrated Fire Control Relay capability for fire control connectivity and distributed operations, and (3) the common Plug and Fight (P&F) Kits that network-enable multiple sensor components, weapon components, and the IBCS EOC.

The AIAMD Program provides advanced capabilities to the Army through agile software development and a network-centric SoS capability (also referred to as "Plug and Fight") that integrates AMD sensors and weapons with the IBCS EOC. The AIAMD SoS architecture enables extended range and non-line-of-sight engagements, to include joint kill chain engagements across the full spectrum of aerial threats, providing fire control quality data to the most appropriate weapon to complete the mission successfully. Further, it mitigates the coverage gaps and single points of failure that have plagued AMD design in the past. The AIAMD program provides the user with the ability to train on a single C2 system, resulting in overall training savings. The AIAMD program also provides the Army with the ability to procure components that interface with the Integrated Fire Control Network (IFCN), alleviating the cost of procuring total system capabilities in the future.

AIAMD Initial Operation Capability (IOC) will be delivered through the fielding of the IBCS-based AIAMD architecture including the IBCS EOC, IFCN Relay, Sentinel A3, and PATRIOT components working in an integrated manner through the IFCN connection. The government controlled open architecture enables integration of beyond IOC capabilities to meet emerging threats and fielding to include but, not limited to, Air Defense Airspace Management (ADAM) Cells, ADA Brigade, and Army Air and Missile Defense Command (AAMDC). The AIAMD Program will also continue integration with both Lower Tier Air and Missile Defense Sensor (LTAMDS) and Enduring Indirect Fire Protection Capability (IFPC).

Funding in FY 2023 supports agile software development and integration, developmental testing and requirements verification of the software build, operational testing, collective training and integration activities for integrated fires capabilities. Funding also continues Post-IOC 1-N Capabilities to include Terminal High Altitude Area Defense (THAAD) Planner, and F-35 Joint Striker. Funding includes test hardware requirements as well as lab infrastructure in order to support integration. Funds will

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

continue the development and integration efforts of the Remote Interceptor Guidance-360 (RIG-360), which will provide integration of an independent, adapted uplinker into IBCS to support 360 degree PAC-3 Missile Segment Enhancement (MSE) engagements outside the coverage of the current PATRIOT Radar.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Product Development ***Description:*** Product development in support of agile software development. ***FY 2022 Plans:*** The AIAMD Systems Engineering and Integration provides support for developmental and operational test activities; to include software integration testing and preparation/conduct of the Initial Operational Test and Evaluation (IOT&E) flight tests. Agile software development continues to support enduring development efforts and includes software fixes and improvements to counter emerging threats and incorporate emerging technology. Enduring capabilities require modeling and simulation Government Furnished Equipment of adapting weapon systems to develop and integrate with IBCS. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease is a result of the conclusion of IOC.	87.164	49.799	-
Title: Test and Evaluation ***Description:*** Test and Evaluation support for modeling and simulation, developmental test activities and IOT&E. ***FY 2022 Plans:*** Provides for continuation of Modeling and Simulation efforts at the Government Systems Integration Lab, Joint Interoperability Test Support, Army Test and Evaluation Center and White Sands Missile Range test support for developmental and operational test activities. Provides for preparation and conduct of the IOT&E flight tests and Full Rate Production Decision in third quarter FY 2022. Specific test efforts include: developmental testing and requirements verification of the latest agile software build; collective training with LTAMDS; OT&E with LTAMDS and Enduring IFPC. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease is a result of the conclusion of IOC	39.766	35.483	-
Title: Product Development - Beyond Initial Operational Capability (IOC) ***Description:*** Product development in support of agile software development and integration efforts for additional capability beyond that fielded at IOC. ***FY 2022 Plans:*** Funding is provided for initial Remote Interceptor Guidance-360 (RIG-360) development and integration efforts, which will ultimately provide integration of an independent, adapted Uplinker into IBCS to support 360 degree PAC-3 Missile Segment	60.395	46.526	147.849

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Enhancement (MSE) engagements outside the coverage of the current PATRIOT radar. Funding also supports agile software development for beyond IOC Capabilities including LTAMDS and IFPC. ***FY 2023 Plans:*** Funding provides support for developmental software integration testing. Agile software development continues to support enduring development efforts and includes software fixes and improvements to counter emerging threats and incorporate emerging technology. Funding also initiates the development, test, and integration of 1-N Capabilities to include ALPS, THAAD Planner, and F-35 Joint Striker. Funding supports JTMC Bridge Integration as well as IBCS development to support full weapon/ threat planning and engagements. Funding also supports the continued development of IFPC as well as the development and integration efforts of the RIG-360, which will provide integration of an independent, adapted Uplinker into IBCS to support 360 degree PAC-3 MSE engagements outside the coverage of the current PATRIOT radar. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase is a result of post-IOC development activities ramp up to address Army's 1-N capabilities.			
Title: Test and Evaluation - Beyond IOC Capability ***Description:*** Test and Evaluation support for modeling and simulation, developmental test, and follow-on operational test events for additional capability beyond that fielded at IOC. ***FY 2022 Plans:*** Provides for continuation of Modeling and Simulation efforts at the Government Systems Integration Lab, Joint Interoperability Test Support, Army Test and Evaluation Center, Orange Flag, Project Convergence, Joint All-Domain Command and Control, and White Sands Missile Range test support for developmental test activities. Specific test efforts include: software development and software requirements verification in PI 9-12, cyber testing, and test planning of future developmental and operational tests. ***FY 2023 Plans:*** Continues Modeling and Simulation efforts at the Government Systems Integration Lab, Joint Interoperability Test Support, Army Test and Evaluation Center, Orange Flag, Project Convergence, Joint All-Domain Command and Control, Integrated Test Fires, and White Sands Missile Range test support for developmental test activities. Specific test efforts include: software development and software requirements verification, cyber testing, initial testing for F-35 & RIG-360, and test planning of future developmental and operational tests. Funding includes test hardware requirements (2 EOCs, 2 ECTs, 2 ICEs, & 5 Relays) as well as lab infrastructure for additional test lines for RIG-360, JTMC, and THAAD Integration. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase is a result of post-IOC test and evaluation efforts ramp up to address Army's 1-N capabilities.	6.631	16.449	117.439
Title: SBIR/STTR Transfer	-	5.616	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:*** SBIR/STTR Transfer			
Accomplishments/Planned Programs Subtotals	193.956	153.873	265.288

	FY 2021	FY 2022
Congressional Add: Counter Emerging Threat ***FY 2021 Accomplishments:*** $20M Add to develop a System of Systems (SoS) Integration framework of standards, processes, techniques and tools to digital-engineer capability and design requirements for systems, subsystems, and components that are part of the IAMD enterprise.	20.000	-
Congressional Add: Kill Chain Automation ***FY 2022 Plans:*** Funding supports design, code, and integration of kill-chain automation enhancements into the Integrated Battle Command System (IBCS). Funding improves algorithms and techniques for target typing and Combat Identification to improve performance and reduce fratricide risks. Funding also improves design to the IBCS User Interface to streamline operator awareness and feedback for automated actions.	-	6.000
Congressional Adds Subtotals	20.000	6.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• C53101: *MSE Missile*	678.148	771.696	1,037.093	-	1,037.093	978.741	982.922	991.265	1,002.608	Continuing	Continuing
• EF9: *System Integration and Test*	-	-	-	-	-	-	-	-	-		
• EX2: *Lower Tier Air Missile Defense (LTAMD) Capability*	308.805	297.629	382.147	-	382.147	89.187	89.984	90.002	90.874	Continuing	Continuing
• EY7: *IFPC Increment 2 - Block 1*	152.399	182.257	131.093	-	131.093	59.266	10.774	10.778	-	Continuing	Continuing
• C62002: *IFPC INC 2-I BLOCK 1 SYSTEM*	62.461	19.053	18.924	-	18.924	386.383	670.667	712.994	722.152	0.000	2,592.634
• E10: *Sentinel*	105.271	122.607	71.259	-	71.259	74.055	31.655	8.578	8.662	Continuing	Continuing
• BZ5075: *IAMD Battle Command System*	198.587	296.872	438.967	-	438.967	412.920	457.335	458.445	457.608	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 146: *Air & Msl Defense Planning Control Sys*	8.085	2.877	1.255	-	1.255	3.495	3.281	3.282	3.315	Continuing	Continuing
• AD5070: *AIR & MSL Defense Planning & Control Sys*	62.517	67.193	72.619	-	72.619	-	-	-	-	0.000	202.329
• 149: *Counter-Rockets, Artillery & Mortar*	0.875	-	0.000	-	0.000	-	-	-	-	0.000	0.875
• 0604403A: *Future Interceptor*	-	6.895	8.179	-	8.179	8.210	8.202	8.205	8.285	0.000	47.976
• 0604117A: *Maneuver - Short Range Air Defense (M-SHORAD)*	5.776	39.376	225.147	-	225.147	461.536	519.511	252.825	271.364	0.000	1,775.535
• C14300: *M-SHORAD - Procurement*	517.287	331.575	135.747	-	135.747	58.336	205.657	487.003	487.120	Continuing	Continuing

Remarks

This program is an integral part of the Army Integrated Air and Missile Defense (AIAMD) architecture. It provides for development of a common Integrated Fire Control System through a government controlled open architecture approach allowing for integration of Air Defense Artillery (ADA) components as they become available. This approach enables the AIAMD program to maintain its baseline program independent of fluctuation of other programs.

D. Acquisition Strategy

The AIAMD acquisition strategy delivers an Initial Operational Capability (IOC) in FY 2023. The capabilities are delivered through the fielding of the IAMD Battle Command System (IBCS) based AIAMD architecture including the IBCS Engagement Operations Center (EOC), Sentinel A3, and PATRIOT (through a Radar Interface Unit (RIU)) components connected via an Integrated Fire Control Network (IFCN) Relay, working in an integrated manner while also incorporating the insertion of emerging technology. Future capabilities include but not limited to the incorporation of IBCS functionality into Enduring Indirect Fire Protection Capabilities (IFPC), Lower Tier Air and Missile Defense Sensor (LTAMDS), Army Persistent Surveillance System (ALPS), Terminal High Altitude Area Defense (THAAD) Planner, F-35 Joint Striker, Remote Interceptor Guidance-360 (RIG-360), and other Army and Joint weapon systems using an agile development process.

Key principles of the AIAMD acquisition approach are the following:
- Migrate from system-based acquisition to competitive, component-based acquisition using agile development/operations methodology IAW FY 2019 National Defense Authorization Act direction.
- Use system-of-systems acquisition approach with collaboration among AIAMD, PEO MS, PEO C3T, and Brigade Combat Team (BCT) Modernization Component Project Offices, Missile Defense Agency (MDA), and other Service Project Offices to network-enable weapons and sensor components.
- Develop and procure a common Army IBCS EOC that replaces seven weapon system unique Battle Management Command, Control, Communications, Computers and Intelligence (BMC4I) components.
- Establish product lines used to evaluate and select, modify and integrate modular open systems hardware and software common configuration items.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

- Conduct architecture-based System Engineering, Integration and Test (SEI&T) activities for an incrementally fielded configuration of the AIAMD Integrated Fire Control Network-compatible IBCS EOC, weapons and sensor system components to include testing of resiliency and survivability in a denied environment.
- The Follow-On Software Contract provides software-based improvements and capability additions to the Air and Missile Defense (AMD) weapon systems.
- Software testing occurs at the end of each quarterly Program Increment. First, with functional testing at the Contractor System Integration Lab (C-SIL), followed by regression and performance testing for requirements validation in the government System Integration lab (G-SIL). It is then delivered to WSMR for developmental testing with tactical Sensors and Weapons.
- The DAE approved the IAMD Software Acquisition Pathway (SWP) and LRIP Re-Characterization ADM on September 21, 2021. The ADM authorizes entry into the SWP Execution Phase and re-characterizes the IBCS FY 2022 quantity (26 IBCS EOCs) as LRIP versus FRP, increasing the total LRIP procurement from 19 to 45.
- This program provides common fires mission command capability that is the centerpiece of an integrated fires development effort that includes survivability, resiliency, and effectiveness improvements against advanced threats from near-peer adversaries. This effort includes component integration, common development tools and processes, and annual test and evaluation to provide data to support program assessments and progress toward closure of performance gaps.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Program Management	MIPR	Various : Huntsville, AL	35.528	-		-		-		-		-	Continuing	Continuing	Continuing
SBIR/STTR	Various	Various : TBD	-	-		5.616		-		-		-	0.000	5.616	-
		Subtotal	35.528	-		5.616		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AIAMD System Engineering & Integration	C/CPFF	Various : Huntsville, AL	216.764	21.006	Oct 2020	14.343	Jan 2022	33.361	Oct 2022	-		33.361	Continuing	Continuing	Continuing
IAMD Engineering Manufacturing and Development	SS/ Various	Northrop Grumman, Raytheon, Lockheed Martin and Other : Huntsville, AL and Various other locations	1,626.450	110.725	Oct 2020	46.956	Oct 2021	55.472	Oct 2022	-		55.472	Continuing	Continuing	Continuing
Government Furnished Equipment	MIPR	Various : Multiple	38.500	4.883	Oct 2020	2.755	Mar 2022	-		-		-	Continuing	Continuing	Continuing
Government Systems Engineering and Logistics	Various	Various : Huntsville, AL	116.140	10.945	Oct 2020	12.271	Nov 2021	10.300	Oct 2022	-		10.300	Continuing	Continuing	Continuing
Counter Emerging Threat	Various	AMRDEC/Torch Technologies : Huntsville, AL	85.000	20.000		-		-		-		-	0.000	105.000	-
Army 1-N Capability	Various	Various : TBD	-	-		20.000	Jun 2022	48.716	Oct 2022	-		48.716	Continuing	Continuing	-
Kill Chain Automation	Various	Various : TBD	-	-		6.000	May 2022	-		-		-	0.000	6.000	-
		Subtotal	2,082.854	167.559		102.325		147.849		-		147.849	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Test Activities/ Army Evaluation Center/ Developmental Test Command/Operational Test Command	MIPR	Various : Multiple Locations	94.047	19.033	Oct 2020	16.966	Nov 2021	14.262	Oct 2022	-		14.262	Continuing	Continuing	Continuing
Modeling & Sim/Joint Interoperability Test Spt	MIPR	SED : Huntsville, AL	223.508	15.828	Oct 2020	18.281	Nov 2021	48.954	Oct 2022	-		48.954	Continuing	Continuing	Continuing
Range Support	MIPR	WSMR : White Sands, NM	72.345	11.536	Oct 2020	16.685	Nov 2021	9.123	Oct 2022	-		9.123	Continuing	Continuing	Continuing
Army 1-N Capability	Various	Various : TBD	-	-		-		9.130		-		9.130	Continuing	Continuing	-
Test Hardware Requirements	Various	Various : TBD	-	-		-		35.970		-		35.970	0.000	35.970	-
		Subtotal	389.900	46.397		51.932		117.439		-		117.439	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2,508.282	213.956		159.873		265.288		-		265.288	Continuing	Continuing	N/A

Remarks

FY 2023 funding increase is a result of test hardware requirements (2 EOCs, 2 ECTs, 2 ICEs, & 5 Relays) as well as lab infrastructure for additional test lines with RIG-360, JTMC, and THAAD Integration. Funding supports IBCS development to support full weapon/threat planning and engagements.

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

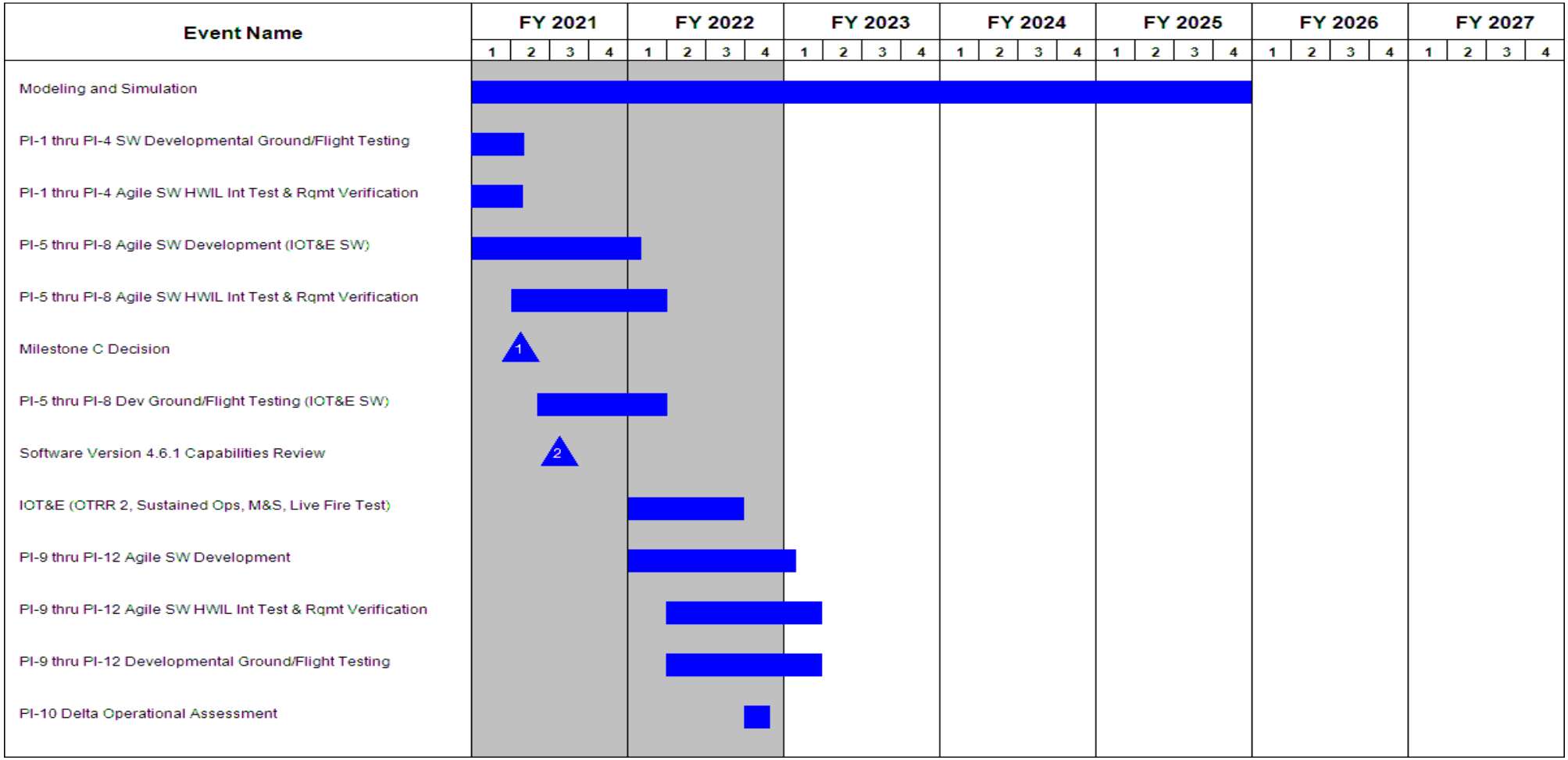


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

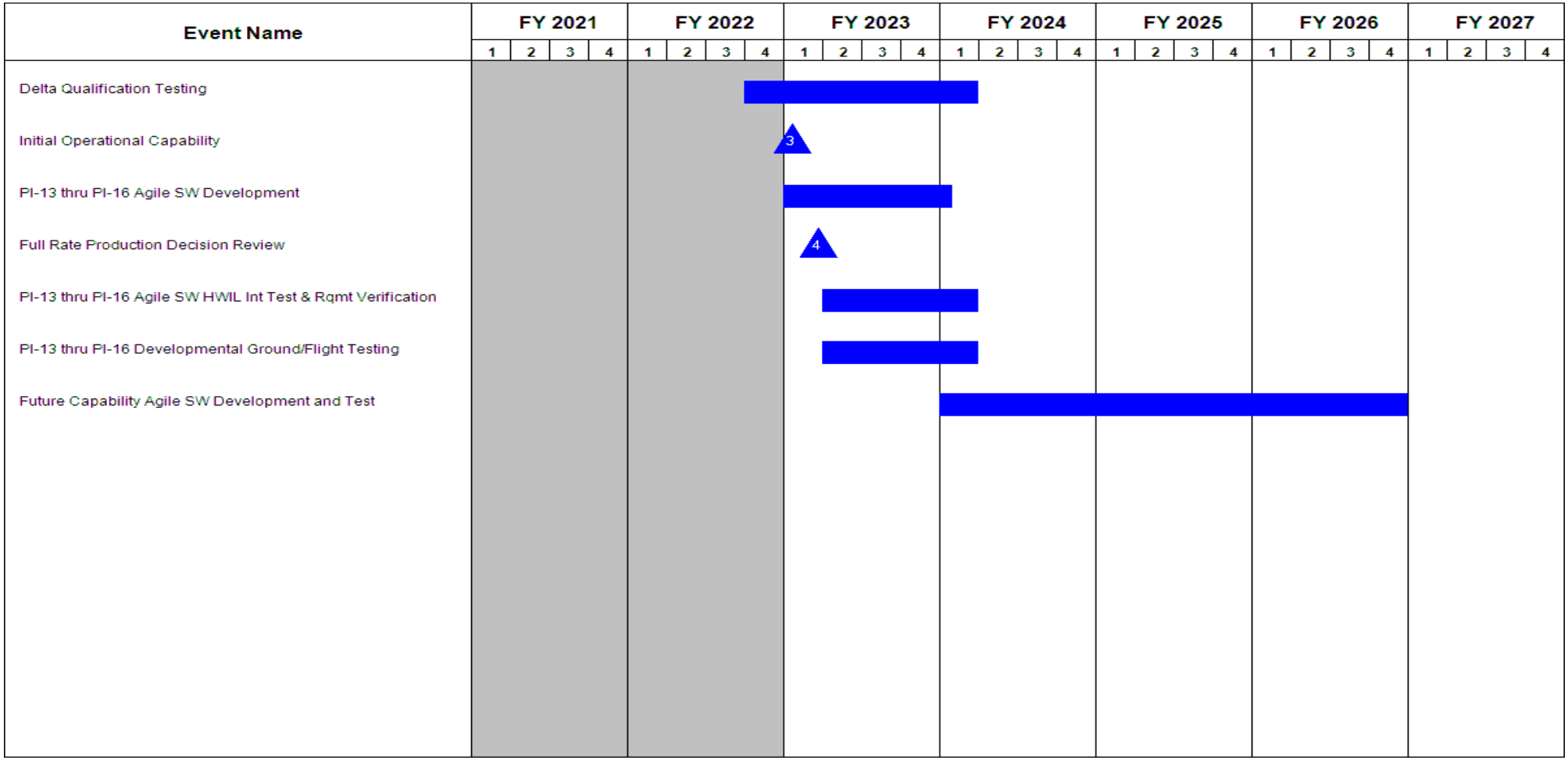


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Modeling and Simulation	1	2013	4	2025
EMD Developmental Test (DT)	4	2014	1	2017
Product Readiness Review (PRR)	4	2016	4	2016
EMD DT Continuation	1	2018	1	2020
v4.5.0 Software (SW) Development	2	2018	1	2020
v4.5.0 Developmental Ground/Flight Testing	3	2019	1	2020
PI-1 thru PI-4 Agile SW Development	1	2020	4	2020
PI-1 thru PI-4 SW Developmental Ground/Flight Testing	2	2020	2	2021
PI-1 thru PI-4 Agile SW HWIL Int Test & Rqmt Verification	2	2020	1	2021
Software Version 4.6.0 Capabilities Review	3	2020	3	2020
Limited User Test	4	2020	4	2020
PI-5 thru PI-8 Agile SW Development (IOT&E SW)	1	2021	1	2022
PI-5 thru PI-8 Agile SW HWIL Int Test & Rqmt Verification	2	2021	1	2022
Milestone C Decision	2	2021	2	2021
PI-5 thru PI-8 Dev Ground/Flight Testing (IOT&E SW)	2	2021	1	2022
Software Version 4.6.1 Capabilities Review	3	2021	3	2021
IOT&E (OTRR 2, Sustained Ops, M&S, Live Fire Test)	1	2022	3	2022
PI-9 thru PI-12 Agile SW Development	1	2022	1	2023
PI-9 thru PI-12 Agile SW HWIL Int Test & Rqmt Verification	2	2022	1	2023
PI-9 thru PI-12 Developmental Ground/Flight Testing	2	2022	1	2023
PI-10 Delta Operational Assessment	4	2022	4	2022
Delta Qualification Testing	4	2022	1	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605457A / *Army Integrated Air and Missile Defense (AIAMD)*	**Project (Number/Name)** S40 / *Army Integrated Air and Missile Defense*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Initial Operational Capability	1	2023	1	2023
PI-13 thru PI-16 Agile SW Development	1	2023	1	2024
Full Rate Production Decision Review	1	2023	1	2023
PI-13 thru PI-16 Agile SW HWIL Int Test & Rqmt Verification	2	2023	1	2024
PI-13 thru PI-16 Developmental Ground/Flight Testing	2	2023	1	2024
Future Capability Agile SW Development and Test	1	2024	4	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	-	33.386	14.892	-	14.892	15.190	15.069	17.539	12.077	0.000	108.153
CQ7: *C-sUAS Joint New Capabilities*	-	-	27.698	8.726	-	8.726	9.405	9.541	12.008	6.548	0.000	73.926
CQ8: *C-sUAS Joint Enabling Capabilities*	-	-	5.688	6.166	-	6.166	5.785	5.528	5.531	5.529	0.000	34.227

