Department of Defense
Fiscal Year (FY) 2025 Budget Estimates

March 2024

Army

Justification Book Volume 3b of 3

Research, Development, Test & Evaluation, Army

RDT&E − Volume II, Budget Activity 5B

Volume 3b 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, $14,073,308,000.00 to remain available for obligation until September 30, 2026.

The FY 2025 Overseas Operational Costs accounted for in the Base budget total $3,157 thousand.

FY 2023 includes $7,626 thousand in Overseas Operations Costs (OOC) Actuals. FY 2024 includes $3,166 thousand in OOC Requested. FY 2025 includes $3,157 thousand for the OOC Budget Estimate. OOC were financed previously with former Overseas Contingency Operations (OCO) funding.

COST STATEMENT

The following Justification Books were prepared at a cost of $277,115.51 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 2025 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 2025.

2. Relationship of the FY 2025 Budget Submitted to Congress to the FY 2024 Budget Submitted to Congress. This paragraph provides a list of program elements/projects that are major new starts 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	0602148A / CC3	FVL Radar Technologies
02	0602183A / DK1	Air Vehicle Integrated & Alternative Tech (AVIATe)
02	0602386A / SM1	Scale-Up Microbial Products for Biomanufacturing
02	0602150A / SU1	Counter Small Unmanned Aircraft Sys (C-sUAS) Tech
03	0603464A / CE9	Armaments Advanced Technology
03	0603119A / DI9	Comprehensive Adapt Operational Energy Adv Tech
03	0603043A / DK2	Air Vehicle Improvement & Adv Tech (AVIATe)
03	0603044A / EA7	Enhanced Indirect Fire Adv Tech
03	0603466A / IB1	Integrated Beam Control Systems Demo for C-CM
03	0603116A / LR1	Long Range Sensing Adv Tech
03	0603465A / CK2	High Speed Maneuverable Missile (HSMM) Adv Tech
03	0603042A / DI6	Anti-Tamper Advanced Tech Development
04	0604386A / CQ9	Biotechnology for Materials - Dem/Val
04	0604019A / DJ5	Multi-Domain Artillery Cannon System (MDACS)
04	0305251A / FA8	Cyberspace Operations Forces and Force Support
04	0603639A / FG1	Cannon-Delivered Area Effects Munitions (C-DAEM)
04	0603639A / XT5	30mm Anti-Personnel and Counter UAS

05	0604805A / DH4	CMOSS Mounted Form Factor (CMFF) Radio Cards
05	0604710A / DI5	FALCONS
05	0605244A / DJ3	Joint Reduced Range Rocket
05	0605242A / DJ4	Theater SIGINT System (TSIGS)
05	0605247A / DJ8	Spectrum Situational Awareness System (S2AS)
05	0605054A / DJ9	Guam Defense System - Management
05	0604854A / DH7	Next Generation Howitzer
05	0604818A / DK3	Sensor Computing Environment (SCE)
05	0604713A / EL2	Army Field Feeding Equipment
05	0605038A / EQ7	NBC Reconnaissance Vehicle (NBCRV) Sensor Suite
05	0605051A / ITD	Improved Threat Detection System (ITDS)
05	0604827A / LS2	Lethal Semi-Autonomous Aerial Unmanned Sys-Eng Dev
05	0604802A / MS1	Battalion Mortar System Modernization
05	0605241A / DG5	Future Long Range Assault Aircraft
05	0604805A / DH5	CMOSS Mounted Form Factor (CMFF)Chassis
06	0605805A / 857	DoD Explosives Safety Standards
07	0607101A / DJ7	Radiological Detection System Development

Program Terminations (including transfers to Procurement and Sustainment):

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Budget Activity	***OSDPE / Project***	***Project Title***
02	0602002A / DC5	Team Ignite
02	0602145A / BI4	Materials Application and Integration Tech
03	0603464A / AG5	Extended Range Artillery Munition Suite Adv Tech
03	0603118A / AY7	Small Arms Fire Control Advanced Technology
03	0603118A / BB8	Soldier Centric Advanced Technology
03	0603462A / BI5	Materials Application and Integration Adv Tech
03	0603462A / BK4	Next Gen Intelligent Fire Control(NG-IFC) Adv Tech