A. Mission Description and Budget Item Justification

The Secretary of Defense (SecDef) designated the Secretary of the Army (SA) as the Department of Defense's (DoD) Executive Agent (EA) for Counter-small Unmanned Aircraft Systems (C-sUAS). The EA is tasked with leading, directing, and synchronizing DoD efforts to counter small Unmanned Aircraft System (sUAS) threats while minimizing unnecessary duplication and redundancy. The C-sUAS efforts are in response to the DoD Joint Requirements Oversight Council Memorandum (JROC-M) requirement for identification, development, testing, evaluation, and integration of technologies to defeat sUAS threats across the DoD. The C-sUAS efforts provide warfighters the ability to comprehensively detect, track, identify, and defeat enemy Group 1, 2 and 3 UAS platforms. The efforts will be joint development efforts to provide integrated solutions to meet the needs of the Military Services and DoD Agencies against emerging threats.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	33.386	0.000	-	0.000
Current President's Budget	0.000	33.386	14.892	-	14.892
Total Adjustments	0.000	0.000	14.892	-	14.892
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	14.892	-	14.892

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	Project (Number/Name) CQ7 / *C-sUAS Joint New Capabilities*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CQ7: *C-sUAS Joint New Capabilities*	-	-	27.698	8.726	-	8.726	9.405	9.541	12.008	6.548	0.000	73.926
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Counter- small Unmanned Aircraft Systems (C-sUAS) new joint capability efforts develop new technologies and programs to enable joint acquisition programs to counter Groups 1-3 s UAS threats. These developments are aligned with the Joint Requirements Oversight Council Memorandum 078-20 Operational Requirements. Joint solutions will address Fixed Site / Semi-Fixed Site, Mobile, and Dismounted required by the Joint Forces. Efforts include development, test and evaluation, and integration sufficient for transition to fieldable capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Counter-small Unmanned Aircraft Development Defeat	-	17.719	4.420
Description: Development, integration, and test of new technologies to defeat sUAS. ***FY 2022 Plans:*** Execute development, integration, and test of new technologies to defeat sUAS. Technologies such as Low Collateral Effectors, High Power Microwave technology, and other defeat mechanisms will be developed for transition into production. ***FY 2023 Plans:*** Continue the development, integration, and test of new technologies to defeat sUAS. Low Collateral Effects Interceptor (LCEI) Inc. 1 will complete development and testing to inform Service and DoD procurement of LCEI. USAF will begin concurrent development and testing of Increment 2 during this fiscal year. USAF is the Joint Service Lead and is responsible for ensuring production contracts are in place for DoD, Services, and OGAs for Increment 1 and later for Increment 2 into the existing C-sUAS layered defense solution. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 decrease of $13.299 million as multiple efforts are completing and final integration of Low Collateral Effects Interceptor Increment 1 into existing C-sUAS layered defense solutions.			
Title: Counter-small Unmanned Aircraft Development Command and Control	-	6.018	4.000
Description: Development, integration, and test of new technologies to improve command and control for C-sUAS. ***FY 2022 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ7 / *C-sUAS Joint New Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Development, integration and test of new technologies to reduce operator burden, increase situational awareness, automate/ autonomy for decision making, and improve interoperability of C-sUAS system. ***FY 2023 Plans:*** Continue the development, integration and test of new technologies to reduce operator burden, increase situational awareness, automate/autonomy for decision making, and improve interoperability of C-sUAS system. High Level Data Fusion effort develops data products and standards for Data Fusion Architectures and transition to Services for use in C-sUAS C2 Systems and support ongoing assessments at the Fusion Integration and Evaluation Lab. Cross Domain Solution continues prototyping efforts, testing, and approval of the bi-directional cross domain solution. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 decrease of $2.018 million required for Cross Domain Solution and High Level Data Fusion efforts.			
Title: Counter-small Unmanned Aircraft Development Detection and Identification ***Description:*** Development, integration, and test of new technologies to improve detection and identification of emerging C-sUAS threats. ***FY 2022 Plans:*** Development, integration and test of new technologies to detect and identify C-sUAS threats at greater distance and accuracy. ***FY 2023 Plans:*** C-sUAS Detection and Identification Enhancements efforts support the development, integration and test of emerging technologies to improve the detection and identification of current and future C-sUAS threats at greater distance and accuracy. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 decrease of $2.644 million with the transition of Windtalker capability to Negation of Improvised Non-State Joint Aerial Threats (NINJA)	-	2.950	0.306
Title: FY22 SBIR/STTR ***FY 2022 Plans:*** Funding transferred in accordance with Title 15 USC ?638 ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC ?638	-	1.011	-
Accomplishments/Planned Programs Subtotals	-	27.698	8.726

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ7 / *C-sUAS Joint New Capabilities*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Joint C-sUAS new capability will address the Joint Requirements Oversight Council Memorandum (JROCM) 078-20 and be approved by the Department of Defense C-sUAS Executive Agent (EA) Governance. The C-sUAS EA Governance will approve the development efforts that meet identified gaps and the joint capability will be funded under this Program Element. The Joint Counter-sUAS Office will identify modifications to existing systems or identify new technologies within industry and Government S&T organization. Programs will leverage the flexibility of the Adaptive Acquisition Framework, and Service Acquisition Policies, and pursue a combination of acquisition pathways to deliver prototypes for evaluation and future decisions. Upon completion, Services will utilize a common procurement contract to meet the needs of the Military Services and DoD Agencies.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ7 / *C-sUAS Joint New Capabilities*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Low Collateral Effects Interceptor Development and Integration	TBD	Air Force Research Laboratory : Rome, NY	-	-		13.260		4.420		-		4.420	Continuing	Continuing	Continuing
High Power Microwave Development and Integration	TBD	Army Rapid Capabilities and Critical Technologies Office : Ft Belvoir, VA	-	-		1.089		-		-		-	Continuing	Continuing	Continuing
Windtalker Development and Integration	TBD	Air Force Research Laboratory : Rome, NY	-	-		2.968		-		-		-	Continuing	Continuing	Continuing
High Level Data Fusion	TBD	Naval Surface Warfare Center Crane : Crane, IN	-	-		3.000		1.000		-		1.000	Continuing	Continuing	Continuing
Cross Domain Solution	TBD	Naval Surface Warfare Center Crane : Crane, IN	-	-		2.000		3.000		-		3.000	Continuing	Continuing	Continuing
C-sUAS Detection and Identification Enhancements	TBD	Not Specified : Various	-	-		-		0.306		-		0.306	Continuing	Continuing	Continuing
FY22 SBIR/STTR	TBD	To Be Determined : To Be Determined	-	-		1.011		-		-		-	0.000	1.011	-
		Subtotal	-	-		23.328		8.726		-		8.726	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Low Collateral Effects Interceptor Capabilities and Limitations	TBD	Air Force Research Laboratory : Rome, NY	-	-		2.970		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	Project (Number/Name) CQ7 / *C-sUAS Joint New Capabilities*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
High Power Microwave Development and Integration	TBD	Army Rapid Capabilities and Critical Technologies Office : Ft. Belvoir, VA	-	-		0.400		-		-		-	Continuing	Continuing	Continuing
Cross Domain Solution	TBD	Naval Surface Warfare Center Crane : Crane, IN	-	-		1.000		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	-		4.370		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		27.698		8.726		-		8.726	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ7 / *C-sUAS Joint New Capabilities*

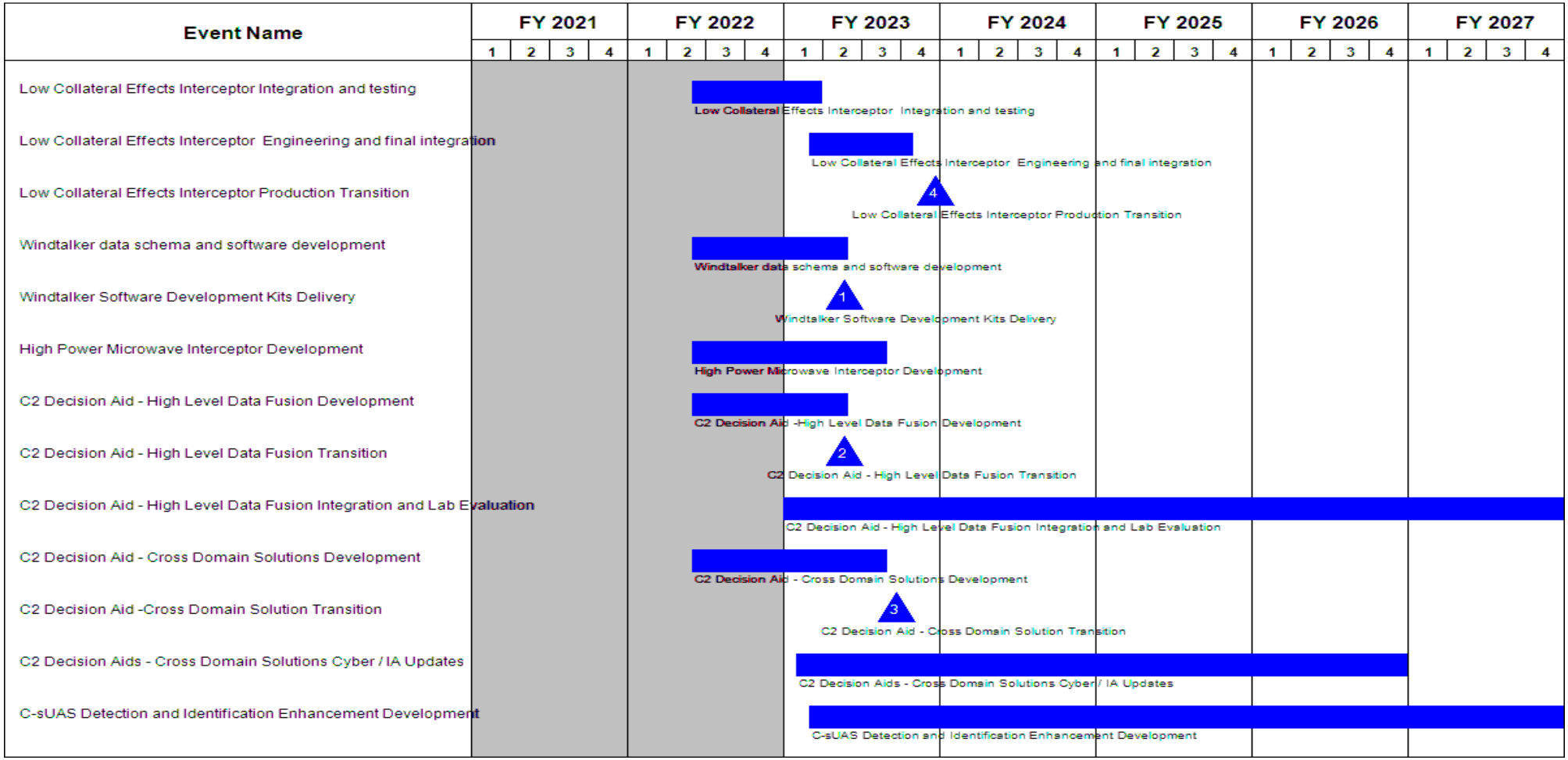


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ7 / *C-sUAS Joint New Capabilities*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Low Collateral Effects Interceptor Integration and testing	2	2022	1	2023
Low Collateral Effects Interceptor Engineering and final integration	1	2023	4	2023
Low Collateral Effects Interceptor Production Transition	4	2023	4	2023
Windtalker data schema and software development	2	2022	2	2023
Windtalker Software Development Kits Delivery	2	2023	2	2023
High Power Microwave Interceptor Development	2	2022	3	2023
C2 Decision Aid - High Level Data Fusion Development	2	2022	2	2023
C2 Decision Aid - High Level Data Fusion Transition	2	2023	2	2023
C2 Decision Aid - High Level Data Fusion Integration and Lab Evaluation	1	2023	4	2027
C2 Decision Aid - Cross Domain Solutions Development	2	2022	3	2023
C2 Decision Aid -Cross Domain Solution Transition	3	2023	3	2023
C2 Decision Aids - Cross Domain Solutions Cyber / IA Updates	1	2023	4	2026
C-sUAS Detection and Identification Enhancement Development	1	2023	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	Project (Number/Name) CQ8 / *C-sUAS Joint Enabling Capabilities*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CQ8: *C-sUAS Joint Enabling Capabilities*	-	-	5.688	6.166	-	6.166	5.785	5.528	5.531	5.529	0.000	34.227
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Counter- small Unmanned Aircraft Systems (C-sUAS) effort is in response to the Department of Defense's (DoD) response to the Joint Requirements Oversight Council Memorandum (JROC-M) to support identification, development, testing, evaluation, and integration of technologies to provide capability to defeat small Unmanned Aircraft System threats across the DoD. The C-sUAS efforts provide warfighters the ability to comprehensively detect, track, identify, and defeat enemy Group 1, 2 and 3 UAS platforms. The efforts will be joint development efforts to provide integrated solutions to meet the needs of the Military Services and DoD Agencies against emerging threats.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Common Data Repository Development	-	5.480	6.166
Description: Provide a joint multi-classification platforms to provide cross collaboration C-sUAS data and analytic eco-system for Class 1-3 small Unmanned Aircraft Systems. Data repositories will consume disparate data sources across the Department of Defense to include intelligence data, commercial data, and Military Service developed data to support acquisition and deployed C-sUAS systems. ***FY 2022 Plans:*** Execute the development operations of Common Data Repository to address emerging requirements and maintain technology to support the data analytics and populate data repository with intelligence organization sUAS threat characterization and signature development. ***FY 2023 Plans:*** Continue the development of a Common Data Repository and C-sUAS databases that address emerging C-sUAS threats and requirements to maintain technology that supports analytics and populates data repository with intelligence organization sUAS threat characterization and signature development. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY2023 increase of $0.686 million as efforts increase to develop C-sUAS Databases that address emerging requirements.			
Title: FY22 SBIR/STTR	-	0.208	-
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ8 / *C-sUAS Joint Enabling Capabilities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding transferred in accordance with Title 15 USC ?638			
FY 2022 to FY 2023 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC ?638			
Accomplishments/Planned Programs Subtotals	-	5.688	6.166

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Joint C-sUAS enabling efforts will address the Joint Requirements Oversight Council Memorandum (JROCM) 078-20 and be approved by the Department of Defense C-sUAS Executive Agent (EA) Governance. The JCO will establish a Common Data Repository for all Military Services and DoD Agencies to access current and relevant data for future C-sUAS system development and support to currently fielded systems. The JCO will draw from the intelligence community, academia, commercial, and Military Service databases to ensure consistency in datasets. This will eliminate redundant efforts for systems specific threat databases for use by all the Military Services and DoD Agencies. The Army Rapid Capabilities and Critical Technology Office (RCCTO) will provide acquisition support to the JCO to execute these efforts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	Project (Number/Name) CQ8 / *C-sUAS Joint Enabling Capabilities*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Common Data Repository Development	TBD	Army IC5ISR Center : Aberdeen Proving Ground, MD	-	-		2.792		3.386		-		3.386	Continuing	Continuing	Continuing
Electro Optical / Infrared Imagery Database	TBD	Naval Surface Warfare Center Crane : Crane, IN	-	-		1.551		1.570		-		1.570	Continuing	Continuing	Continuing
FY22 SBIR/STTR	TBD	To Be Determined : To Be Determined	-	-		0.208		-		-		-	0.000	0.208	-
		Subtotal	-	-		4.551		4.956		-		4.956	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Intelligence Community Database Linkages	TBD	National Ground Intelligence Center : APG, MD	-	-		1.137		1.210		-		1.210	Continuing	Continuing	Continuing
		Subtotal	-	-		1.137		1.210		-		1.210	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		5.688		6.166		-		6.166	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ8 / *C-sUAS Joint Enabling Capabilities*

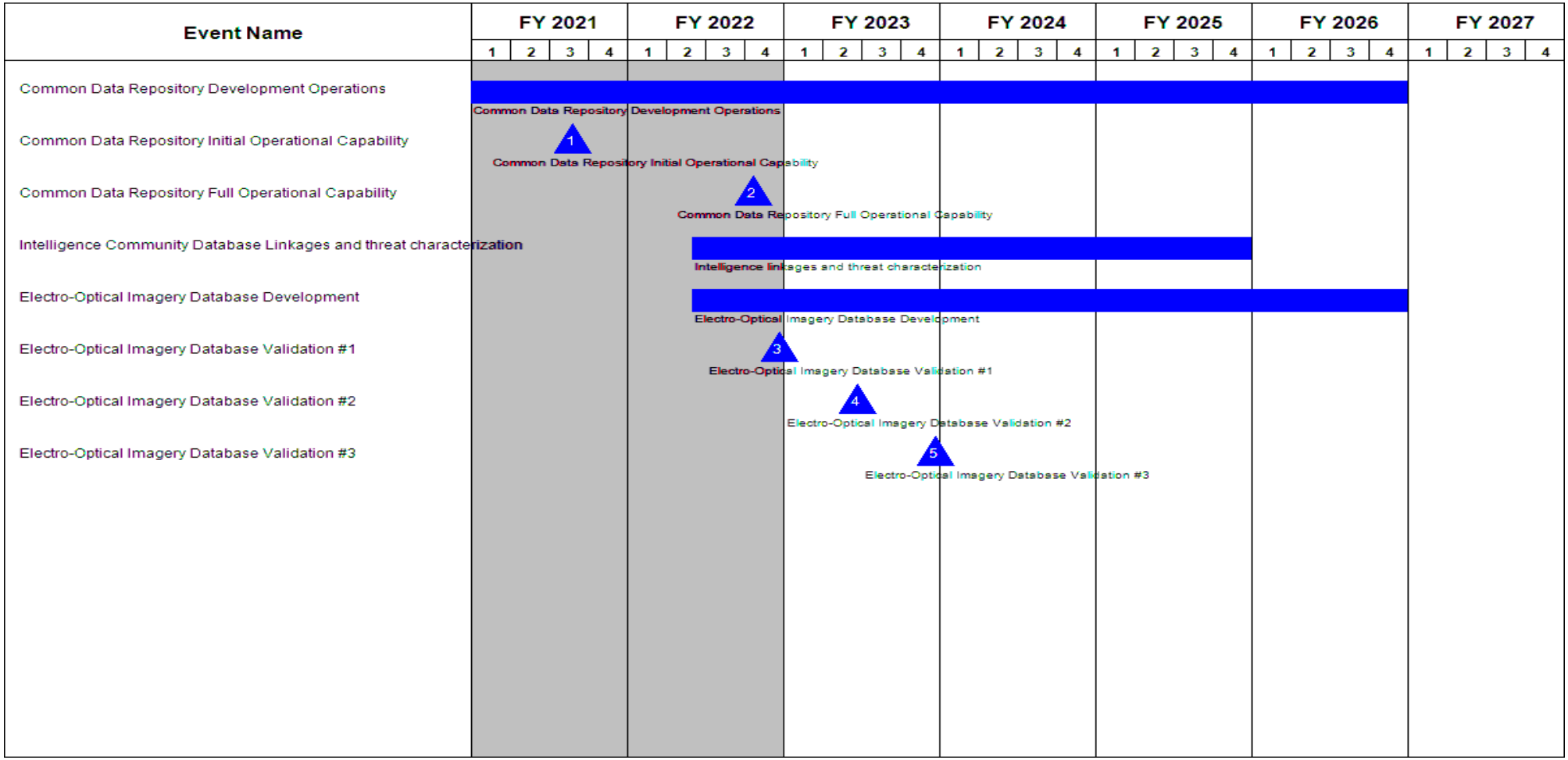


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605531A / *Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration*	**Project (Number/Name)** CQ8 / *C-sUAS Joint Enabling Capabilities*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Common Data Repository Development Operations	4	2020	4	2026
Common Data Repository Initial Operational Capability	3	2021	3	2021
Common Data Repository Full Operational Capability	4	2022	4	2022
Intelligence Community Database Linkages and threat characterization	2	2022	4	2025
Electro-Optical Imagery Database Development	2	2022	4	2026
Electro-Optical Imagery Database Validation #1	4	2022	4	2022
Electro-Optical Imagery Database Validation #2	2	2023	2	2023
Electro-Optical Imagery Database Validation #3	4	2023	4	2023

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605625A *I Manned Ground Vehicle*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	162.390	202.320	589.762	-	589.762	1,238.951	553.275	376.107	379.760	0.000	3,502.565
CF6: *Next Generation Combat Vehicle (OMFV)*	-	162.390	202.320	589.762	-	589.762	1,238.951	553.275	376.107	379.760	0.000	3,502.565

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Next Generation Combat Vehicle Army Modernization Priority. The Optionally Manned Fighting Vehicle (OMFV), as part of an Armored Brigade Combat Team (ABCT), will replace the Bradley Infantry Fighting Vehicle to provide the capabilities required to defeat a future near-peer competitor's force. The Army is seeking a transformational increase in warfighting capability, not simply another incremental improvement over the current Bradley Fighting Vehicle. The OMFV is a purpose built manned platform that maneuvers Soldiers to a point of positional advantage to engage in close combat. It is designed to operate with a two-Soldier crew or remotely and without a crew based on the commander's decision. It delivers decisive lethality during the execution of combined arms maneuver while also controlling maneuver robotics and semi-autonomous systems. The platform will be optimized for Life Cycle Environmental Profiles, both natural and induced, to remain safe, suitable and effective and with significantly reduced logistical burdens. The vehicle will be built in compliance with the recently approved government owned ground vehicle open architecture standard. The OMFV open architecture is the key enabler to rapid and cost effective future upgrades independent of the prime contractor. The rapidly changing character of warfare and pace of technology innovates the Army to change how it will deliver, operate and sustain the OMFV.

As part of an ABCT, the OMFV will not fight alone, but rather as part of a section, platoon, and company of mechanized infantry. These companies will execute cross-domain maneuver and defeat pacing threats in the close area while maneuvering Soldiers to tactical objectives. Once the unit has transitioned to an integrated mounted and dismounted fight, the OMFV supports our Soldiers with advanced sensors, lethality, protection, and mission command.

The total cost of the Optionally Manned Fighting Vehicle Middle Tier of Acquisition effort is $1,432.1 million RDT&E from FY2021 to FY2024. The Optionally Manned Fighting Vehicle is fully funded across the Future Years Defense Program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605625A / *Manned Ground Vehicle*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	171.890	225.106	0.000	-	0.000
Current President's Budget	162.390	202.320	589.762	-	589.762
Total Adjustments	-9.500	-22.786	589.762	-	589.762
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-22.786			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-9.500	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	589.762	-	589.762

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605625A / *Manned Ground Vehicle*	Project (Number/Name) CF6 / *Next Generation Combat Vehicle (OMFV)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CF6: *Next Generation Combat Vehicle (OMFV)*	-	162.390	202.320	589.762	-	589.762	1,238.951	553.275	376.107	379.760	0.000	3,502.565
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Next Generation Combat Vehicle Army Modernization Priority. The Optionally Manned Fighting Vehicle (OMFV), as part of an Armored Brigade Combat Team (ABCT), will replace the Bradley Infantry Fighting Vehicle to provide the capabilities required to defeat a future near-peer competitor's force. The Army is seeking a transformational increase in warfighting capability, not simply another incremental improvement over the current Bradley Fighting Vehicle. The OMFV is a purpose built manned platform that maneuvers Soldiers to a point of positional advantage to engage in close combat. It is designed to operate with a two-Soldier crew or remotely and without a crew based on the commander's decision. It delivers decisive lethality during the execution of combined arms maneuver while also controlling maneuver robotics and semi-autonomous systems. The platform will be optimized for Life Cycle Environmental Profiles, both natural and induced, to remain safe, suitable and effective and with significantly reduced logistical burdens. The vehicle will be built in compliance with the recently approved government owned ground vehicle open architecture standard. The OMFV open architecture is the key enabler to rapid and cost effective future upgrades independent of the prime contractor. The rapidly changing character of warfare and pace of technology innovates the Army to change how it will deliver, operate and sustain the OMFV.

As part of an ABCT, the OMFV will not fight alone, but rather as part of a section, platoon, and company of mechanized infantry. These companies will execute cross-domain maneuver and defeat pacing threats in the close area while maneuvering Soldiers to tactical objectives. Once the unit has transitioned to an integrated mounted and dismounted fight, the OMFV supports our Soldiers with advanced sensors, lethality, protection, and mission command.

The total cost of the Optionally Manned Fighting Vehicle Middle Tier of Acquisition effort is $1,432.1 million RDT&E from FY2021 to FY2024. The Optionally Manned Fighting Vehicle is fully funded across the Future Years Defense Program.

This program supports the Next Generation Combat Vehicle Cross Functional Team.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Government Engineering & Program Management	13.366	17.066	34.823
Description: Provides Government System Engineering and Program Management support. Funding will cover the costs of government and direct support contractor labor, travel, training, supplies, equipment and facilities to effectively manage Project Management Office, Maneuver Combat Systems (PM MCS).			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** CF6 / *Next Generation Combat Vehicle (OMFV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Provides Government System Engineering and Program Management support. Costs include matrix and SETA contractors within PM MCS as well as SSEB expense for the detailed design contracts. This funding will include the cost of government and direct support contractor labor, travel, training, supplies, equipment and facilities to effectively manage the PM MCS program. ***FY 2023 Plans:*** Provides Government System Engineering & Program Management Support. This funds the efforts to include contract close-outs of Concept Design contracts for up to 5 vendors and covers the management support requirements pre and post award of Detailed Design contracts for up to 3 vendors. These costs reflect the RDTE funded costs for Matrix within the PM MCS PMO includes the of SETA support in critical areas of the design of an open-architected OMFV including cyber security, software development and system architecture. These funds also support the execution of a source selection board for up to 3 vendors for the Phase 3 and 4 contracts for Detailed Design / Prototype Build and Test. This funding will include the cost of digital engineering tools, government and direct support contractor labor, travel, training, supplies, equipment and facilities to effectively manage the PM MCS program. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase from FY 2022 to FY 2023 is reflective of the creation of the digital engineering environment to manage the program across 3 vendors, increase in labor rates, inflation, and the additional pre and post award of contracts for up to 3 vendors.			
Title: Digital Engineering ***FY 2023 Plans:*** This funding will includes the costs to establish and maintain a cloud-based Digital Engineering (DE) environment. DE costs include individual software (SW) licenses for the required Product Lifecycle Management (PLM) software. Integration costs include the creation of Automatic Program Interfaces (API) between the PLM software and various government owned modeling and simulation tools to accelerate the pace of analysis of the up to 3 Phase 3 OMFV contractors. Integration of these tools within the DE environment enables frequent, continuous, and iterative assessment of a contractor?s digital design with a view towards identifying and addressing technical risk as early and cost effectively as possible. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase from FY 2022 to FY 2023 is reflective of the creation of the digital engineering environment to manage the program across 3 vendors, increase in labor rates, inflation, and the additional pre and post award of contracts for up to 3 vendors.	-	-	5.500
Title: Product Development ***Description:*** Costs include the continuation of Concept Design efforts including System Functional Review (SFR) and development towards PDR. Contractor efforts include Development Engineering, Producibility Engineering and Planning, Development Tooling, System Engineering and Program Management, Data and Special Equipment.	133.055	166.398	509.782

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** CF6 / *Next Generation Combat Vehicle (OMFV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: Costs include the remaining funding for the contract award of up to 5 vendors. These costs include the continuation of concept design efforts including System Readiness Review (SRR) and development towards System Functional Review (SFR). Contractor efforts include development engineering, producibility engineering and planning, development tooling, system engineering, initial logistics data and product development, and data and special equipment. ***FY 2023 Plans:*** As the program transitions from Contractor Concept Design to Contractor Detailed Design, this effort funds the initial funding period of Detailed Design contracts for up to 3 vendors. This includes labor and material costs for Design Engineering pre and post PDR, System Engineering and Program Management and Technical Data Development. This funding will support the development of a System Integration Laboratory for the vendors to test and deploy critical software improvements for government verification. The funding also procures hardware necessary for up to 3 vendors to build and integrate critical subsystems as part of an early risk reduction prototype delivery. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase from FY 2022 to FY 2023 is reflective of the increase in the development efforts for 3 vendors through Preliminary Design Review (PDR) with work towards Critical Design Review (CDR).			
Title: Modeling Simulation & Analysis ***Description:*** Government Modeling,Simulation and Analysis in support of requirements analysis and concept refinement. ***FY 2022 Plans:*** Costs include government modeling, simulation, and analysis in support of requirements analysis and concept refinement, includes but not limited to activities that provide results on mobility, lethality, survivability, human cognitive performance, and human systems integration. ***FY 2023 Plans:*** FY 2023 funds the Modeling and Simulation and Subsystem Testing of awarded Contractor Designs and their respective components in support of PDR with efforts towards CDR. This also funds the development and verification, validation, and accreditation of new models to support future testing. This funding will also support execution of the Army?s formal Analysis of Alternatives. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase from FY 2022 to FY 2023 is reflective of the increase in model-based evaluation of contractor designs.	6.075	3.571	9.235
Title: Other Support Cost	4.594	2.600	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** CF6 / *Next Generation Combat Vehicle (OMFV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: OMFV studies and research which includes the completion of the AoA, completion of milestone documentation development, and detailed trade space studies and analysis. ***FY 2022 Plans:*** Costs includes continued OMFV studies and research, completion of milestone documentation development, and detailed trade space studies, analysis, and subsystem studies in critical areas. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease from FY 2022 to FY 2023 is reflective of the accomplishments/categories being better defined. Costs have been reallocated to Technology Maturation & Government Architecture.			
Title: Government Architecture ***Description:*** Develop the USG baseline architecture by enhancing PEO GCS Common Infrastructure Architecture (GCIA) based on Modular Open Systems Approach (MOSA) to guide the OMFV system development. The effort is directed by the Army Acquisition Executive to achieve transformational capabilities for OMFV via Modular, Open and Scalable Architecture, and by using applicable open standards. The effort will be executed by PEO GCS, PM MCS, and ASA (ALT)?s Chief Technology Officer teams cohort with applicable CCDC and ARL teams, and industry consortium ***FY 2022 Plans:*** Costs include the continued development of the Common Infrastructure Architecture to guide the development of the OMFV, including, but not limited to, digital modeling, Architecture Integration Laboratory, and the Architectural Description. ***FY 2023 Plans:*** This effort funds the continued refinement of the ground vehicle open architecture standard and maintenance of the Architectural Foundry to guide the development of the OMFV, including, but not limited to, digital modeling, Architecture Integration Laboratory, and the Architectural Description. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The decrease from FY 2022 to FY 2023 is reflective of the accomplishments/categories being better defined. Costs have been reallocated to Technology Maturation & Analysis.	5.300	5.301	4.602
Title: Technology Maturation & Analysis ***FY 2023 Plans:*** This effort funds the Detailed Design parallel efforts focused on maturation of key subsystems and demonstration of transformational capabilities for future rapid integration using DE principles. These efforts include, but are not limited to: reliability improvements and of qualification testing of the XM913 50mm cannon based on an independent technical assessment, initial	-	-	25.820

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** CF6 / *Next Generation Combat Vehicle (OMFV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
integration by a University Affiliated Research Center (UARC) of key subsystems across the open architecture standard to demonstrate organic OMFV counter unmanned aerial system (C-UAS) and counter antitank guided missile (C-ATGM) applications on a technology demonstrator platform, and initial work to transition existing government owned autonomy and reduced crew operation software into a format that is agnostic of a vehicle?s operating system and able to operate with the open architecture standard. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The increase from FY2022 to FY2023 is reflective of the technology improvements necessary to accelerate integration of key enabling technologies following independent technical assessments by Johns Hopkins Applied Physics Laboratory and Georgie Tech Research Institute.			
Title: SBIR/STTR Transfer ***FY 2022 Plans:*** SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred in accordance with Title 15 USC 638.	-	7.384	-
Accomplishments/Planned Programs Subtotals	162.390	202.320	589.762

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Optionally Manned Fighting Vehicle (OMFV) is a Middle Tier Acquisition - Rapid Prototyping Program and is designed to maneuver Soldiers in the Forward Operating Environment to a position of advantage to engage in close combat and deliver decisive lethality during the execution of combined arms maneuver. The OMFV must exceed current capabilities while overmatching similar threat class systems. It must be optimized for urban and rural terrain areas, while also defeating pacing threats, and be characterized by the ability to spiral in advanced technologies as they mature. The capabilities desired focus to improve lethality, protection, mobility, range, survivability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605625A / *Manned Ground Vehicle*	Project (Number/Name) CF6 / *Next Generation Combat Vehicle (OMFV)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		7.384	Mar 2022	-		-		-	0.000	7.384	-
		Subtotal	-	-		7.384		-		-		-	0.000	7.384	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Support Costs	TBD	TBD : TBD	8.962	4.594	Mar 2021	2.600	Apr 2022	-		-		-	0.000	16.156	-
Product Development	TBD	TBD : TBD	-	133.055	Jul 2021	166.398	Jun 2022	509.782	Mar 2023	-		509.782	0.000	809.235	-
Government Architecture	TBD	TBD : TBD	-	5.300	Jul 2021	5.301	Apr 2022	4.602	Jun 2023	-		4.602	0.000	15.203	-
Technology Maturation & Analysis	TBD	TBD : TBD	-	-		-		25.820	Mar 2023	-		25.820	0.000	25.820	-
Digital Engineering	TBD	TBD : TBD	-	-		-		5.500	Jan 2022	-		5.500	0.000	5.500	-
		Subtotal	8.962	142.949		174.299		545.704		-		545.704	0.000	871.914	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering & Program Management	MIPR	Warren, MI : TBD	8.412	13.366	Jun 2021	17.066	Jun 2022	34.823	Apr 2023	-		34.823	0.000	73.667	-
		Subtotal	8.412	13.366		17.066		34.823		-		34.823	0.000	73.667	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Modeling Simulation & Analysis	TBD	TBD : TBD	-	6.075	Jun 2021	3.571	Apr 2022	9.235	Mar 2023	-		9.235	0.000	18.881	-
		Subtotal	-	6.075		3.571		9.235		-		9.235	0.000	18.881	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605625A / *Manned Ground Vehicle*	Project (Number/Name) CF6 / *Next Generation Combat Vehicle (OMFV)*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.374	162.390		202.320		589.762		-		589.762	0.000	971.846	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** CF6 / *Next Generation Combat Vehicle (OMFV)*

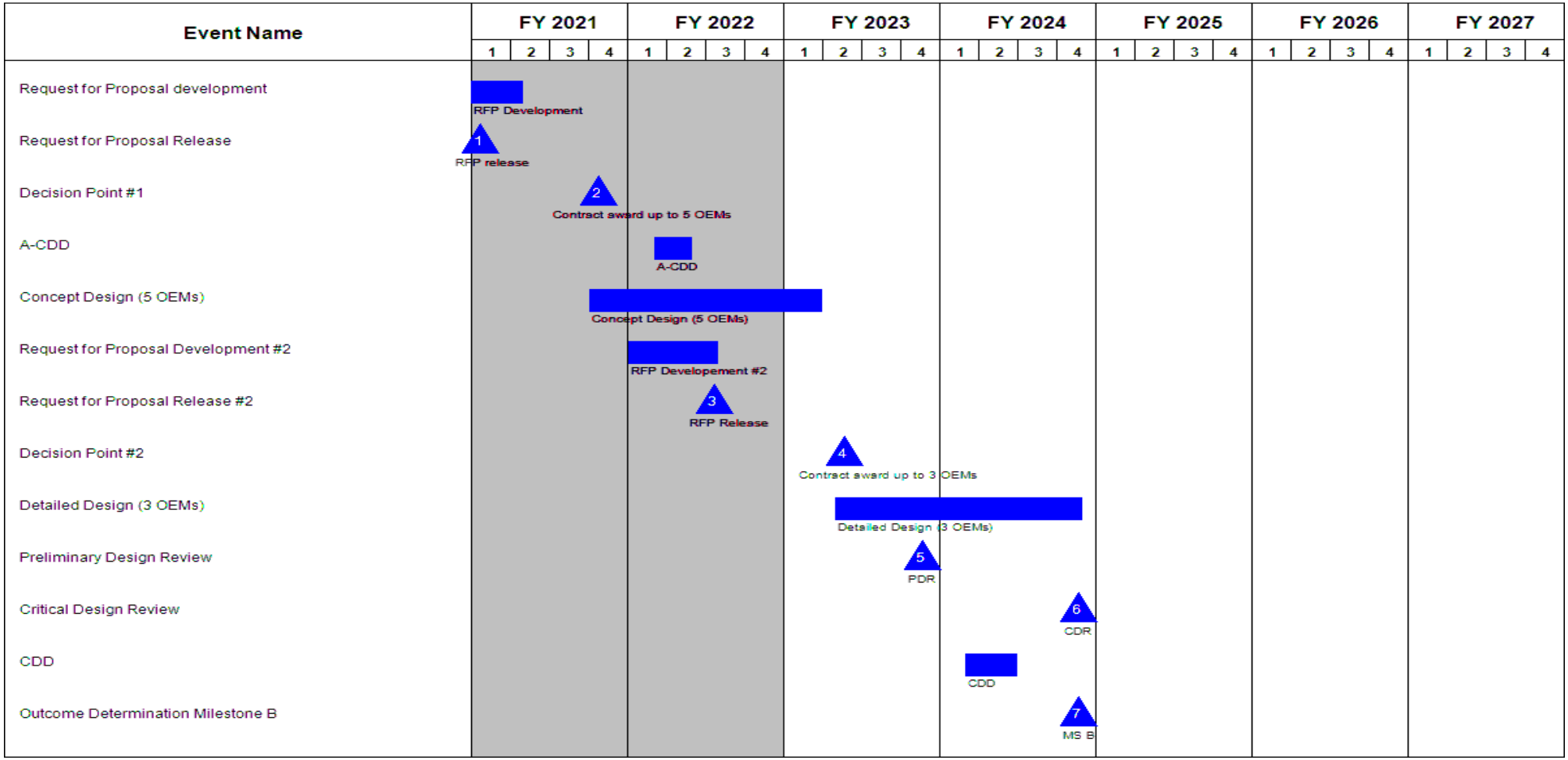


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** CF6 / *Next Generation Combat Vehicle (OMFV)*

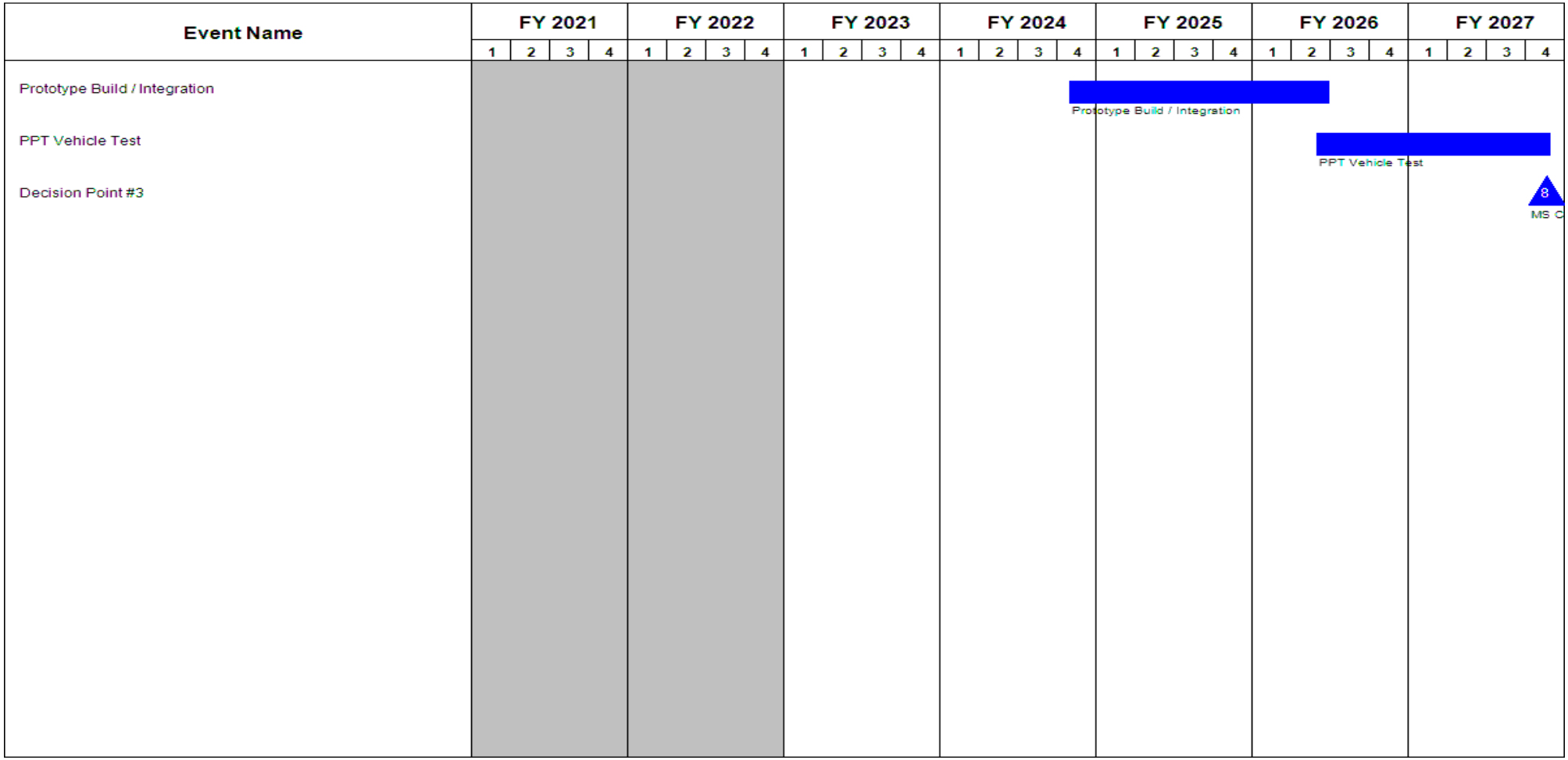


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605625A / *Manned Ground Vehicle*	**Project (Number/Name)** CF6 / *Next Generation Combat Vehicle (OMFV)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Request for Proposal development	2	2020	1	2021
Request for Proposal Release	1	2021	1	2021
Decision Point #1	4	2021	4	2021
A-CDD	1	2022	2	2022
Concept Design (5 OEMs)	4	2021	1	2023
Request for Proposal Development #2	1	2022	3	2022
Request for Proposal Release #2	3	2022	3	2022
Decision Point #2	2	2023	2	2023
Detailed Design (3 OEMs)	2	2023	4	2024
Preliminary Design Review	4	2023	4	2023
Critical Design Review	4	2024	4	2024
CDD	1	2024	2	2024
Outcome Determination Milestone B	4	2024	4	2024
Prototype Build / Integration	4	2024	2	2026
PPT Vehicle Test	2	2026	4	2027
Decision Point #3	4	2027	4	2027

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	7.670	13.454	17.030	-	17.030	15.448	17.291	17.688	17.860	0.000	106.441
BV3: *Technical Intel Targeting Access Node (TITAN)*	-	-	5.729	7.057	-	7.057	5.254	6.942	7.134	7.204	0.000	39.320
DX9: *National Integration To Tactical Systems*	-	4.219	2.796	3.197	-	3.197	3.254	3.278	3.480	3.513	0.000	23.737
EX7: *Air Vigilance System Development*	-	3.451	4.929	6.776	-	6.776	6.940	7.071	7.074	7.143	0.000	43.384

A. Mission Description and Budget Item Justification

Tactical Exploitation of National Capabilities (TENCAP) exploits national capabilities to pace evolving threats in support of operations during conflict and competition. TENCAP systems and technologies provide deep sensing to support commanders' situational understanding (patterns of life, threat intentions, etc.), indications & warnings (detection of enemy mobilization and hostile activity), and intelligence support to targeting (order of battle, electronic target folders, target detection, Battle Damage Assessment, etc.). TENCAP systems and technologies support Theater-level fires and effects, TENCAP systems enable integrated Signals Intelligence (SIGINT) / Electronic Warfare (EW) / and Cyberspace operations. TENCAP supports Army modernization priorities including Long Range Precision Fires, Assured Position Navigation and Timing/Space (PNT/S), Future Vertical Lift (FVL), and Air Missile Defense (AMD). In summary, TENCAP is a key enabler to defeating peer competitor Anti-Access / Area-Denial (A2/AD) strategies.

This Program Element includes three separate projects described below.
1. Tactical Intelligence Targeting Access Node (TITAN) (BV3) - This project includes funding for system integration and testing of the TITAN (space) Pre-Prototype that will provide specific Army units with assured access to space-based Intelligence, Surveillance, and Reconnaissance (ISR) sensor data from Commercial and National levels. The follow-on effort to the TITAN (space) Pre-Prototype is testing and integration of the Space Ground Component Kit (SGCK) into the TITAN Program of Record. The SGCK consists of antennas, other RF components, and other capabilities developed as part of the TITAN (space) Pre-Prototype effort.
2. National Integration to Tactical Systems (DX9) - This project enables the Army's Tactical Exploitation of National Capabilities (TENCAP) office to monitor, synchronize, and transition proven, advanced technologies, prototypes and standards, developed by the National Intelligence Community (IC), into Army systems and Programs of Record during the most cost-effective, early stages of development.
3. Air Vigilance (AV) Program of Record (POR) (EX7) - This project provides System Development and Integration funds for the classified POR.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0605766A *I National Capabilities Integration (MIP)*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	7.670	14.454	0.000	-	0.000
Current President's Budget	7.670	13.454	17.030	-	17.030
Total Adjustments	0.000	-1.000	17.030	-	17.030
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	17.030	-	17.030

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding. The $1.0 million reduction is a result of an Appropriation Conference mark to the PB22 budget request.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) BV3 / *Technical Intel Targeting Access Node (TITAN)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
BV3: *Technical Intel Targeting Access Node (TITAN)*	-	-	5.729	7.057	-	7.057	5.254	6.942	7.134	7.204	0.000	39.320
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

All funding is in support of the ACTIVE COMPONENT.

A. Mission Description and Budget Item Justification

TENCAP TITAN System Development and Demonstration, accomplished with 6.4 RDT&E funds (project BX9), enables demonstration and integration of space-to-ground station capabilities in the TITAN Program of Record vehicles using 6.5 RDT&E funds in the BV3 project. The integration of these capabilities into the TITAN Program of Record vehicles provides timely assured access to National and Commercial Space-Based Intelligence, Surveillance, and Reconnaissance (ISR) sensor data supporting Warfighting commanders' situational understanding (patterns of life, threat intentions, etc.), indications & warnings (detection of enemy mobilization and hostile activity), and intelligence support to targeting (order of battle, electronic target folders, target detection, Battle Damage Assessment, etc.).

FY2023 base funds in the amount of $7.057 million fund integration and demonstration of TITAN (space) Pre-Prototype and integration of the SGCK into the TITAN PoR. The SGCK will follow a Modular Open Systems Approach (MOSA) to support seamless integration of future space capability into the TITAN POR. This project realigned from the TENCAP Project (907) into Project BV3 effective FY2022.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: BV3 / Tactical Intelligence Targeting Access Node (TITAN) Prototype System	-	5.729	7.057
Description: The Tactical Intelligence Targeting Access Node (TITAN) (space) Pre-Prototypes is a Key Enabler of Army Modernization priorities that will provide the following capability to the Army: 1. Timely, assured intelligence for Long Range Precision Fires (LRPF) and maneuver in contested and Anti-Access / Area-Denial (A2/AD) environments. 2. Assured access to ISR sensor data collected at Commercial and National, levels. 3. Software analytics capability to enable the intelligence cycle with increased speed, precision, and accuracy. 4. Automated/Assisted Sensor-to-Shooter (S2S) workflows with increased speed, scalability, and accuracy to support LRPF in an A2/AD environment. 5. Modern and consolidated ground station for National and Commercial, sensors. Successful development and deployment of the TITAN (space) Pre-Prototypes paves the way for final development of the Space Ground Component Kit (SGCK) that will be integrated into and provide these same capabilities for the TITAN POR.			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** BV3 / *Technical Intel Targeting Access Node (TITAN)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
FY 2022 Plans: Continue the integration of new ingest and processing capabilities into the TITAN (space) Pre-Prototype system and sub-systems. Also continue the integration and refinement of automated/assisted target recognition and integration with the fires architecture to support Army's #1 priority - Long Range Precision Fires LRPF. The TITAN (space) Pre-Prototype will provide direct and rapid availability of National Reconnaissance Office (NRO) Overhead Systems (NOS), Geospatial Intelligence (GEOINT), and Signal Intelligence (SIGINT). capabilities. The TITAN (space) Pre-Prototype will also include access to emerging Low Earth Orbit (LEO) constellations, and improved downlink, ingest, and processing of commercial and government remote sensing data. ***FY 2023 Plans:*** Finalize TITAN (space) Pre-Prototype integration and support capability demonstrations. Integrate new technologies and processing capabilities into the TITAN Program of Record (POR) through the Space Ground Component Kit (SGCK) subsystems including access to additional space sensor constellations, improving assured access of space sensor data, ingest and processing of commercial and government remote sensing data, and integration of newly-developed antenna to meet Army mobility and collection requirements in the TITAN POR. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funds increased to support integration and delivery of initial SGCK components into the TITAN POR. This supports integration of the SGCK into the TITAN POR, after those capabilities are successfully proven through demonstration of the TITAN (space) Pre-Prototype systems in Army exercises, and as approved by the Army Tactical Exploitation of National Capabilities (TENCAP) General Officers' Steering Group(TGOSG).			
Accomplishments/Planned Programs Subtotals	-	5.729	7.057

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603766A: *Tactical Electronic Surveillance System - Adv Dev*	182.400	113.365	72.314	-	72.314	64.799	37.048	36.646	37.072	Continuing	Continuing

Remarks

D. Acquisition Strategy

The TITAN (space) Pre-Prototype requirement was validated by the TGOSG in April 2019. In order to maximize agility and innovation in acquisition, TENCAP worked with the Defense Innovation Unit (DIU) to establish an Other Transaction Authority (OTA) agreement to develop the TITAN (space) Pre-Prototype and follow-on SGCK capabilities. The TITAN (space) Pre-Prototype will provide a modernized, deployable, ground station capable of rapidly and semi-autonomously tasking, receiving, processing, exploiting, fusing, and disseminating space-based sensor data to provide networked situational awareness and direct tactical support to Army commanders

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** BV3 / *Technical Intel Targeting Access Node (TITAN)*

at echelon. The TITAN (space) Pre-Prototype will reduce S2S latency to allow timely intelligence support to the commander. The TITAN (space) Pre-prototype will use an agile acquisition strategy, and will maximize non-proprietary / modular open system architectures (MOSA) to enable easy upgrade of software/firmware, analytics/ algorithms, and ingest additional data streams as commercial vendors and national data become available. This OTA was preceded by Soldier touchpoints to inform this acquisition. Soldier engagement is planned throughout the development and demonstration of the TITAN (space) Pre-Prototype. The capabilities successfully demonstrated in the TITAN (space) Pre-Prototype will be integrated into the TITAN POR through the SGCK.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) BV3 / *Technical Intel Targeting Access Node (TITAN)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TITAN (space) Prototype Engineering Services	C/CPFF	TBD : TBD	-	-		0.329	Jan 2022	0.385	Jan 2023	-		0.385	0.000	0.714	-
		Subtotal	-	-		0.329		0.385		-		0.385	0.000	0.714	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TITAN (space) Pre-Prototype	C/FFP	Northrup Grumman : Aurora, CA	-	-		4.500	Jan 2022	5.742	Jan 2023	-		5.742	0.000	10.242	-
		Subtotal	-	-		4.500		5.742		-		5.742	0.000	10.242	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TITAN (space) Pre-Prototype Development	Allot	Army TENCAP : Alexandria, VA	-	-		0.500	Jan 2022	0.500	Jan 2023	-		0.500	0.000	1.000	-
		Subtotal	-	-		0.500		0.500		-		0.500	0.000	1.000	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Exercises for TITAN (space) Pre-Prototype Development	C/FFP	Multiple : Multiple	-	-		0.400	Jan 2022	0.430	Jan 2023	-		0.430	0.000	0.830	-
		Subtotal	-	-		0.400		0.430		-		0.430	0.000	0.830	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) BV3 / *Technical Intel Targeting Access Node (TITAN)*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		5.729		7.057		-		7.057	0.000	12.786	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** BV3 / *Technical Intel Targeting Access Node (TITAN)*

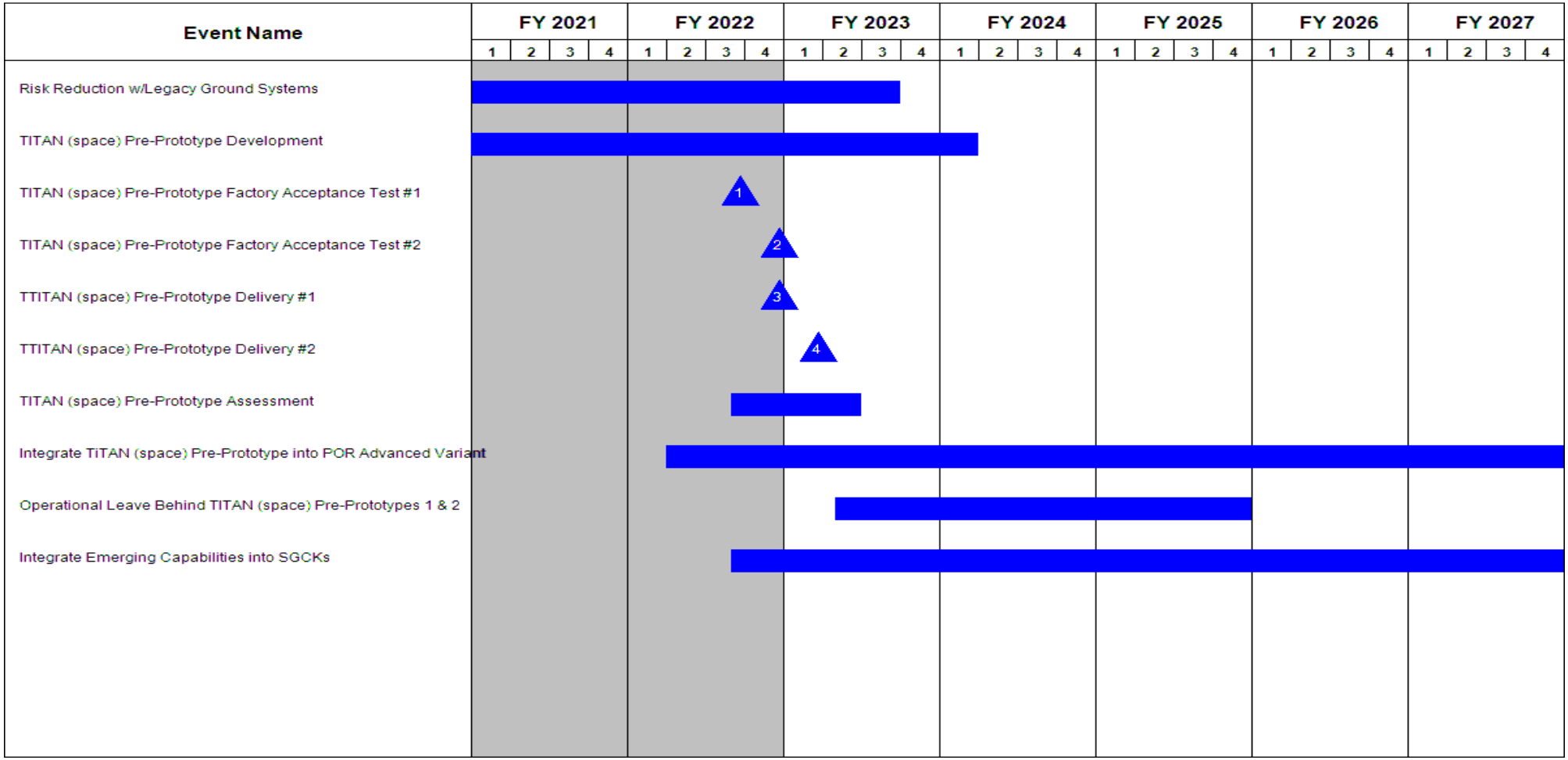


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** BV3 / *Technical Intel Targeting Access Node (TITAN)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Risk Reduction w/Legacy Ground Systems	1	2020	3	2023
TITAN (space) Pre-Prototype Development	4	2020	1	2024
TITAN (space) Pre-Prototype Factory Acceptance Test #1	3	2022	3	2022
TITAN (space) Pre-Prototype Factory Acceptance Test #2	4	2022	4	2022
TTITAN (space) Pre-Prototype Delivery #1	4	2022	4	2022
TTITAN (space) Pre-Prototype Delivery #2	1	2023	1	2023
TITAN (space) Pre-Prototype Assessment	3	2022	2	2023
Integrate TiTAN (space) Pre-Prototype into POR Advanced Variant	2	2022	4	2027
Operational Leave Behind TITAN (space) Pre-Prototypes 1 & 2	2	2023	4	2025
Integrate Emerging Capabilities into SGCKs	3	2022	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) DX9 / *National Integration To Tactical Systems*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
DX9: *National Integration To Tactical Systems*	-	4.219	2.796	3.197	-	3.197	3.254	3.278	3.480	3.513	0.000	23.737
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

All funding is in support of the ACTIVE COMPONENT.

A. Mission Description and Budget Item Justification

TENCAP exploits national capabilities to pace evolving threats in support of operations during conflict and competition. TENCAP systems and technologies provide deep sensing to support commanders' situational understanding (patterns of life, threat intentions, etc.), indications & warnings (detection of enemy mobilization and hostile activity), and intelligence support to targeting (order of battle, electronic target folders, target detection, Battle Damage Assessment, etc.). TENCAP systems and technologies support Theater-level fires and effects, TENCAP systems enable integrated Signals Intelligence (SIGINT) / Electronic Warfare (EW) / and Cyberspace operations. TENCAP supports Army modernization priorities including Long Range Precision Fires, Assured Position Navigation and Timing/Space (PNT/S), Future Vertical Lift (FVL), and Air Missile Defense (AMD). In summary, TENCAP is a key enabler to defeating peer competitor Anti-Access / Area-Denial (A2/AD) strategies.

Funding for this project allows the Army's Tactical Exploitation of National Capabilities (TENCAP) office to monitor, synchronize the transition, and integrate new, updated, and emerging National Intelligence Community (IC) technologies, capabilities, and standards into Army Programs of Record during early stages of development when costs are lowest. The project helps the Army to: (1) maintain operational relevance of Army programs and address changes in technology and the threat, (2) ensure Army programs maintain interoperability with and access to the National IC community architecture and systems as they evolve, and (3) advance the Army's ability to conduct analysis and tasking, collection, processing, exploitation, dissemination (TCPED) of intelligence data.

FY 2023 Base funding in the amount of $3.197 million provides integration of capabilities that are validated National IC capabilities and prioritized by the TENCAP General Officer Steering Group (TGOSG) into Army Programs of Record. The funded efforts include system development and integration of National sensors, architectures, and capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Army TNG Integration - Airborne Overhead Cooperative Operations (AOCO) / Theater Net-Centric Geolocation (TNG) ***Description:*** National Intelligence Community (IC) standard for interoperability and use of specific intelligence networked capabilities.	3.150	-	-
Title: TENCAP Radio Frequency Exploitation (TRFE)	1.069	0.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** DX9 / *National Integration To Tactical Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Highly specialized capability software that informs, influences and enhances MULTI-INT sensor systems, by targeting modern digital communications systems employed by near-peer nation state armies. Assists with Battlespace Radio frequency (RF) Characterization for modern communication environments with the intent to synchronize Signal Intelligence (SIGINT), Cyber and Electronic Warfare operations. Utilizes commercial industry components and architectures to minimize hardware costs, risk and maximizes scalability/modularity. ***FY 2022 Plans:*** Integrates the open, government-owned software framework enabling Signal Intelligence (SIGINT), Electronic Warfare and Cyber capabilities into Program of Records (PoR)s. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease reflects movement of TRFE funds in FY23 under National Integration to Tactical Systems to align with TGOSG priorities.			
Title: National Integration to Tactical Systems ***Description:*** National Integration provides for enhancements developed by Army TENCAP's BA 6.4 Project 907 along with the integration and transition of new, updated and emerging National Intelligence Community technologies and capabilities into Program of Records (POR)s. This effort develops and integrates national intelligence community software that informs, influences and enhances MULTI-INT sensor systems, by targeting modern digital communications systems employed by near-peer nation state armies. ***FY 2022 Plans:*** Funds the system development and integration of National sensors, architectures and capabilities into Army programs as directed by the Tactical Exploitation of National Capabilities (TENCAP) General Officers' Steering Group (GOSG), to ensure National Overhead Systems (NOS) directly support Army warfighters during Large Scale Ground Combat Operations. ***FY 2023 Plans:*** Continues system development and integration of National asset capabilities into Army programs as directed by the Tactical Exploitation of National Capabilities (TENCAP) General Officers' Steering Group (GOSG), with system development and integration of antenna capability. FY2023 plans include Integrating the latest specialized capability advances and collected data into the open, government-owned software, and enabling Signal Intelligence (SIGINT), Electronic Warfare, and Cyber capabilities into Programs of Record (POR)s. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	2.296	3.197

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** DX9 / *National Integration To Tactical Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Increase reflects the inclusion of TRFE funds with National Integration to Tactical Systems. The overall increase provides for integration of specialized capability that has been developed and collected in response to evolution of near-peer capabilities.			
Accomplishments/Planned Programs Subtotals	4.219	2.796	3.197

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603766A: *Tactical Electronic Surveillance System - Adv Dev*	182.400	113.365	72.314	-	72.314	64.799	37.048	36.646	37.072	Continuing	Continuing
• OMA - 122011 OMA: *Contractor Logistics Support and Other Weapon Support, OMA 122011*	2.132	-	0.000	-	0.000	-	-	-	-	0.000	2.132
• OMA - 122021 OMA: *Contractor Logistics Support and Other Weapon, OMA 122021 Support*	-	11.360	9.186	-	9.186	11.469	11.513	9.186	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

The 'National Integration to Tactical Systems' funds provide for transition and integration of National IC advanced technologies and prototypes leveraged by the Army's TENCAP program office. The Army TENCAP acquisition strategy is driven by an annual TENCAP General Officer Steering Group (TGOSG), that is co-chaired by the Army G2, Army G8, and the Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology [ASA(ALT)]. The TGOSC includes representatives from the Army G3, Army G6, Army Futures Command Intelligence-Capability Development and Integration Directorate, Army Training and Doctrine Command (TRADOC), and the Program Executive Office for Intelligence, Electronic Warfare and Sensors (PEO IEW&S). The TGOSG reviews, validates, prioritizes, and guides Army TENCAP efforts, according to the Army and Defense strategies. Based on this TGOSG guidance, Army TENCAP invests BA 6.4 RDTE in IC developments during the more cost-effective advanced development phase to ensure Army requirements are met with minimal redundancy with Army investments. Army TENCAP then uses BA 6.5 RDTE to manage the transition of these advanced development efforts through system development and integration into Army Programs of Record (POR). This strategy ensures these leveraged investments remain viable through multiple budget cycles, significantly increasing successful transition to recipient Army PORs. Army TENCAP facilitates the continued access to National IC 'joint' efforts and compatibility with those National standards and software baselines for those Army PORs that benefit from these leveraged National IC technologies. This results in cost savings through cost sharing, and Army participation in collaborative Intelligence. Funds will be used for integration efforts identified and vetted through the Army TENCAP annual TGOSG.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) DX9 / *National Integration To Tactical Systems*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNG Engineers	MIPR	Multiple : Multiple	1.448	0.150	Jan 2021	-		-		-		-	0.000	1.598	-
National Integration Engineers	C/TBD	TBD : TBD	-	-		0.120	Jan 2022	0.150	Jan 2023	-		0.150	0.000	0.270	Continuing
		Subtotal	1.448	0.150		0.120		0.150		-		0.150	0.000	1.868	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNG for Multiple Army PORs	MIPR	Multiple : Multiple	35.910	3.000	Jan 2021	-		-		-		-	0.000	38.910	-
TRFE	MIPR	Classified : Classified	3.427	1.069	Jan 2021	0.462	Jan 2021	0.823	Jan 2023	-		0.823	0.000	5.781	Continuing
National Integration	MIPR	Multiple : Multiple	-	-		1.691	Jan 2022	1.504	Jan 2023	-		1.504	0.000	3.195	-
		Subtotal	39.337	4.069		2.153		2.327		-		2.327	0.000	47.886	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNG Support Costs	Allot	PEO IEW&S/PM SAI : Aberdeen Proving Grounds, MD	1.344	-		-		-		-		-	0.000	1.344	-
National Integration Program Management	Allot	Army TENCAP : Alexandria, VA	-	-		0.373	Jan 2022	0.360	Jan 2023	-		0.360	0.000	0.733	-
		Subtotal	1.344	-		0.373		0.360		-		0.360	0.000	2.077	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) DX9 / *National Integration To Tactical Systems*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TNG Test and Evaluation	MIPR	Multiple : Multiple	0.805	-		-		-		-		-	0.000	0.805	-
TRFE	MIPR	Classified : Classified	0.394	-		-		0.180		-		0.180	0.000	0.574	Continuing
National Integration	MIPR	Multiple : Multiple	-	-		0.150	Jan 2022	0.180	Jan 2023	-		0.180	0.000	0.330	Continuing
		Subtotal	1.199	-		0.150		0.360		-		0.360	0.000	1.709	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	43.328	4.219		2.796		3.197		-		3.197	0.000	53.540	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** DX9 / *National Integration To Tactical Systems*

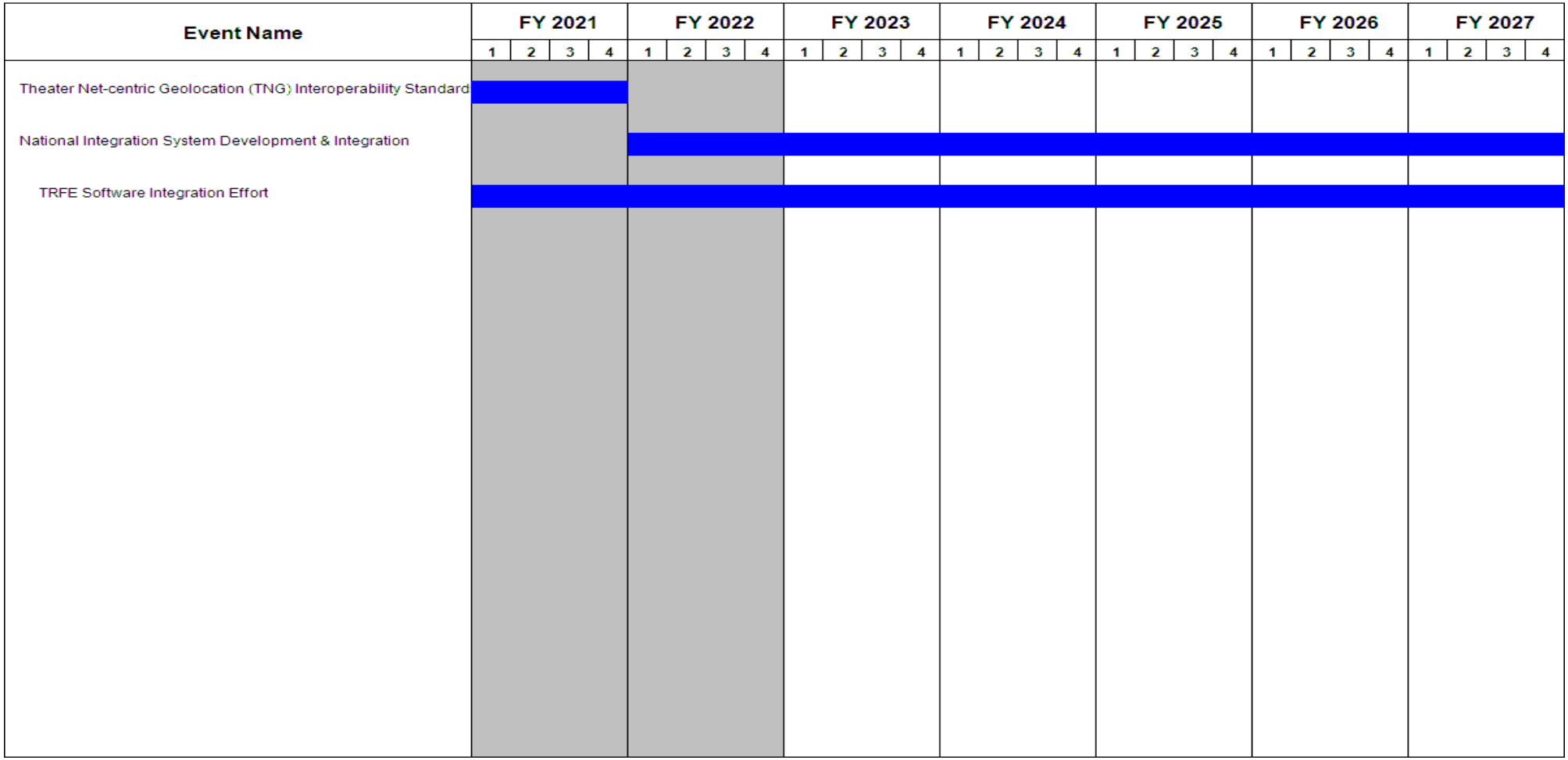


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** DX9 / *National Integration To Tactical Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Theater Net-centric Geolocation (TNG) Interoperability Standards	2	2014	4	2021
National Integration System Development & Integration	1	2022	4	2028
TRFE Software Integration Effort	1	2018	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) EX7 / *Air Vigilance System Development*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
EX7: *Air Vigilance System Development*	-	3.451	4.929	6.776	-	6.776	6.940	7.071	7.074	7.143	0.000	43.384
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

All funding is in support of the ACTIVE COMPONENT.

A. Mission Description and Budget Item Justification

Operational details are classified. The Air Vigilance system is a software-based capability that collects critical intelligence data on emerging threat aerial systems. The collected data provides early warning of enemy operations in restricted airspace to ensure force protection. An Air Vigilance system is comprised of a server unit configured and connected with either a single or multiple sensors.

FY2023 Base funding in the amount of $6.776 million provides for the development and integration of Pre-Planned Product Improvements (P3I) to meet and pace an evolving threat. The P3I consist of system development and integration of the latest software and hardware configurations to gain greater processing power, keep pace with emerging enemy changes, and ensure interoperability between System Capability Drops (CD). These funds also provide for continued development and integration of the CD 4 requirements into two proof-of-concept mobile systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Air Vigilance System Development and Integration	3.451	4.929	6.776
Description: Software and hardware engineering, development and integration efforts.			
FY 2022 Plans: Will provide for software and hardware development and integration to ingest latest collected sensor data into the common baseline and enhance system capabilities to meet newly identified threats and latest Capability Drop requirements.			
FY 2023 Plans: Continues to provide for software development and integration to ingest latest collected sensor data into the common baseline and enhance system capabilities to meet newly identified threats and continues development and integration of the CD 4 requirements into two proof-of-concept mobile systems.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** EX7 / *Air Vigilance System Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Increase funds are for P3I enhancements to software and hardware to continue to pace the threat and development/integration of CD 4 requirements.			
Accomplishments/Planned Programs Subtotals	3.451	4.929	6.776

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• 0603766A: *Tactical Electronic Surveillance System - Adv Dev*	182.400	113.365	72.314	-	72.314	64.799	37.048	36.646	37.072	Continuing	Continuing
• W60001: *AIR VIGILANCE (AV)*	8.160	13.486	5.688	-	5.688	5.835	9.185	9.211	9.207	Continuing	Continuing

Remarks

D. Acquisition Strategy

Air Vigilance (AV) is an Acquisition Category (ACAT) III Automated Information System (AIS) program of record (POR) that started as a Quick Reaction Capability (QRC) developed and fielded cooperatively with the National Intelligence Community (IC) through the efforts and mission of the Army's Tactical Exploitation of National Capabilities (TENCAP) office. In May 2013, the Army Acquisition Executive (AAE) directed that the QRC transition into an Army POR and assigned milestone decision authority to the Army's Program Executive Officer - Intelligence Electronic Warfare and Sensors (PEO IEWS) who oversees the Army TENCAP program. The Army TENCAP office continues to leverage the IC common software development. The relationship ensures the primarily software-based system continues to leverage the IC common software updates, and ensures the latest sensor collects are integrated into the common IC data library. The TENCAP office has completed fielding systems to the approved Basis of Issue Plan (BOIP) and continues to improve existing capability through deployment of new, validated Capability Drop (CD) requirements. The AV POR will continue to evolve to meet future validated CD requirements and maintain its effectiveness against emerging threats.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) EX7 / *Air Vigilance System Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineers and Technical Assistance (SETA)	C/TBD	Peraton : Chantilly, Virginia	1.522	0.550	Mar 2021	0.900	Jan 2022	1.420	Mar 2023	-		1.420	0.000	4.392	Continuing
		Subtotal	1.522	0.550		0.900		1.420		-		1.420	0.000	4.392	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vigilance software and hardware updates and integration	C/TBD	CACI : Sterling, Virginia	6.278	1.900	Mar 2021	3.163	Jan 2022	4.362	Mar 2023	-		4.362	0.000	15.703	Continuing
		Subtotal	6.278	1.900		3.163		4.362		-		4.362	0.000	15.703	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Costs, Travel, Facilities	Allot	Army TENCAP : Alexandria, VA	2.424	0.900	Jan 2021	0.736	Jan 2022	0.814	Mar 2023	-		0.814	0.000	4.874	Continuing
		Subtotal	2.424	0.900		0.736		0.814		-		0.814	0.000	4.874	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vigilance System Testing and Exercises	C/TBD	TBD : TBD	0.463	0.101	Mar 2021	0.130	Jan 2022	0.180	Mar 2023	-		0.180	0.000	0.874	Continuing
		Subtotal	0.463	0.101		0.130		0.180		-		0.180	0.000	0.874	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605766A / *National Capabilities Integration (MIP)*	Project (Number/Name) EX7 / *Air Vigilance System Development*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.687	3.451		4.929		6.776		-		6.776	0.000	25.843	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** EX7 / *Air Vigilance System Development*

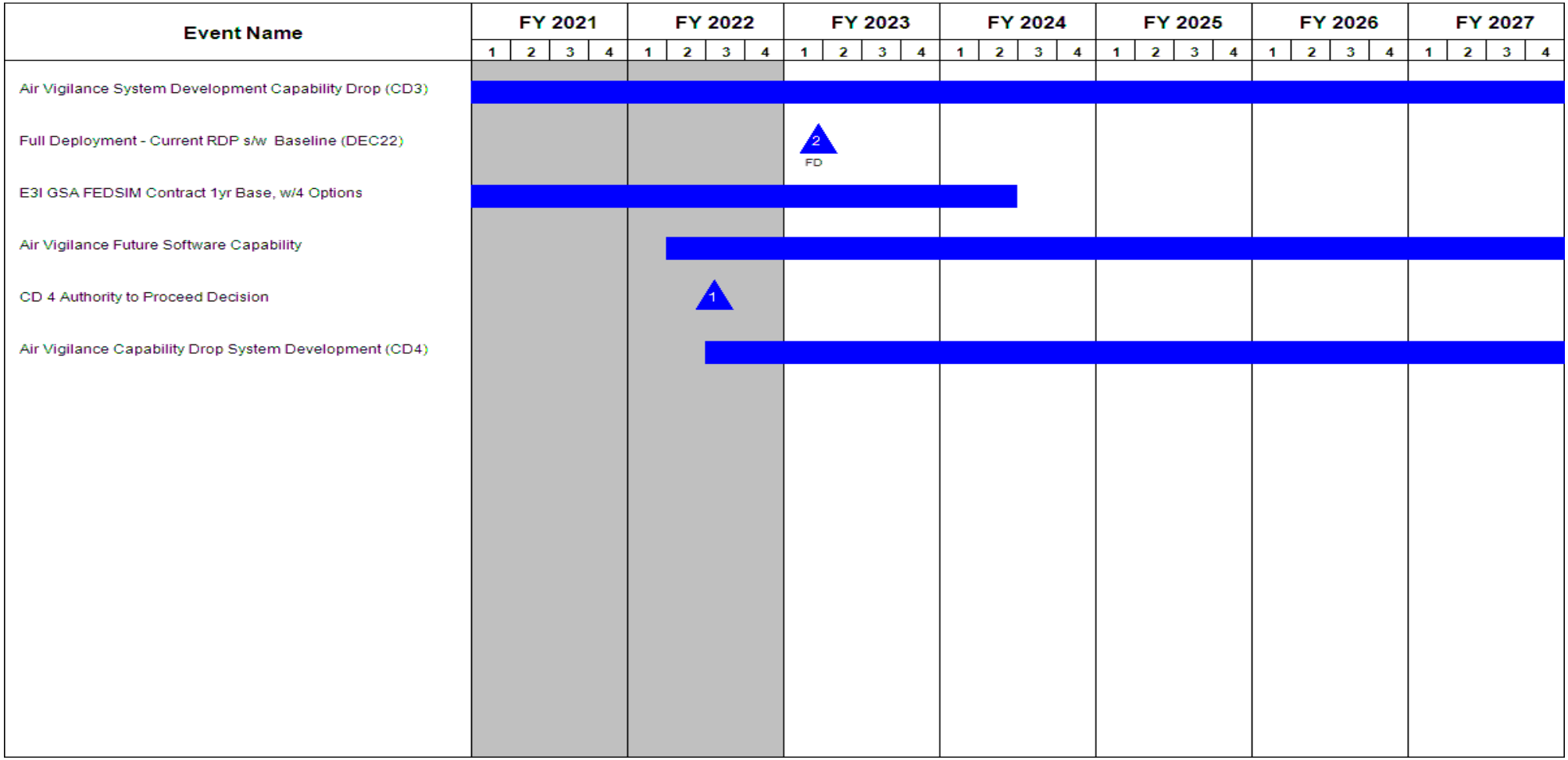


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605766A / *National Capabilities Integration (MIP)*	**Project (Number/Name)** EX7 / *Air Vigilance System Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Air Vigilance System Development Capability Drop (CD3)	2	2016	1	2028
Air Vigilance CD #3 National Assessment Group Test	3	2018	3	2018
Full Deployment - Current RDP s/w Baseline (DEC22)	1	2023	1	2023
TRFE GSA FEDSIM Bridge Contract	2	2018	3	2019
E3I GSA FEDSIM Contract	2	2019	2	2019
E3I GSA FEDSIM Contract 1yr Base, w/4 Options	2	2019	2	2024
Air Vigilance Future Software Capability	2	2022	1	2028
CD 4 Authority to Proceed Decision	3	2022	3	2022
Air Vigilance Capability Drop System Development (CD4)	3	2022	1	2028

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605812A *I Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.500	2.564	9.376	-	9.376	9.562	2.060	2.367	2.391	Continuing	Continuing
VU9: *Joint Light Tactical Vehicle*	-	1.500	2.564	9.376	-	9.376	9.562	2.060	2.367	2.391	Continuing	Continuing

A. Mission Description and Budget Item Justification

The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC). The JLTV is capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; and, minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., among vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized. The JLTV Trailer (JLTV-T) is the companion trailer to the JLTV and safely carries its payload while maintaining the same mobility characteristics of the prime mover. The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV and JLTV-T to be fielded as a system. On November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. The Follow-on JLTV Contract award remains on track to be awarded in Q4 FY 2022. JLTV intends to competitively award the follow-on Contract as a single award five year requirements contract with five one year options.

This program element supports modernization of the JLTV FoV by investigating technology insertions including, but not limited to: predictive logistics, vetronics, Victory Architecture, autonomous operations and other emerging technologies. This program element also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

The FY 2023 budget funds the acquisition of 1 JLTV General Purpose truck and 2 Cab test assets in support of the Follow-on Contract Live Fire testing; and the development and continuation of engineering efforts. Engineering efforts include the continuation of development and integration of Climate Change initiatives and reduced liquid logistics such as anti-idle technology on the JLTV A1/A0, and JLTV Electrification analysis and demonstrations in support of vehicle electrification to determine the propulsion system sizing that would be required to deliver similar/optimal mobility to the current conventional propulsion system; occupant safety and survivability technologies; integration of emerging requirements related to lethality, utility, C5ISR (capability sets) and operational needs.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605812A *I Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)*

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	1.678	2.564	0.000	-	0.000
Current President's Budget	1.500	2.564	9.376	-	9.376
Total Adjustments	-0.178	0.000	9.376	-	9.376
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.178	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	9.376	-	9.376

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Deve lopment Phase (EMD)*	Project (Number/Name) VU9 / *Joint Light Tactical Vehicle*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
VU9: *Joint Light Tactical Vehicle*	-	1.500	2.564	9.376	-	9.376	9.562	2.060	2.367	2.391	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC). The JLTV is capable of performing multiple mission roles and designed to provide protected, sustained, networked mobility for personnel and payloads across the full range of military operations. JLTV objectives include increased protection and performance over the current fleet; and, minimizing ownership costs by maximizing commonality, fuel efficiency, reliability, and maintaining effective competition throughout the life cycle. Commonality of components, maintenance procedures, training, etc., among vehicles is expected to be inherent in FoV solutions across mission variants to minimize total ownership cost. Unique service requirements have been minimized. The JLTV Trailer (JLTV-T) is the companion trailer to the JLTV and safely carries its payload while maintaining the same mobility characteristics of the prime mover. The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV and JLTV-T to be fielded as a system. On November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. The Follow-on JLTV Contract remains on schedule to be awarded in Q4 FY 2022. JLTV intends to competitively award the follow-on Contract as a single award five year requirements contract with five one year options.

This program element supports modernization of the JLTV FoV by investigating technology insertions including, but not limited to: predictive logistics, vetronics, Victory Architecture, autonomous operations and other emerging technologies. This program element also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

The FY 2023 budget funds the acquisition of 1 JLTV General Purpose truck and 2 Cab test assets in support of the Follow-on Contract Live Fire testing; and the development and continuation of engineering efforts. Engineering efforts include the continuation of development and integration of Climate Change initiatives and reduced liquid logistics such as anti-idle technology on the JLTV A1/A0, and JLTV Electrification analysis and demonstrations in support of vehicle electrification to determine the propulsion system sizing that would be required to deliver similar/optimal mobility to the current conventional propulsion system; occupant safety and survivability technologies; integration of emerging requirements related to lethality, utility, C5ISR (capability sets) and operational needs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Evaluation and Assessment of current and future engineering efforts	1.050	1.480	1.150
Description: Funding is provided for the support of JLTV evaluation and assessment of current and future engineering efforts.			
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Deve lopment Phase (EMD)*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Development and continuation of engineering efforts including: Initiation of design, integration and testing for Integrated Tactical Network (ITN) rapid prototyping to support emerging characterization events; JLTV Utility Multipurpose Protected Shelter (JUMPS) to support emerging requirements such as Protected Ambulance, Protected Troop Transport, and Protected Command and Control; and Close Combat Weapons Carrier (CCWC) enhancements ***FY 2023 Plans:*** Development and continuation of engineering efforts including: development of occupant safety and survivability technologies; integration of emerging requirements related to lethality, utility, C5ISR (capability sets) and operational needs. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Decrease in funding from FY22 to FY23 due to reduction of JPO direct funding for Next Generation Powertrain efforts that are now being performed through Rapid Capabilities and Critical Technologies Office (RCCTO).			
Title: Test Assets ***Description:*** Procurement of test assets. ***FY 2023 Plans:*** Procurement of 1 JLTV General Purpose truck and 2 Cab test assets in support of Follow-on Contract Live Fire testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to requirement beginning in FY23.	-	-	0.577
Title: Follow-on Contract (FOC) contractor support for Test Assets ***Description:*** Follow-on Contract (FOC) contractor support for Test Assets. ***FY 2023 Plans:*** Contractor FOC support. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to requirement beginning in FY23.	-	-	0.083
Title: Evaluation and assessment of current and future Climate Change initiatives ***Description:*** Funding is provided for the support of JLTV evaluation and assessment of current and future Climate Change initiatives ***FY 2022 Plans:***	0.450	0.990	7.566

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Deve lopment Phase (EMD)*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Continuation of Climate Change initiatives and reduced liquid logistics such as anti-idle technology on the JLTV A1/A0. ***FY 2023 Plans:*** Development and continuation of engineering efforts including: Continuation of JLTV Electrification analysis and demonstrations in support of vehicle electrification to determine the propulsion system sizing that would be required to deliver similar/optimal mobility to the current conventional propulsion system; development and integration of Climate Change initiatives and reduced liquid logistics such as anti-idle technology on the JLTV A1/A0. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Increase due to acceleration of Climate Change initiatives.			
Title: SBIR/STTR Transfer ***Description:*** Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) ***FY 2022 Plans:*** SBIR/STTR Transfer ***FY 2022 to FY 2023 Increase/Decrease Statement:*** SBIR/STTR Transfer	-	0.094	-
Accomplishments/Planned Programs Subtotals	1.500	2.564	9.376

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• D15610: *JOINT LIGHT TACTICAL VEHICLE FAMILY OF VEHICLES*	884.414	574.562	703.110	-	703.110	797.870	803.102	790.535	790.729	Continuing	Continuing
• D15615: *JOINT LIGHT TACTICAL VEHICLE (JLTV)*	836.623	496.122	631.264	-	631.264	744.325	753.923	748.188	748.451	Continuing	Continuing
• D15618: *JOINT LIGHT TACTICAL VEHICLE TRAILER (JLTV-T)*	47.791	78.440	71.846	-	71.846	53.545	49.179	42.347	42.278	Continuing	Continuing
• D00929: *JOINT LIGHT TACTICAL VEHICLE (JTLV) MOD-IN-SERVICE*	-	7.190	8.084	-	8.084	8.221	28.759	49.480	69.623	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• MC - 5095: *JOINT LIGHT TACTICAL VEHICLE (JLTV) - USMC*	368.675	322.013	222.257	-	222.257	182.222	281.026	329.440	531.039	Continuing	Continuing
• MC - 0605813M: *JOINT LIGHT TACTICAL VEHICLE (JLTV) - USMC*	2.541	2.005	2.856	-	2.856	2.574	2.485	2.289	2.322	Continuing	Continuing

Remarks

JLTV is a Joint Program with the United States Marine Corps (USMC)

D. Acquisition Strategy

The JLTV Family of Vehicles (FoV), to include a companion trailer, is a United States Army (USA) acquisition lead, joint program with the U.S. Marine Corps (USMC).

The JLTV Program entered the Production and Deployment Phase with the Acquisition Decision Memorandum authorization on 25 August 2015. With Milestone C approval, the Low Rate Initial Production (LRIP) fixed price contract was awarded to Oshkosh Defense LLC on 25 August 2015. This contract consisted of a three year LRIP period with options for five additional years of Full Rate Production (FRP) deliveries. JPO JLTV procured the Technical Data Package (TDP) with appropriate data rights to allow for possible future competition for production vehicles and spares. Current contract options may be exercised through 30 November 2023. The Follow-on JLTV Contract is scheduled to be awarded in Q1 FY 2023. JLTV intends to competitively award the Follow-on Contract as a single award five year requirements contract with five one year options.

A split procurement will occur between the existing Oshkosh Contract and the new competitively awarded Contract based on the approved acquisition strategy. Program achieved a successful FRP decision in May 2019. The FRP Acquisition Decision Memorandum was signed in June 2019.

The trailer requirement as defined in the Capability Production Document (CPD), dated 21 November 2014 was validated on 7 June 2019 by the Army and required the JLTV-T to be fielded to units receiving JLTV trucks with a documented trailer requirement. In November 2019, Army Futures Command validated the JLTV-T Army Procurement Objective (APO) of 18,224. In June 2020, the 1st JLTV Trailer Production Contract was awarded to Oshkosh for 1,410 Army JLTV-Ts.

The JLTV program will continually monitor emerging technologies and capabilities through its partnerships with U.S. Army and Marine Corps science and technology organizations as well as through industry market research and partnerships. The JLTV program will look for opportunities to implement increased capabilities throughout the systems Life Cycle. Engineering initiatives will directly support the Army Climate Change Strategy and the operational needs of the Soldier. The anticipated outcome of these initiatives are fully validated Engineering Change Proposals (ECPs) that can be applied to the current and future JLTV fleet.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Light Tactical Vehicles (JLTV) Contract Service Support	SS/CPFF	Booz-Allen Hamilton, : McLean, VA	10.191	-		-		-		-		-	0.000	10.191	-
JLTV Contract Service Support for Cost Analysis for JLTV CARD	SS/CPFF	Camber Corporation, : Huntsville, AL	0.591	-		-		-		-		-	0.000	0.591	-
JLTV Service Support	MIPR	US Army Combined Arms Support Commands - CASCOM, : Ft. Lee, VA	0.200	-		-		-		-		-	0.000	0.200	-
SBIR/STTR Transfer	Various	Various : Various	-	-		0.094		-		-		-	0.000	0.094	-
		Subtotal	10.982	-		0.094		-		-		-	0.000	11.076	N/A

Remarks

Funding for Management Services has shifted from RDT&E to Procurement and Operations and Maintenance - Army(OMA).

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JLTV Live Fire Test Support	C/FFP	Oshkosh Corporation : Oshkosh, WI	19.091	-		-		-		-		-	0.000	19.091	-
Evaluation and Assessment of current and future engineering efforts	C/Various	Various : Various	14.595	1.050	Jan 2021	1.480	Jan 2022	1.150	Jan 2023	-		1.150	Continuing	Continuing	Continuing
Test Assets	C/TBD	TBD : TBD	-	-		-		0.577	Oct 2022	-		0.577	0.000	0.577	-
Follow-on Contract (FOC) support	C/TBD	TBD : TBD	-	-		-		0.083	Oct 2022	-		0.083	0.000	0.083	-
Climate Change initiatives	C/Various	Various : Various	-	0.450	Jan 2021	0.990		7.566	Oct 2022	-		7.566	0.000	9.006	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)*	Project (Number/Name) VU9 / *Joint Light Tactical Vehicle*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	33.686	1.500		2.470		9.376		-		9.376	Continuing	Continuing	N/A

Remarks

FY 2023 supports the procurement of 1 JLTV General Purpose truck, 2 Cabs, and contractor support for the competitive Follow-on Contract live fire and survivability test. FY 2023 also supports acceleration of Climate Change initiatives.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Light Tactical Vehicles (JLTV) Program Management Support	Various	TACOM Life Cycle Management Command (LCMC), : Harrison Township, MI	31.919	-		-		-		-		-	0.000	31.919	-
GFE Management / GFE / Integration	MIPR	Various : TBD	19.436	-		-		-		-		-	0.000	19.436	-
JLTV EMD/LRIP phase.	MIPR	Tank-Automotive Research, Development, and Engineering Center - TARDEC : Warren, MI	14.245	-		-		-		-		-	0.000	14.245	-
JLTV Prototype EMD/LRIP - Budget	MIPR	TACOM Life Cycle Management Command (LCMC), : Warren, MI	12.383	-		-		-		-		-	0.000	12.383	-
		Subtotal	77.983	-		-		-		-		-	0.000	77.983	N/A

Remarks

Funding for Support Costs has shifted from RDT&E to Procurement and Operations and Maintenance - Army(OMA).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Deve lopment Phase (EMD)*	Project (Number/Name) VU9 / *Joint Light Tactical Vehicle*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Complete Engineering and Manufacturing Development (EMD) Test - Limited User Test (LUT)	MIPR	Army Evaluation Center (AEC) : Aberdeen Proving Ground, MD	41.342	-		-		-		-		-	0.000	41.342	-
Development Testing, MOT&E and Live Fire T&E - Log demo, and corrosion.	Various	TBD : Various	42.994	-		-		-		-		-	0.000	42.994	-
FY 2018 Rescission	TBD	N/A : N/A	5.677	-		-		-		-		-	0.000	5.677	-
		Subtotal	90.013	-		-		-		-		-	0.000	90.013	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	212.664	1.500		2.564		9.376		-		9.376	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Deve lopment Phase (EMD)*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle*

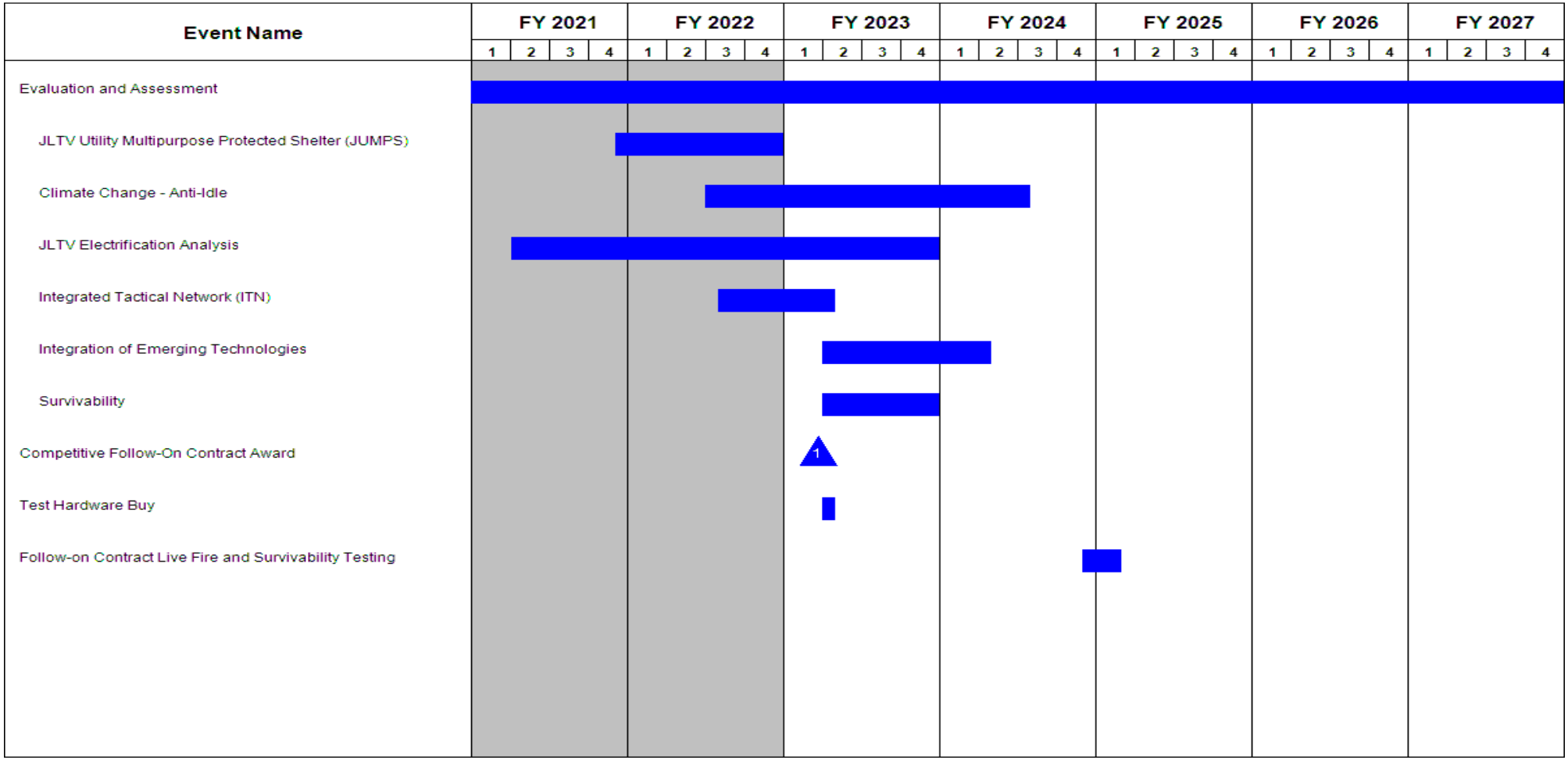


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605812A / *Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Deve lopment Phase (EMD)*	**Project (Number/Name)** VU9 / *Joint Light Tactical Vehicle*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Evaluation and Assessment	3	2018	4	2027
JLTV Utility Multipurpose Protected Shelter (JUMPS)	4	2021	4	2022
Climate Change - Anti-Idle	3	2022	3	2024
JLTV Electrification Analysis	2	2021	4	2023
Integrated Tactical Network (ITN)	3	2022	2	2023
Integration of Emerging Technologies	2	2023	2	2024
Survivability	2	2023	4	2023
Competitive Follow-On Contract Award	1	2023	1	2023
Test Hardware Buy	2	2023	2	2023
Follow-on Contract Live Fire and Survivability Testing	4	2024	1	2025

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605830A *I Aviation Ground Support Equipment*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.413	1.201	2.959	-	2.959	1.192	1.022	1.023	1.033	0.000	9.843
EE5: *Aviation Ground Support Equipment*	-	1.413	1.201	2.959	-	2.959	1.192	1.022	1.023	1.033	0.000	9.843

A. Mission Description and Budget Item Justification

Aviation Ground Support Equipment (AGSE) Product Directorate conducts development, testing and acquisition to enhance the functionality of enduring fleet and future aircraft maintenance equipment. This will be accomplished by identifying more effective aircraft maintenance equipment, validating new maintenance concepts, improving machine interfaces, updating aircraft maintenance processes, and developing improved diagnostic technologies which will reduce Operation and Support costs. This program provides for the development of rapid battle repair procedures, tools, ground handling, and test equipment to speed the return of aircraft to a fully mission capable status. Included in this program are: Aviation Ground Power Unit (AGPU 1.0) and its next generation systems (AGPU 1.1), Aircraft Cleaning and Deicing System (ACDS), Flexible Engine Diagnostic Systems (FEDS), Aircraft Jacks, Aviation Central Tool Management (ACTM), Self-propelled Crane Aircraft Maintenance and Positioning Increment II (SCAMP II) - (Expeditionary Variant) and development of support equipment required for maintenance of the enduring fleet and Future Vertical Lift (FVL) aircraft.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	1.413	1.201	0.000	-	0.000
Current President's Budget	1.413	1.201	2.959	-	2.959
Total Adjustments	0.000	0.000	2.959	-	2.959
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	2.959	-	2.959

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605830A / *Aviation Ground Support Equipment*	Project (Number/Name) EE5 / *Aviation Ground Support Equipment*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
EE5: *Aviation Ground Support Equipment*	-	1.413	1.201	2.959	-	2.959	1.192	1.022	1.023	1.033	0.000	9.843
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Aviation Ground Support Equipment (AGSE) Product Directorate conducts development, testing and acquisition to enhance the functionality of enduring fleet and future aircraft maintenance equipment. This will be accomplished by identifying more effective aircraft maintenance equipment, validating new maintenance concepts, improving machine interfaces, updating aircraft maintenance processes, and developing improved diagnostic technologies which will reduce Operation and Support costs. This program provides for the development of rapid battle repair procedures, tools, ground handling, and test equipment to speed the return of aircraft to a fully mission capable status. Included in this program are: Aviation Ground Power Unit (AGPU 1.0) and its next generation systems (AGPU 1.1), Aircraft Cleaning and Deicing System (ACDS), Flexible Engine Diagnostic Systems (FEDS), Aircraft Jacks, Aviation Central Tool Management (ACTM), Self-propelled Crane Aircraft Maintenance and Positioning Increment II (SCAMP II) - (Expeditionary Variant) and development of support equipment required for maintenance of the enduring fleet and Future Vertical Lift (FVL) aircraft.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Aviation Ground Power Unit Next Generation (AGPU 1.1) ***Description:*** The AGPU 1.1 provides external hydraulic, pneumatic, and AC/DC electrical power to meet enduring and future Army aircraft servicing requirements. ***FY 2022 Plans:*** Conduct performance verification testing and environmental testing of the AGPU 1.1 Next Gen candidates. ***FY 2023 Plans:*** Continue development and testing of AGPU 1.1 (Next Generation system). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY23 increase for GPU 1.1 Next Generation system to complete developmental efforts.	1.413	1.158	2.959
Title: FY22 SBIR/STTR Transfer ***FY 2022 Plans:*** SBIR/STTR amount in accordance with Title 15 USC 638 ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	0.043	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
SBIR/STTR amount in accordance with Title 15 USC 638			
Accomplishments/Planned Programs Subtotals	1.413	1.201	2.959

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• AZ3520: *AVIATION GROUND SUPPORT EQUIPMENT*	17.584	13.561	20.823	-	20.823	16.317	13.110	16.287	16.223	0.000	113.905

Remarks

D. Acquisition Strategy

This project is an aggregate of Aviation Ground Support Equipment (AGSE) related products. While the detailed acquisition strategy varies from program to program, the general strategy for each individual program is to complete the development effort through Government tests (developmental and operational). Program documentation for each milestone decision is prepared, as appropriate, concurrently with the development effort.

AGSE will assess two vendor solutions to determine the best down select candidate for the AGPU 1.1 system. Aligned with the transition to APA funding in FY23, a follow-on production contract will be awarded to procure the selected AGPU 1.1 solution.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0605830A / *Aviation Ground Support Equipment*	Project (Number/Name) EE5 / *Aviation Ground Support Equipment*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.043	Apr 2022	-		-		-	0.000	0.043	-
		Subtotal	-	-		0.043		-		-		-	0.000	0.043	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCAMP II, Expeditionary Variant	Various	AMCOM, RSA; CCDC, RSA : Redstone Arsenal, AL	8.288	-		-		-		-		-	0.000	8.288	-
AGPU 1.1	IA	RTC : Redstone Arsenal, AL	-	1.413	Apr 2021	1.158	Jun 2022	1.555	Apr 2023	-		1.555	0.000	4.126	-
AGPU 1.1	Various	CCDC AvMC : Redstone Arsenal, AL	-	-		-		1.404	Apr 2023	-		1.404	0.000	1.404	-
		Subtotal	8.288	1.413		1.158		2.959		-		2.959	0.000	13.818	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.288	1.413		1.201		2.959		-		2.959	0.000	13.861	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

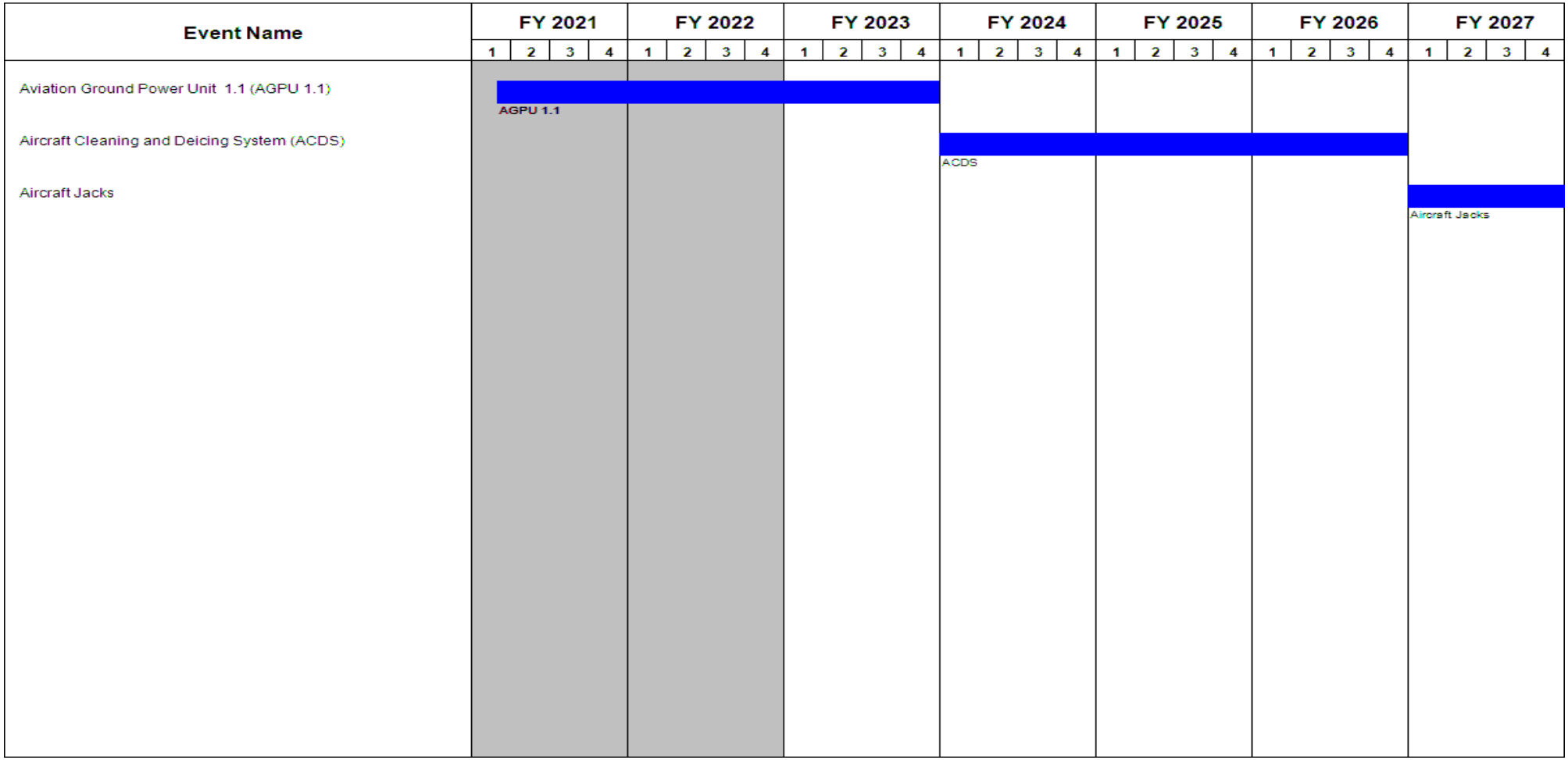


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0605830A / *Aviation Ground Support Equipment*	**Project (Number/Name)** EE5 / *Aviation Ground Support Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Aviation Ground Power Unit 1.1 (AGPU 1.1)	1	2021	4	2023
Aircraft Cleaning and Deicing System (ACDS)	1	2024	4	2026
Aircraft Jacks	1	2027	4	2028

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	3.451	3.362	3.761	-	3.761	3.862	3.900	3.939	3.978	Continuing	Continuing
RH5: *TROJAN - RH12*	-	3.451	3.362	3.761	-	3.761	3.862	3.900	3.939	3.978	Continuing	Continuing

A. Mission Description and Budget Item Justification

TROJAN research and development supports TROJAN Next Generation (TROJAN NexGEN), formerly TROJAN Classic XXI (TCXXI), future capabilities to fulfill the Army's need for worldwide, deployable, remotable, intelligence, surveillance and reconnaissance support that can dynamically execute operations from sanctuary-based to deployed assets in theater. In support of Army Modernization and Army Force Generation, TROJAN NexGEN will provide soldiers with a real-world, hands-on, live and near-real time Signals Intelligence (SIGINT) training environment sustaining, maintaining and enhancing their military occupational specialty proficiencies and specific target expertise. This operational readiness training will fulfill the Army's larger intelligence training requirement via a secure, collaborative architecture.

A key factor for future force success is the ability to collect, process, and use information about an adversary while preventing similar information from being disclosed. TROJAN NexGEN is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, and electronic reconnaissance support to U.S. forces throughout the world. TROJAN NexGEN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. Engineers test and evaluate new digital intelligence collection, processing and dissemination technology using the fielded TROJAN NexGEN systems prior to the acquisition of those technologies. As part of the objective intelligence architecture, these capabilities will enable processing and dissemination of real-time intelligence data from various sources to form the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that TROJAN NexGEN keeps pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threat.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	3.451	3.362	0.000	-	0.000
Current President's Budget	3.451	3.362	3.761	-	3.761
Total Adjustments	0.000	0.000	3.761	-	3.761
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	3.761	-	3.761

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0303032A *I TROJAN - RH12*

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0303032A / *TROJAN - RH12*	Project (Number/Name) RH5 / *TROJAN - RH12*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
RH5: *TROJAN - RH12*	-	3.451	3.362	3.761	-	3.761	3.862	3.900	3.939	3.978	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

TROJAN research and development supports TROJAN Next Generation (TROJAN NexGEN), formerly TROJAN Classic XXI (TCXXI), future capabilities to fulfill the Army's need for worldwide, deployable, remotable, intelligence, surveillance and reconnaissance support that can dynamically execute operations from sanctuary-based to deployed assets in theater. In support of Army Modernization and Army Force Generation, TROJAN NexGEN will provide soldiers with a real-world, hands-on, live and near-real time SIGINT training environment sustaining, maintaining and enhancing their military occupational specialty proficiencies and specific target expertise. This operational readiness training will fulfill the Army's larger intelligence training requirement via a secure, collaborative architecture.

A key factor for future force success is the ability to collect, process, and use information about an adversary while preventing similar information from being disclosed. TROJAN NexGEN is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure communications to include voice, data, and electronic reconnaissance support to U.S. forces throughout the world. TROJAN NexGEN operations may be easily tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, analysis and reporting systems. Engineers test and evaluate new digital intelligence collection, processing and dissemination technology using the fielded TROJAN NexGEN systems prior to the acquisition of those technologies. As part of the objective intelligence architecture, these capabilities will enable processing and dissemination of real-time intelligence data from various sources to form the intelligence needed to issue orders inside the threat decision cycle. To that end, it is imperative that TROJAN NexGEN keeps pace with digitization initiatives in order to respond aggressively to the emerging intelligence communication threat.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Integrate Direction Finding and geo-location	1.200	1.188	1.200
Description: Integrate Direction Finding (DF) and geolocation (GL) technologies into TROJAN Remote Receiving Groups. ***FY 2022 Plans:*** Will continuously adapt/improve the latest Direction Finding (DF) and geolocation technologies for integration into TROJAN NexGEN systems in accordance with Joint Interface Control Document (JICD) 4.2., and JICD 4.2 ELINT (JEL). Will utilize field based risk reduction exercises to test and evaluate integrated technologies of the overall TROJAN Intelligence, Surveillance, and Reconnaissance (ISR) Enterprise. Will continue to research and test for the integration of Electronics Intelligence (ELINT) capabilities. Will resource labor for one MAT DEV technologist, two MAT DEV software engineers and two MAT DEV HW engineers will be accounted for in the Integrate Direction Finding (DF) and geolocation (GL) project. ***FY 2023 Plans:*** Will continuously adapt/improve the latest Direction Finding (DF) and geolocation technologies for integration into TROJAN NexGEN systems in accordance with Joint Interface Control Document (JICD) 4.2., and JICD 4.2 ELINT (JEL). Will utilize field			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
based risk reduction exercises to test and evaluate integrated technologies of the overall TROJAN Intelligence, Surveillance, and Reconnaissance (ISR) Enterprise. Will continue to research and test for the integration of Electronics Intelligence (ELINT) capabilities. Will resource labor for one MAT DEV technologist, two MAT DEV software engineers and two MAT DEV HW engineers will be accounted for in the Integrate Direction Finding (DF) and geolocation (GL) project. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding changes reflects planned lifecycle of this effort.			
Title: Enable assured communications for the TROJAN Network architecture (formerly Improve security of the TROJAN Network architecture). ***Description:*** Acquire and apply multi-bandwidth compression algorithm technology to maximize TROJAN intelligence network throughput. ***FY 2022 Plans:*** Will transition Government off the shelf (GOTS) / Commercial of the shelf (COTS) solutions enabling communication in an anti-access/area denial environment to TROJAN production systems. Will continue to research, evaluate, integrate and test with technologies to enable redundant communications paths and anti-jam technologies based current threats. ***FY 2023 Plans:*** Ongoing effort of transitioning Government off the shelf (GOTS) / Commercial of the shelf (COTS) solutions enabling communication in an anti-access/area denial environment to TROJAN production systems. Will continue to research, evaluate, integrate and test with technologies to enable redundant communications paths and anti-jam technologies based current threats. This effort nears completion in FY23 with ongoing work in the outyears. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Due to this effort ramping down, the need for funds decreases in FY23 and the outyears.	0.751	0.500	0.300
Title: Integrate and test specialized hardware/software ***Description:*** Integrate and test specialized hardware/software for classified pre-processing of new signals of interest utilizing enhanced signal processing algorithms. Resource development of GLAIVE software (SW). Integrated several new National Security Agency (NSA) SW packages. ***FY 2022 Plans:*** Will continue integration and testing of specialized hardware/software for classified pre-processing and detection of new signals of interest. Will continue to resource development, integration and test of GOTS/COTS software. Will continue efforts to develop	0.500	0.704	1.161

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
TROJAN Intelligence Surveillance Reconnaissance enterprise. Will continue efforts to integrate JICD 4.2 across all platforms. Will continue efforts to integrate C4ISR Modular Open Suite of Standards (CMOSS). ***FY 2023 Plans:*** Will continue integration and testing of specialized hardware/software for classified pre-processing and detection of new signals of interest. Will continue to resource development, integration and test of GOTS/COTS software. Will continue efforts to develop TROJAN Intelligence Surveillance Reconnaissance enterprise. Will continue efforts to integrate JICD 4.2 across all platforms. Migration of NexGEN Family of system capabilities from rack based servers and receivers to a C5ISR/EW Modular Open-Source Suite of Standards (CMOSS) configuration to reduce system SWaP. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Due to the need to rapidly integrate program capabilities, the level of effort has increased.			
Title: Research and testing of receivers ***Description:*** Research and testing of receiver packages for fixed and transportable TROJAN systems to acquire non-standard modulations using Digital System Processing (DSP) and Software Defined Radio (SDR) technologies. ***FY 2022 Plans:*** Will continue research and testing of receiver packages for fixed and transportable TROJAN systems to detect and process non-standard modulations using DSP and SDRs. Will integrate receiver packages to enable additional and wideband frequency ranges for COTS/GOTS Software Defined Radios. Will utilize COTS/GOTS hardware and software frameworks to enable multiple SDRs to cooperate on a common backplane. ***FY 2023 Plans:*** Will continue research and testing of receiver packages for fixed and transportable TROJAN systems to detect and process non-standard modulations using DSP and SDRs. Will integrate receiver packages to enable additional and wideband frequency ranges for COTS/GOTS Software Defined Radios. Will continue to utilize COTS/GOTS hardware and software frameworks to enable multiple SDRs to cooperate on a common backplane; which also includes DSP processing framework (Photon), receiver hardware resource manager, and single user interface application. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Due to COTS/GOTS hardware/Software framework changes, the level of effort has increased.	1.000	0.970	1.100
Accomplishments/Planned Programs Subtotals	3.451	3.362	3.761

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• BA0326: *TROJAN*	19.359	30.828	20.562	-	20.562	16.296	16.466	16.680	16.840	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Acquisition Strategy for the TROJAN NexGEN Systems supported by TROJAN RDT&E is to adapt and leverage from Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) products. Additionally, the Acquisition Strategy leverages off of development by DoD and other Government agencies to the greatest extent possible. TROJAN RDT&E is used to fund the development of enhancing these technologies to meet specific user requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0303032A / *TROJAN - RH12*	Project (Number/Name) RH5 / *TROJAN - RH12*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Labor Costs MAT DEV HW/SW Engineers	Various	CERDEC I2WD, APG, MD : MD	6.662	-		-		-		-		-	0.000	6.662	-
		Subtotal	6.662	-		-		-		-		-	0.000	6.662	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrate Direction Finding and geo-location	Various	APG : MD	6.974	1.200	Oct 2020	1.188	Oct 2021	1.200	Oct 2022	-		1.200	Continuing	Continuing	-
Enable assured communications for the TROJAN Network Architecture	Various	APG : MD	7.191	0.751	Oct 2020	0.500	Oct 2021	0.300	Oct 2022	-		0.300	Continuing	Continuing	-
Research and testing of Receivers	Various	APG : MD	2.780	1.000	Oct 2020	0.970	Oct 2021	1.100	Oct 2022	-		1.100	Continuing	Continuing	-
Develop Satellite Communications (SATCOM) Dishes and transceivers	Various	APG : MD	3.644	-		-		-		-		-	0.000	3.644	-
Specialized Software Enhancements	Various	APG : MD	0.998	-		-		-		-		-	0.000	0.998	-
Develop Hardware/ Software Interface	Various	APG : MD	0.445	-		-		-		-		-	0.000	0.445	-
		Subtotal	22.032	2.951		2.658		2.600		-		2.600	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integration and Testing of Hardware/Software	Various	APG : MD	8.141	0.500	Oct 2020	0.704	Oct 2021	1.161	Oct 2022	-		1.161	0.000	10.506	Continuing
		Subtotal	8.141	0.500		0.704		1.161		-		1.161	0.000	10.506	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0303032A / *TROJAN - RH12*	Project (Number/Name) RH5 / *TROJAN - RH12*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.835	3.451		3.362		3.761		-		3.761	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12*

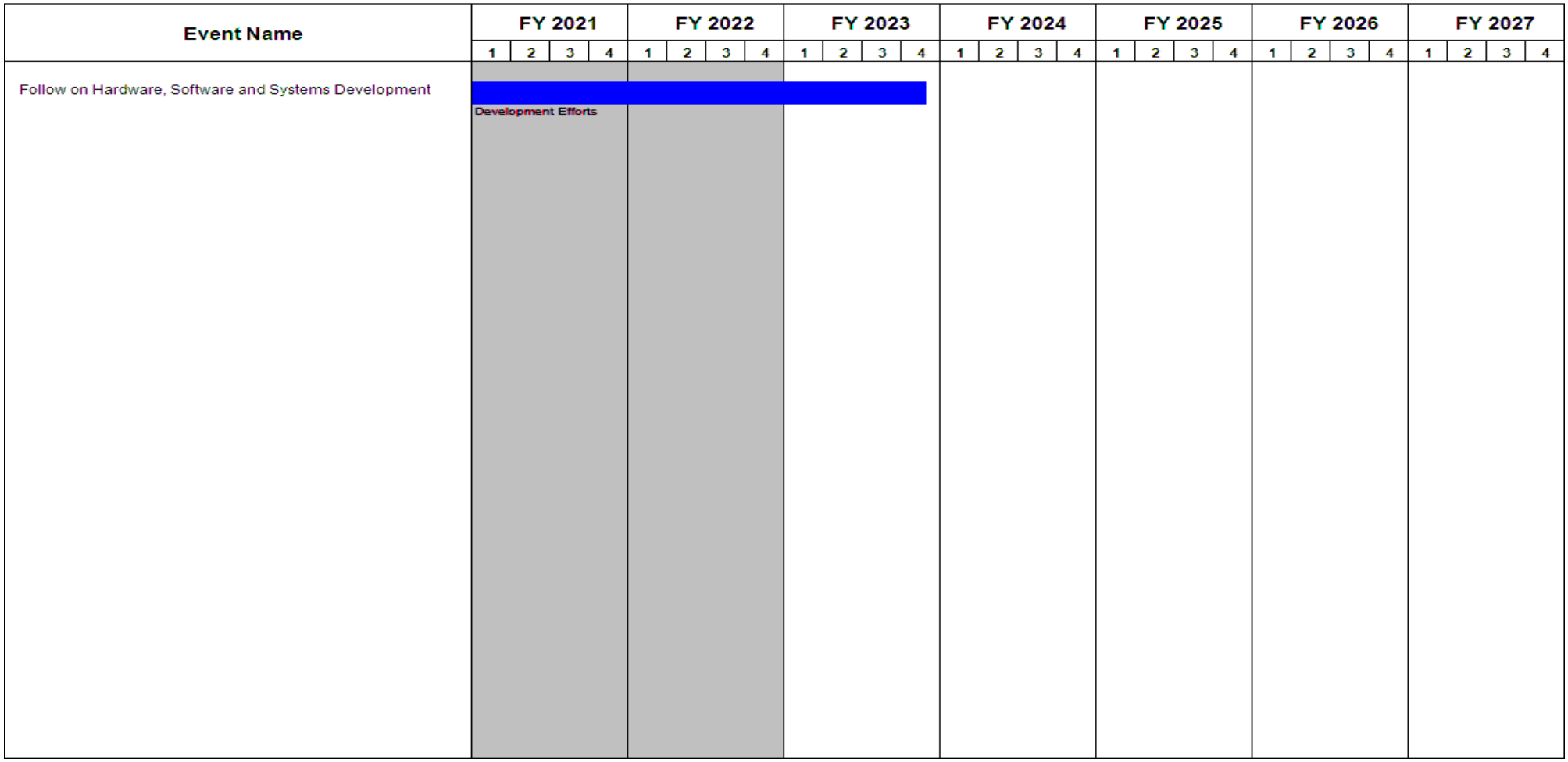


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0303032A / *TROJAN - RH12*	**Project (Number/Name)** RH5 / *TROJAN - RH12*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Hardware, Software and Systems Development	1	2014	4	2018
Follow on Hardware, Software and Systems Development	1	2019	4	2023

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0303667A *I Citizen Broadband Radio System*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.900	-	-	-	-	0.000	0.000	0.000	0.000	0.000	0.900
CR1: *Spectrum Sensing and Analysis for CBRS*	-	0.900	-	-	-	-	-	-	-	-	0.000	0.900

A. Mission Description and Budget Item Justification

In accordance with 47 USC 928 and the Commercial Spectrum Enhancement Act (CSEA) Title, P.L. 108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the cost associated with relocating spectrum dependent systems from spectrum bands which were auctioned for commercial purposes. The activities meet the CSEA and SRF requirements for funding to support spectrum relocation and sharing of the Citizen Broadband Radio System (CBRS) and the Americas Mid-band Initiative Team (AMBIT).

Department of Defense (DoD) costs associated with transition activities to ensure protection of incumbent spectrum dependent systems and military operations functioning within a given auctioned electromagnetic spectrum (EMS) band. Activities focus on ecosystem validations, environmental assessments, and continued industry engagement to refine the indefinite sharing infrastructure.

The DoD POST-AUCTION 3550-3650 MHz Transition Plan focuses on the AN/TPQ-53 radar and adjacent band operations. In order to ensure that AN/TPQ-53 radar can function free from interference, Army will conduct radio frequency (RF) monitoring of the electromagnetic environment (EME) generated by the CBRS deployment at various locations where the AN/TPQ-53 radar operates within the Continental United States (CONUS). RF monitoring will enable the assessment of interference with the AN/TPQ-53 potentially caused by the CBRS. The Army plans to procure RF monitoring equipment, draft test plans, and assemble an engineering team to conduct measurements for various locations where the AN/TPQ-53 operates. The monitoring efforts will include test reports analyzing and quantizing findings from the measured data. The engineering and sharing support component of the Army Transition Plan will provide the Army with qualified personnel for working group coverage and engineering management needed to implement the DoD sharing strategy, in coordination with industry, the National Telecommunications Administration (NTIA), and the Federal Communications Commission (FCC). DoD's implementation of an indefinite sharing arrangement with new uses and users in the 3550-3650 MHz band inevitably involves the sharing costs as identified in 47 USC 923(g)(3). To ensure comparable operations and capabilities, DoD is and will continue to incur costs to mitigate against harmful interference to its protected operations. The SRF is funded with proceeds from FCC conducted auctions of spectrum licenses. SRF funds have an indefinite obligation period and remain available until expended (X Year). The DoD Chief Information Officer (CIO) executes oversight of DoD spectrum relocation and sharing efforts.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army					Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0303667A / *Citizen Broadband Radio System*		
B. Program Change Summary ($ in Millions)	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.900	0.000	0.000	-	0.000
Total Adjustments	0.900	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.900	-			
• SBIR/STTR Transfer	-	-			

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0303767A *I AMBIT - Pre-Auctioned SRF*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	9.785	-	-	-	-	0.000	0.000	0.000	0.000	0.000	9.785
XRA: *AMBIT RDTE Pre-auction Transition Plan*	-	9.785	-	-	-	-	-	-	-	-	0.000	9.785

A. Mission Description and Budget Item Justification

In accordance with 47 USC 928 and the Commercial Spectrum Enhancement Act (CSEA) Title, P.L. 108-494, dated December 23, 2004, established the Spectrum Relocation Fund (SRF) to provide Federal agencies a mechanism to recover the cost associated with relocating spectrum dependent systems from spectrum bands which were auctioned for commercial purposes. The activities described meet the CSEA and SRF requirements for funding to support spectrum relocation and the Americas Mid-band Initiative Team (AMBIT).

The Department of Defense (DoD) PRE-AUCTION AMBIT Transition Plan supports the relocation and sharing costs associated with the reallocation of an electromagnetic spectrum (EMS) band (in this case, 3450-3550 MHz), as required by the Enhanced 911 Services Act, 2004 (PL 108-494) and as amended by the Middle-Class Tax Relief Act, 2012 (PL 112-96), and defines the necessary RDT&E efforts to share EMS access for governmental and commercial use of the AMBIT band. When the Federal Communications Commission (FCC) auctions EMS bands to the commercial sector, previously reserved for governmental or military use, the DoD incurs costs as it must relocate to a new EMS band or share the auctioned band with commercial entities. Funds from the SRF are made available for DoD to pay relocation or sharing costs related to auctioned EMS bands, such as the costs of any modification or replacement of equipment, spares, associated ancillary equipment, software, facilities, operating manuals, training, or compliance with regulations that are attributable to relocation or sharing; the costs of all engineering, equipment, software, site acquisition, and construction, as well as any legitimate and prudent transaction expenses, including term-limited Federal civil servant and contractor staff necessary to carry out the relocation or sharing activities of a Federal entity, and reasonable additional costs incurred by the Federal entity that are attributable to relocation or sharing, including increased recurring costs. The SRF is funded with proceeds from FCC conducted auctions of spectrum licenses. SRF funds have an indefinite obligation period and remain available until expended (X Year). The DoD Chief Information Officer (CIO) executes oversight of DoD spectrum relocation and sharing efforts.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	9.785	0.000	0.000	-	0.000
Total Adjustments	9.785	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	9.785	-			
• SBIR/STTR Transfer	-	-			

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army											Date: April 2022	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*							
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
Total Program Element	-	59.755	75.520	56.938	-	56.938	36.427	12.633	11.887	12.003	0.000	265.163
CK3: *TLS Echelon Above Brigade (EAB)*	-	-	19.505	29.657	-	29.657	18.165	6.665	5.846	5.903	0.000	85.741
EW5: *Electronic Warfare Development*	-	12.597	-	-	-	-	-	-	-	-	0.000	12.597
EW6: *ARAT-TSS*	-	9.053	5.391	5.813	-	5.813	5.843	5.968	6.041	6.100	0.000	44.209
FJ5: *Terrestrial Layer System*	-	38.105	50.624	21.468	-	21.468	12.419	-	-	-	0.000	122.616

A. Mission Description and Budget Item Justification

A portion of this funding line is a key enabler of the Army Modernization Priorities in support of Terrestrial Layer System. This Program Element encompasses engineering and manufacturing development for tactical Electronic Warfare (EW) terrestrial (ground) employment applications. The systems under this program provide the Army with the capability to detect, identify, locate, collect/process, report, and engage (disrupt, degrade or deny) hostile forces to prevent their effective use of communications & non-communications networks, counter-mortar/counter-battery radars, surveillance radars, electronically fused munitions and other enemy threats using the Electro-Magnetic Spectrum (EMS).

Project CK3 supports the development of the Middle Tier of Acquisition (MTA), Terrestrial Layer System Echelons Above Brigade (TLS EAB). TLS EAB will provide Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyber-enabling integrated solution to support Multi Domain Battle capability gaps and provide Force Protection, Situational Development, and Information Superiority to Army Divisions, Corps and Multi-Domain Task Forces.

Project EW5 provides for Prophet Enhanced, the current system under the Prophet Ground acquisition program. Its primary mission is to provide 24-hour Situation Development and Information Superiority to the supported maneuver brigade enabling the most effective engagement of enemy forces. Prophet Enhanced provides a modular, scalable, open architecture based system solution optimized for ease of use in a variety of configurations.

Project EW6 provides for the Army Reprogramming Analysis Team (ARAT), a Department of the Army established project to develop techniques, methods, tools and architecture to reprogram mission software embedded in Army EW systems, Force Protection Systems (FPS), and Target Sensing Systems (TSS) in response to changes in threat signatures. ARAT Research and Development enables continuous development of: 1) automated threat analysis tools to rapidly detect (flag) threat changes within intelligence systems, 2) tools to minimize the time to develop EW Mission Software and Products (MSP) for both air and ground EW systems, 3) tools and technology to minimize the time required to test and validate MSPs, 4) improved communications conduits to transmit mission software changes to field users, and 5) enhanced mission-software uploading tools. These efforts allow for rapid threat analysis, simulation, mission software development, distribution and uploading of mission software changes directly to the supported Soldier in the field. The ARAT project will develop, test and equip an Army-wide infrastructure capable of rapidly reprogramming electronic combat software embedded in offensive and defensive weapon systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Army	Date: April 2022
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0304270A *I Electronic Warfare Development*

The total cost of TLS BCT Middle Tier of Acquisition effort is $168.43 million from FY21 to FY25 in RDTE, and procurement ($43.04M) of prototype units. TLS BCT is fully funded across the Future Years Defense Program.

FY 2023 funds the Terrestrial Layer System Echelons Above Brigade (TLS EAB) efforts (Project CK3), Army Reprogramming Analysis Team (ARAT) efforts (Project EW6) and Terrestrial Layer System Brigade Combat Team (TLS BCT) efforts (Project FJ5).

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	59.755	75.520	0.000	-	0.000
Current President's Budget	59.755	75.520	56.938	-	56.938
Total Adjustments	0.000	0.000	56.938	-	56.938
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	56.938	-	56.938

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) CK3 / *TLS Echelon Above Brigade (EAB)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CK3: *TLS Echelon Above Brigade (EAB)*	-	-	19.505	29.657	-	29.657	18.165	6.665	5.846	5.903	0.000	85.741
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of Terrestrial Layer System Echelons Above Brigade (TLS EAB). The TLS EAB will provide Army Divisions, Corps and Multi-Domain Task Forces (MDTF) extended range, integrated full spectrum Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyber-enabling non-kinetic offensive capabilities to support large scale combat operations. TLS EAB's information Superiority provides Indications and Warnings, Force Protection and Situational Awareness to influence the commander's decision cycle, improve targeting timeliness and accuracy, and provides electronic attack and offensive cyber warfare options to deny, degrade, disrupt, or otherwise manipulate the targeted force. TLS EAB employs technologically advanced systems with a modular open-system approach for multiple configurations that can be efficiently sustained and effectively upgraded to provide capabilities against changing near peer and emerging threats to address joint all domain capability gaps.

Justification:
FY23 RDT&E funds in the amount of $29.657 million will fund PMO support, TLS EAB Integration, and Demonstration/Experimentation/Prototyping.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: TLS EAB Integration	-	14.300	29.657
Description: TLS Echelons Above Brigade (EAB) is fulfilling distinct capabilities to support Division, Corps and Multi-Domain Task Force commanders. TLS EAB will be integrated onto different prime mover platforms than TLS Brigade Combat Team (BCT) and will employ different technologies and hardware to fulfill the unique extended range capabilities to support large scale combat operations.			
FY 2022 Plans: Initiates development of System Level Prototypes and integration of TLS EAB mission equipment.			
FY 2023 Plans: In FY 2023, TLS EAB will continue System Level Prototypes development, platform integration, technical system testing and solider touchpoints.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** CK3 / *TLS Echelon Above Brigade (EAB)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
In FY 2023, TLS EAB will experience an increase in funding, to support ramping up of System Level Prototypes development, platform integration, technical system testing and solider touchpoints.			
Title: TLS PMO ***FY 2022 Plans:*** Initiates PMO support for TLS EAB. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** In FY 2023, TLS EAB will experience an increase in funding for PMO support.	-	5.105	-
Title: Demonstration, Experimentation, and Prototyping ***FY 2022 Plans:*** Initiates Demonstration, Experimentation, and Prototyping of TLS EAB mission equipment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** In FY 2023, TLS EAB will experience an increase in funding, to support Demonstration, Experimentation, and Prototyping of TLS EAB mission equipment.	-	0.100	-
Accomplishments/Planned Programs Subtotals	-	19.505	29.657

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

A competitive acquisition approach is planned for TLS EAB development. The TLS EAB program will use a Middle Tier Acquisition (MTA) approach to rapidly deliver an integrated ground intelligence, electronic warfare and cyber capability on multiple platform types to align with maneuver forces. The TLS EAB program will leverage authorities to accelerate delivery through rapid prototyping with rapid fielding authorities or a Milestone C Decision Point.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) CK3 / *TLS Echelon Above Brigade (EAB)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	C/TBD	TBD : TBD	-	-		5.105	May 2022	1.847	Nov 2022	-		1.847	0.000	6.952	-
		Subtotal	-	-		5.105		1.847		-		1.847	0.000	6.952	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TLS EAB Integration	C/TBD	TBD : TBD	-	-		14.300	Apr 2022	25.964	Mar 2023	-		25.964	0.000	40.264	-
Demonstration, Experimentation, and Prototyping	C/TBD	TBD : TBD	-	-		0.100	May 2022	1.846	Apr 2023	-		1.846	0.000	1.946	-
		Subtotal	-	-		14.400		27.810		-		27.810	0.000	42.210	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		19.505		29.657		-		29.657	0.000	49.162	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** CK3 / *TLS Echelon Above Brigade (EAB)*

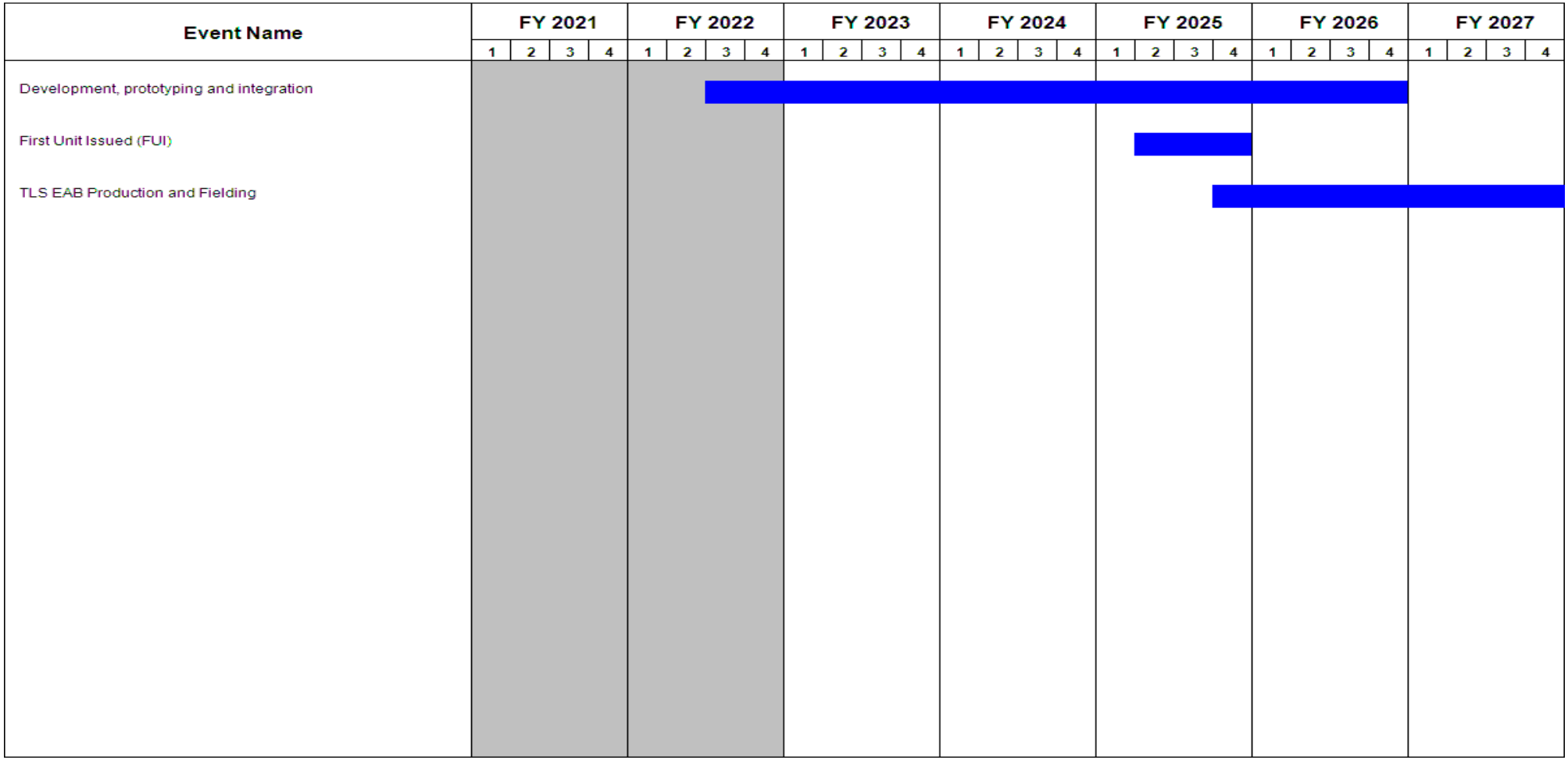


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** CK3 / *TLS Echelon Above Brigade (EAB)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Development, prototyping and integration	3	2022	4	2026
First Unit Issued (FUI)	2	2025	4	2025
TLS EAB Production and Fielding	4	2025	4	2030

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
EW5: *Electronic Warfare Development*	-	12.597	-	-	-	-	-	-	-	-	0.000	12.597
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

PE 0304270A/EW5 has no FY 2023 funding request.

A. Mission Description and Budget Item Justification

Prophet Enhanced is the current system under the Prophet Ground acquisition program. Funds provide for development and integration of Technical Insertion upgrades for Next Generation Signals and state-of-the-art Signals Intelligence (SIGINT) exploitation techniques to increase the capabilities of the Prophet Enhanced and maintain operational relevance. The Prophet Enhanced is the tactical commander's organic ground-based SIGINT/Electronic Warfare system for the Multi-Function Teams (MfTs) organic to the Brigade Combat Teams (BCTs) and Expeditionary-Military Intelligence Brigades (E-MIBs). Its primary mission is to provide 24-hour Situation Development and Information Superiority to the supported maneuver brigade to enable the most effective engagement of enemy forces. Prophet Enhanced provides a modular, scalable, open architecture-based system solution optimized for ease of use in a variety of configurations. It also incorporates product modification, integration, evaluation and demonstration events of equipment for rapid integration of Technical Insertions (TI) and product development to ensure operational relevance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Program Management ***Description:*** Engineering, technical and programmatic oversight of the development of next generation signals.	0.450	-	-
Title: Signal of Interest upgrades ***Description:*** The Signal Environment that Prophet Systems exploit is constantly contested with evolving threats. This environment creates gaps in Prophet?s ability to collect and exploit these signals. Prophet must integrate the latest emerging Intelligence Community (IC) and commercial solutions upgrades to remain relevant against these numerous, key, and high-priority emerging threats.	8.647	-	-
Title: Enhanced Signal Processing and Line of Sight Testing ***Description:*** Testing required of the Enhanced Signal Processing kit and Line of Sight Communications kit onto the Prophet Enhanced system.	0.200	-	-
Title: Enhanced Signal Processing Integration & Development	0.550	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Effort to integrate the Enhanced Signal Processing kit into the Prophet Enhanced system.			
Title: Customer Testing ***Description:*** Customer Testing of the Prophet Enhanced system as a result of changes to the baseline.	0.785	-	-
Title: Technical Data Package ***Description:*** Technical Data Package (TDP) for Prophet Enhanced, to be used for sustainment support as well as for follow on systems	1.965	-	-
Accomplishments/Planned Programs Subtotals	12.597	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• BZ9753: *PROPHET ENHANCED MODIFICATIONS*	116.025	47.300	26.200	-	26.200	-	-	-	-	Continuing	Continuing
• BZ9751: *SPECIAL PURPOSE SYSTEMS*	11.479	3.739	4.224	-	4.224	4.254	6.823	6.844	6.841	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Prophet Research and Development (R&D) Acquisition Strategy is structured to maintain operational relevancy of Prophet Enhanced systems in a dynamic threat environment while reducing risk and streamlining business and engineering processes. Contracting activities are to maintain SIGINT relevance and complete Technical Insertion (TI) to Prophet Enhanced systems to pursue the latest Signals of Interest and design against obsolescence. The Technical Insertion (TI) contract supports R&D and other developmental work.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PM Electronic Warfare & Cyber : APG, MD	2.061	0.450	Dec 2020	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	2.061	0.450		-		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Signals of Interst Upgrade	SS/CPFF	GD Mission Systems : Scottsdale, AZ	8.117	8.647	Jan 2021	-		-		-		-	Continuing	Continuing	Continuing
Trainer/TSA	SS/ Various	GD Mission Systems and Various Supporting Organizations : Scottsdale, AZ	2.000	-		-		-		-		-	0.000	2.000	-
Enhanced Signal Processing Integration, Development & Evaluation	SS/CPFF	GD Mission Systems : Scottsdale, AZ	3.483	0.550	Jan 2021	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	13.600	9.197		-		-		-		-	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Data Package	SS/CPFF	GD Mission Systems : Scottsdale, AZ	-	1.965	Mar 2021	-		-		-		-	0.000	1.965	-
		Subtotal	-	1.965		-		-		-		-	0.000	1.965	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW5 / *Electronic Warfare Development*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Enhanced Signal Processing and Line of Sight Testing	MIPR	Army Test & Evaluation Command : Ft. Huachuca, AZ	1.044	0.200	Dec 2020	-		-		-		-	0.000	1.244	-
Customer Testing	MIPR	Army Test & Evaluation Command : APG, MD	-	0.785	Jan 2021	-		-		-		-	0.000	0.785	-
		Subtotal	1.044	0.985		-		-		-		-	0.000	2.029	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.705	12.597		-		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development*

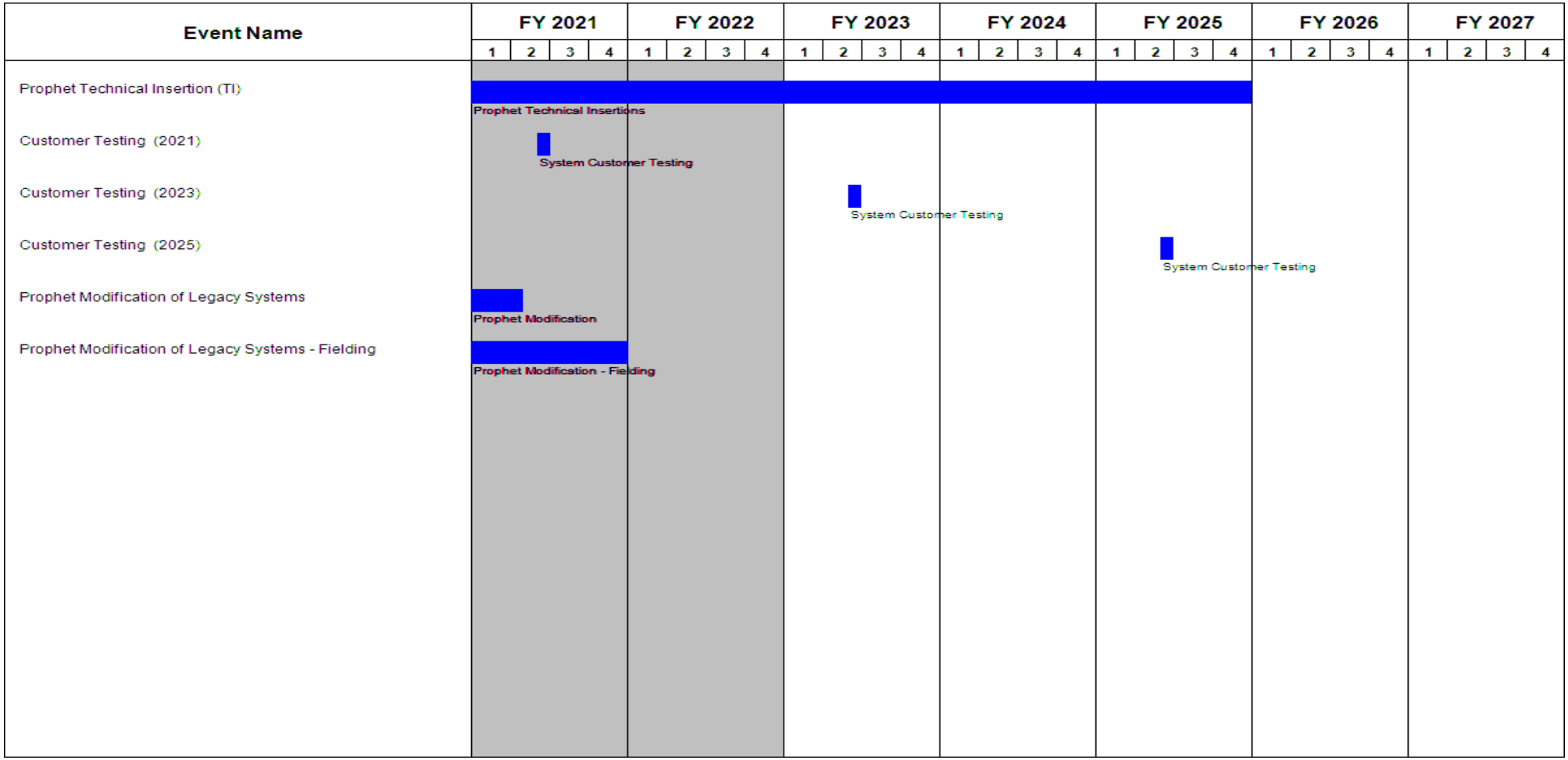


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW5 / *Electronic Warfare Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Prophet Technical Insertion (TI)	4	2008	4	2025
Customer Testing (2021)	2	2021	2	2021
Customer Testing (2023)	2	2023	2	2023
Customer Testing (2025)	2	2025	2	2025
Prophet Modification of Legacy Systems	3	2017	1	2021
Prophet Modification of Legacy Systems - Fielding	2	2018	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW6 / *ARAT-TSS*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
EW6: *ARAT-TSS*	-	9.053	5.391	5.813	-	5.813	5.843	5.968	6.041	6.100	0.000	44.209
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The Army Reprogramming Analysis Team (ARAT) is a Department of the Army established program to develop techniques, methods, tools, and architecture to rapidly reprogram mission software embedded in Army Electronic Warfare (EW) Force Protection Systems (FPS) in response to changes in threat signatures. The regulatory guidance directing this mission is contained in Army Regulation (AR) 525-15, AR 525-22, and AR 95-1. The ARAT develops integrated technical solutions required to counter increasingly sophisticated EW Signal threats to US Forces. The ARAT mission software reprogramming infrastructure supports the Army Campaign Plan to provide the Regionally Aligned Forces tactical Commander timely rapid-reprogramming capability of EW systems with mission software. The ARAT mission responsibility is to develop and distribute Mission Software and Products to forward deployed combat forces. ARAT identifies and analyzes worldwide threat signature changes which affect EW systems; determines the impact of observed Signal Intelligence (SIGINT) signature changes; rapidly develops new mission software to adapt friendly systems to detect and defeat enemy threats to U.S. Army ground and air platforms; disseminates the Mission Software and Products to forward deployed forces, and provides government developed tools and software to upload new mission software into the affected EW systems.

A. Mission Description and Budget Item Justification

Current military operations are conducted in a rapidly changing threat environment, where Improvised Explosive Devices (IEDs), Infra Red (IR) man-portable air defense systems (MANPADS) seekers, radar guided surface-to-air-missiles (SAM), laser guided weapons, anti-helicopter mines, and targeting sensors are proliferating and evolving. Integrated solutions are required to counter increasingly sophisticated EW threats. The ARAT reprogramming infrastructure supports the tactical Commander by providing timely rapid reprogramming of mission software and information dissemination for Army supported, Joint and allied services. ARAT supports integrated reprogramming of target acquisition, target engagement, vehicle survivability, and Aircraft Survivability Equipment (ASE). ARAT rapid-reprogramming infrastructure supports tactical requirements for deployed aircraft and ground-based (e.g. Counter Radio-Controlled Improvised Explosive Device (CREW)) survivability systems. ARAT identifies and analyzes threat signature changes which affect EW systems; determines the impact of observed signature changes; develops new mission software to adapt the system to the changes; disseminates the mission software; and provides methods to upload the new mission software into the affected EW systems. Each element within the ARAT infrastructure plays a specific role within the program's rapid reprogramming process, providing the Soldier with the capability to install mission and target identification software at the lowest possible level, thus maximizing flexibility for tactical commanders. ARAT participates in the operational and developmental test design of Army EW systems, and supports Joint Service Reprogramming Exercises in all theaters. ARAT Research and Development enables continuous development of: 1) automated threat analysis tools to rapidly detect (flag) threat changes within the intelligence system, 2) tools to minimize the time to develop Mission Software and Products (MSP), 3) tools and technology to minimize the time required to test and validate MSPs, 4) improved communications conduits to rapidly transmit mission software to upload into supported EW systems. These efforts allow for rapid threat analysis, threat modeling and simulation, mission software development and testing, distribution and uploading of mission software directly to the supported Soldier in the field.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Keeping Pace with the Enemy and Technology	4.703	2.657	2.758

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: This effort focuses on developing a capability for the Government to rapidly develop and distribute organic mission software solutions for multiple EW systems. The Army must continually modernize and enhance software tools, hardware modernization, and processes counter enemy technology. ARAT EW6 executes Research, Development, Test, and Evaluation (RDTE) funding to provide an organic Army capability for this organization to rapidly develop, test and distribute mission software solutions for forward deployed combat forces. ***FY 2022 Plans:*** ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2023 Plans:*** Minor increase based on inflation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Minor cost increase based on inflation.			
Title: Infrastructure Improvements Multispectral ***Description:*** This effort focuses on enhancing the Army's Multispectral Missile Warning System (MWS) software sustainment infrastructure. With the worldwide proliferation of MANPADS the Army must have the capability to rapidly analyze and develop mission software solutions that detect and counter MANPADS to defend Army Aviation platforms against this lethal threat. ***FY 2022 Plans:*** ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2023 Plans:*** Minor cost increase based on inflation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Minor cost increase based on inflation.	1.087	0.616	0.676
Title: Infrastructure Improvement Radio Frequency General ***Description:*** This effort focuses on enhancing the Army's Radio Frequency (RF) EW system Mission Software and Products (MSP) development and distribution infrastructure. The Army must fight in a contested and congested EW environment. Mission	1.386	1.004	1.251

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
software solutions to defend against RF threats must be rapidly developed, tested, and distributed to Soldiers on an ever changing battlefield. ***FY 2022 Plans:*** ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2023 Plans:*** Minor cost increase based on inflation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Minor cost increase based on inflation.			
Title: Threat Flagging and Mission Data Set Reprogramming Tool Development ***Description:*** This effort focuses on enhancing the Army's capability to monitor changes in enemy EW systems that affect system performance of Army detection, declaration, and countermeasure EW systems onboard. The enemy is continuously developing or modifying it's EW systems. For Army platforms to have protection against enemy systems it must have a robust capability to immediately detect changes in threat system performance and rapidly develop, test, and distribute a mission software solution that counters the threat. This effort will enhance the Army's capability bridge detection of a change in enemy threat and the rapid development of MSP. ***FY 2022 Plans:*** ARAT EW6 will continue infrastructure enhancement activities that will reduce timelines from threat detection to distribution of mission software solutions that detect and defeat enemy Electronic Warfare systems directed against air and ground Army platforms. ***FY 2023 Plans:*** Minor cost increase based on inflation. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Minor cost increase based on inflation.	1.877	1.114	1.128
Accomplishments/Planned Programs Subtotals	9.053	5.391	5.813

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

The efforts to be funded in this project will require a combination of systems specific and high-tech knowledge. The contractual services portion for the project will be obtained from both the Communications-Electronics Command (CECOM) Software Engineering Center (SEC) competitive omnibus and the Program Executive Office - Simulation, Training and Instrumentation (PEO STRI), and the Defense Technical Intelligence Center (DTIC) high tech contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) EW6 / *ARAT-TSS*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	CECOM SEC : Aberdeen Proving Ground, MD	9.730	0.188	Mar 2020	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	9.730	0.188		-		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USG Labor	Various	CECOM SEC : Various Locations	3.866	1.190		0.576		0.596		-		0.596	Continuing	Continuing	Continuing
Travel	Various	CECOM SEC : Various Locations	1.002	0.088		0.092		0.096		-		0.096	Continuing	Continuing	Continuing
		Subtotal	4.868	1.278		0.668		0.692		-		0.692	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	CECOM SEC, RDECOM, DTIC : Various Locations	47.936	7.587	Mar 2020	4.723	Mar 2020	5.121	Mar 2020	-		5.121	Continuing	Continuing	Continuing
		Subtotal	47.936	7.587		4.723		5.121		-		5.121	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	62.534	9.053		5.391		5.813		-		5.813	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

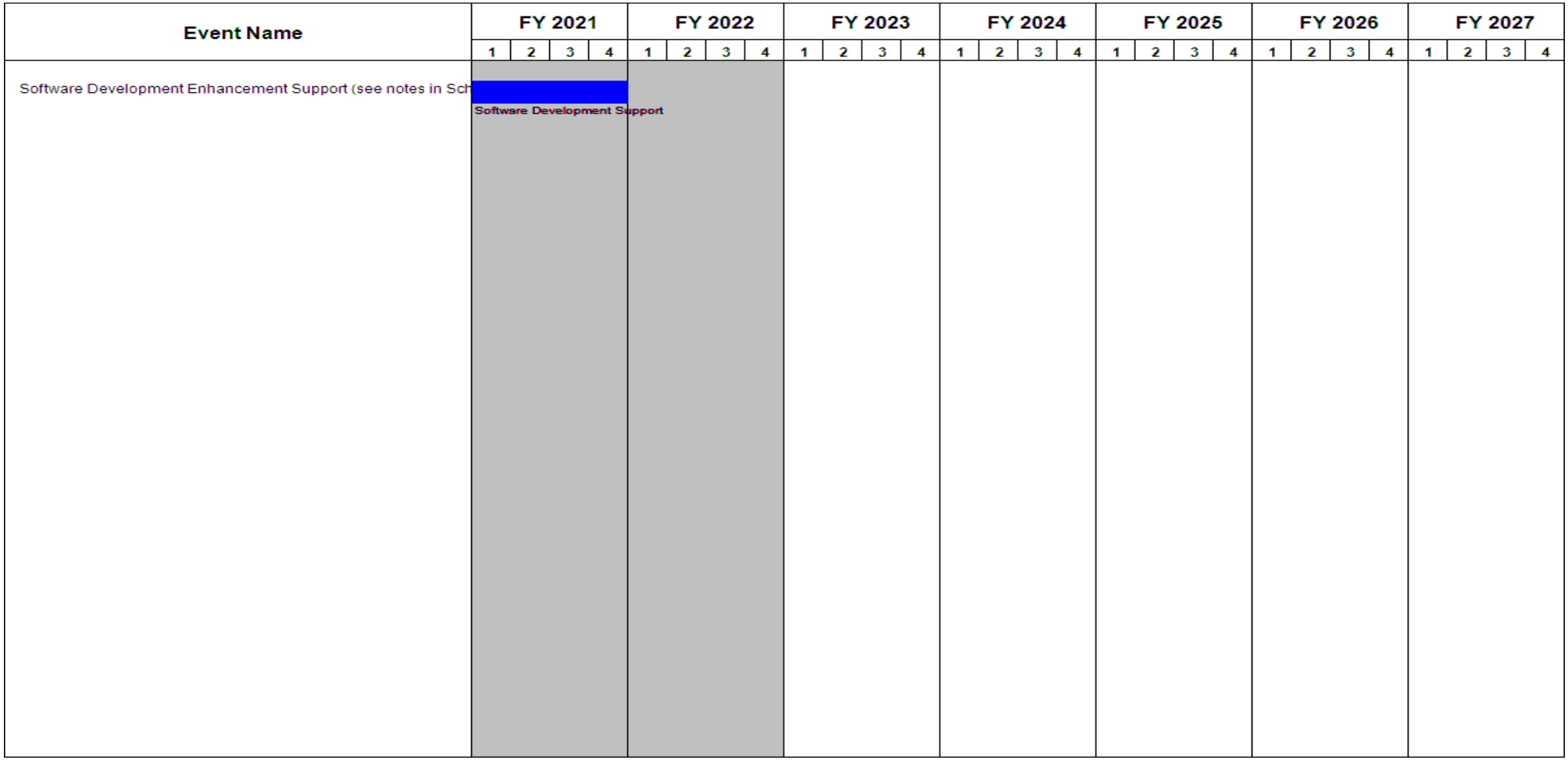


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** EW6 / *ARAT-TSS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Software Development Enhancement Support (see notes in Schedule Detail)	1	2015	4	2021

Note

- Software Test Automation
- Threat Analysis Data Evaluation Tool
- Enhance Data Distribution

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) FJ5 / *Terrestrial Layer System*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
FJ5: *Terrestrial Layer System*	-	38.105	50.624	21.468	-	21.468	12.419	-	-	-	0.000	122.616
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of Terrestrial Layer System Brigade Combat Team (TLS BCT), a Middle Tier of Acquisition program, which provides Army maneuver forces integrated full spectrum Signals Intelligence (SIGINT), Electronic Warfare (EW), and Cyber-enabling non-kinetic offensive operation options to Brigade Combat Team (BCT) commanders. TLS BCT's information Superiority provides Indications and Warnings, Force Protection and Situational Awareness to influence the commander's decision cycle, improve targeting timeliness and accuracy, and provide the maneuver commander with electronic attack and offensive cyber warfare options to deny, degrade, disrupt, or otherwise manipulate the targeted force. TLS BCT employs technologically advanced systems with a modular open-system approach for multiple configurations that can be efficiently sustained and effectively upgraded to provide capabilities against changing near peer and emerging threats to address multi-domain capability gaps.

The total cost of TLS BCT Middle Tier of Acquisition effort is $168.43 million from FY21 to FY25 in RDTE, and procurement ($43.04M) of prototype units. TLS BCT is fully funded across the Future Years Defense Program.

Justification:
FY23 total program amount of $21.468M will fund technical/PMO support, vehicle integration and system development, new signal threat integration/signal relevancy, and test events.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Technical / Program Management	7.318	9.216	2.561
Description: Funds will provide for technical engineering and program management. ***FY 2022 Plans:*** FY 2022 technical engineering and program management support for TLS. ***FY 2023 Plans:*** FY 2023 technical engineering and program management support for TLS BCT. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decrease is the result of the completion of TLS BCT integration engineering and testing on one of the three designated platforms, leaving only two platforms remaining for integration engineering and testing.			
Title: Platform Integration and System Development	28.036	36.467	12.666

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: Development of System Level Prototypes and integration of TLS BCT mission equipment onto vehicle platforms that will enable TLS BCT platforms to match vehicle platforms organic to the unit. ***FY 2022 Plans:*** Development of System Level Prototypes and integration of TLS mission equipment onto at least, but not limited to the Stryker vehicle platform and AMPV vehicle platform. ***FY 2023 Plans:*** Development of System Level Prototypes and integration of TLS BCT mission equipment onto at least, but not limited to the AMPV vehicle platform and IBCT identified vehicle platform. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decrease is the result of the completion of TLS BCT integration engineering and testing on one of the three designated platforms, leaving only two platforms remaining for integration engineering and testing.			
Title: Test Events ***Description:*** System and Operational test events ***FY 2022 Plans:*** Testing of TLS system ***FY 2023 Plans:*** Continuation of testing of TLS BCT on at least, but not limited to the AMPV platform. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** FY 2023 decrease is the result of the completion of TLS BCT integration engineering and testing on one of the three designated platforms, leaving only two platforms remaining for integration engineering and testing.	2.751	3.000	4.066
Title: New signal threat integration and signal relevancy ***FY 2022 Plans:*** Includes, but is not limited to, development and evaluation of Next Generation SIGINT, EA and Cyber capabilities into the TLS baseline to increase signal processing capabilities for the against key near peer and emerging enemy threat signals. ***FY 2023 Plans:*** Continues, but is not limited to, development and evaluation of Next Generation SIGINT, EA and Cyber capabilities into the TLS BCT baseline to increase signal processing capabilities for the against key near peer and emerging enemy threat signals. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	-	1.941	2.175

Exhibit R-2A, RDT&E Project Justification: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Decrease due to anticipated maturity of development environment and shift of relevancy efforts to 6.7 RDTE line for post production efforts.			
Accomplishments/Planned Programs Subtotals	38.105	50.624	21.468

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• B97600: *TERRESTRIAL LAYER SYSTEMS (TLS)*	8.081	39.240	88.915	-	88.915	201.148	236.954	230.108	229.987	0.000	1,034.433
• 0604021A: *Electronic Warfare Technology Maturation (MIP)*	15.034	-	0.000	-	0.000	-	-	-	-	0.000	15.034

Remarks

D. Acquisition Strategy

A competitive acquisition approach is planned for TLS BCT development; it is a Middle Tier of Acquisition program. The TLS BCT program will use a tailored acquisition approach to rapidly deliver an integrated ground intelligence, electronic warfare and cyber capability on multiple platform types to align with maneuver forces. The TLS BCT program will leverage authorities to accelerate delivery through rapid prototyping with rapid fielding authorities or a Milestone C Decision Point.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) FJ5 / *Terrestrial Layer System*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical / Program Management	TBD	TBD : TBD	-	7.318	Feb 2021	9.216	Feb 2022	2.561	Feb 2023	-		2.561	Continuing	Continuing	-
		Subtotal	-	7.318		9.216		2.561		-		2.561	Continuing	Continuing	N/A

Remarks

Efforts include FFRDC support from Contract #W56KGU-18-D-0004 to continue developing and managing the Signals processing and compute environment as well as from competitive contract #W15P7T-10-D-D421 for Systems Engineering and Technical Assistance (SETA) support.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Vehicle Integration and System Development	C/CPFF	Lockheed Martin : Syracuse, NY	-	28.036	Mar 2021	36.467	Apr 2022	12.666	Dec 2022	-		12.666	0.000	77.169	-
New signal threat integration and signal relevancy	C/CPFF	TBD : TBD	-	-		3.000	Jan 2022	2.175	Jan 2023	-		2.175	0.000	5.175	-
		Subtotal	-	28.036		39.467		14.841		-		14.841	0.000	82.344	N/A

Remarks

Competitive OTA #W15QKN-17-9-5555 for development and integration. FY2023 funding supports continued system development and integration on at least, but not limited to the Stryker vehicle platform, the AMPV vehicle platform and the IBCT vehicle platform that will enable TLS fielded systems to match vehicle platforms organic to the fielded unit.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Events	MIPR	ATEC : APG, MD	-	2.751	Mar 2021	1.941	Mar 2022	4.066	Mar 2023	-		4.066	0.000	8.758	-
		Subtotal	-	2.751		1.941		4.066		-		4.066	0.000	8.758	N/A

Remarks

FY2023 Test & Evaluation efforts will be accomplished via a combination of various support contracts and direct Government support.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Army			Date: April 2022
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0304270A / *Electronic Warfare Development*	Project (Number/Name) FJ5 / *Terrestrial Layer System*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	38.105		50.624		21.468		-		21.468	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

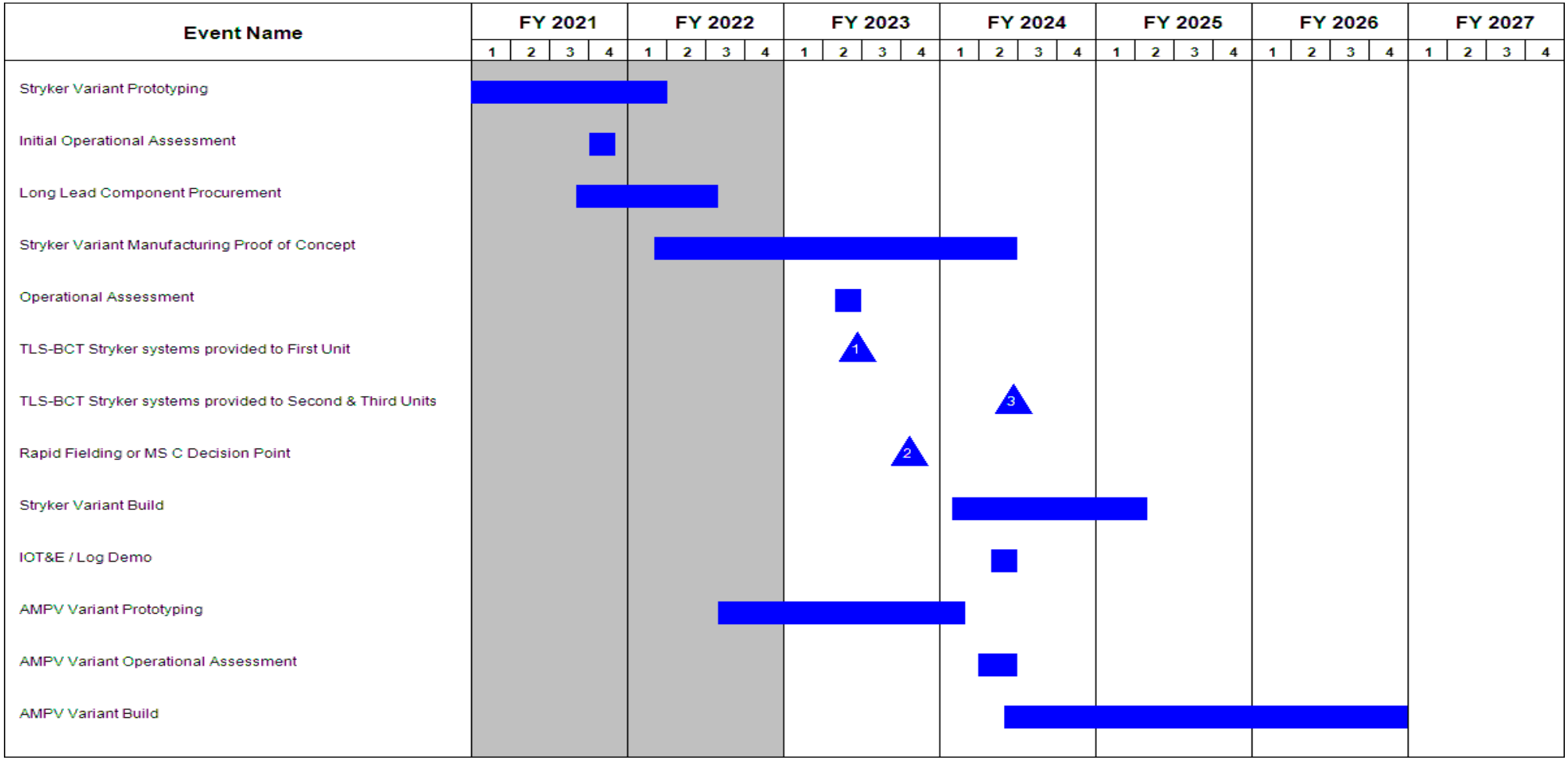


Exhibit R-4, RDT&E Schedule Profile: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

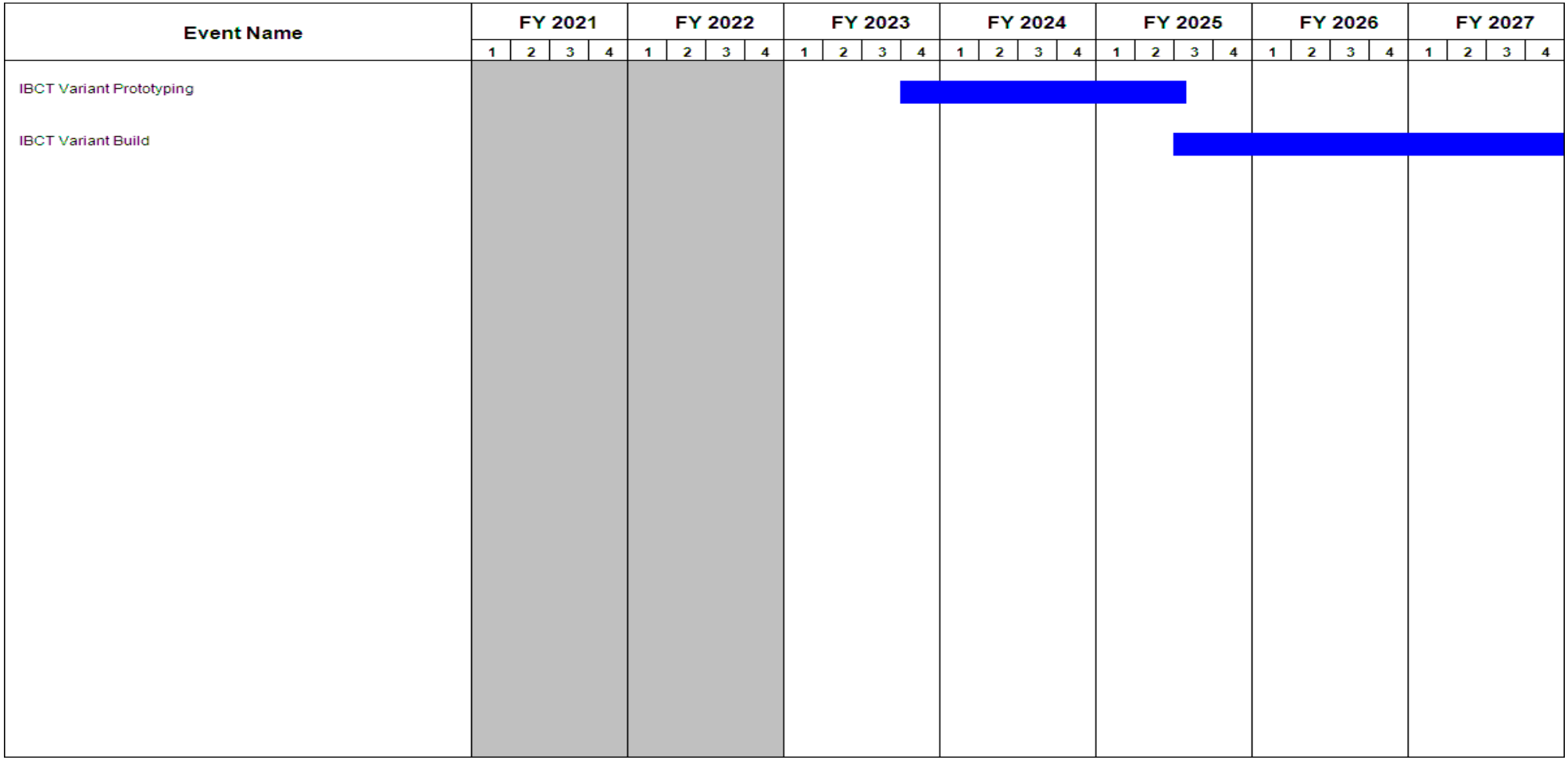


Exhibit R-4A, RDT&E Schedule Details: PB 2023 Army		Date: April 2022
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0304270A / *Electronic Warfare Development*	**Project (Number/Name)** FJ5 / *Terrestrial Layer System*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone A	2	2020	2	2020
Mid Tier Acquistion Approval	3	2020	3	2020
Stryker Variant Prototyping	3	2020	1	2022
Initial Operational Assessment	4	2021	4	2021
Long Lead Component Procurement	3	2021	3	2022
Stryker Variant Manufacturing Proof of Concept	1	2022	2	2024
Operational Assessment	2	2023	2	2023
TLS-BCT Stryker systems provided to First Unit	2	2023	2	2023
TLS-BCT Stryker systems provided to Second & Third Units	2	2024	2	2024
Rapid Fielding or MS C Decision Point	4	2023	4	2023
Stryker Variant Build	1	2024	2	2025
IOT&E / Log Demo	2	2024	2	2024
AMPV Variant Prototyping	3	2022	1	2024
AMPV Variant Operational Assessment	2	2024	2	2024
AMPV Variant Build	2	2024	4	2026
IBCT Variant Prototyping	4	2023	3	2025
IBCT Variant Build	3	2025	4	2027