03	0603041A / CM8	Convergence Battlefield Integration
04	0603801A / CK7	FARA Ecosystem
04	0603801A / F12	Future Attack Reconnaissance Aircraft
04	0604120A / EJ2	MOUNTED
04	0604120A / BV4	Area Protection and Alt Nav Technology Development
05	0604802A / EP2	Shoulder-Launched Munitions
05	0604802A / EP4	One-Way Luminescence for Small Caliber Ammo
05	0604802A / FA6	30mm Lethality
05	0604818A / EJ6	TACTICAL ENHANCEMENT
05	0605041A / CY5	CYBER Situational Understanding
05	0605053A / BS9	Robotic Payloads
05	0604808A / CS3	Next Generation Advanced Bomb Suit (NGABS)
06	0605326A / 33B	Soldier-Centered Analyses For Future Force
07	0203735A / 280	RECOV VEH IMPROV PROG
07	0303028A / FG2	Counterintelligence & Human Intel Modernization
07	0607142A / EW9	Aviation Rocket System Product Improvement and Dev

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 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 2040A Research, Development, Test and Evaluation, Army

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
1	0601102A	Defense Research Sciences	01	U	386,594	296,670	310,191
2	0601103A	University Research Initiatives	01	U	97,598	75,672	78,166
3	0601104A	University and Industry Research Centers	01	U	119,270	108,946	109,726
4	0601121A	Cyber Collaborative Research Alliance	01	U	5,355	5,459	5,525
5	0601601A	Artificial Intelligence and Machine Learning Basic Research	01	U	7,985	10,708	10,309
	Basic Research				**616,802**	**497,455**	**513,917**
6	0602002A	Army Agile Innovation and Development-Applied Research	02	U	127	5,613	8,032
7	0602134A	Counter Improvised-Threat Advanced Studies	02	U	5,966	6,242	6,163
8	0602141A	Lethality Technology	02	U	180,191	85,578	96,094
9	0602142A	Army Applied Research	02	U	27,833	34,572	
10	0602143A	Soldier Lethality Technology	02	U	266,501	104,470	102,236
11	0602144A	Ground Technology	02	U	256,916	60,005	66,707
12	0602145A	Next Generation Combat Vehicle Technology	02	U	273,166	166,500	149,108
13	0602146A	Network C3I Technology	02	U	221,293	81,618	84,576
14	0602147A	Long Range Precision Fires Technology	02	U	113,099	34,683	32,089
15	0602148A	Future Verticle Lift Technology	02	U	103,022	73,844	52,685
16	0602150A	Air and Missile Defense Technology	02	U	94,972	33,301	39,188
17	0602180A	Artificial Intelligence and Machine Learning Technologies	02	U	15,481	24,142	20,319
18	0602181A	All Domain Convergence Applied Research	02	U	26,362	14,297	12,269
19	0602182A	C3I Applied Research	02	U	26,913	30,659	25,839
20	0602183A	Air Platform Applied Research	02	U	40,372	48,163	53,206
21	0602184A	Soldier Applied Research	02	U	15,427	18,986	21,069

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22	0602213A	C3I Applied Cyber	02	U	13,605	22,714	28,656
23	0602386A	Biotechnology for Materials - Applied Research	02	U	21,015	16,736	11,780
25	0602785A	Manpower/Personnel/Training Technology	02	U	19,343	19,969	19,795
26	0602787A	Medical Technology	02	U	79,851	66,266	68,481
999	999999999	Classified Programs	02	U			35,766
	Applied Research				**1,801,455**	**948,358**	**934,058**
27	0603002A	Medical Advanced Technology	03	U	31,398	4,147	3,112
28	0603007A	Manpower, Personnel and Training Advanced Technology	03	U	15,146	16,316	16,716
29	0603025A	Army Agile Innovation and Demonstration	03	U	17,757	23,156	14,608
30	0603040A	Artificial Intelligence and Machine Learning Advanced Technologies	03	U	6,162	13,187	18,263
31	0603041A	All Domain Convergence Advanced Technology	03	U	40,955	33,332	23,722
32	0603042A	C3I Advanced Technology	03	U	12,252	19,225	22,814
33	0603043A	Air Platform Advanced Technology	03	U	13,062	14,165	17,076
34	0603044A	Soldier Advanced Technology	03	U	462	1,214	10,133
35	0603116A	Lethality Advanced Technology	03	U	11,460	20,582	33,969
36	0603117A	Army Advanced Technology Development	03	U	138,774	136,280	
37	0603118A	Soldier Lethality Advanced Technology	03	U	150,020	102,778	94,899
38	0603119A	Ground Advanced Technology	03	U	415,104	40,597	45,880
39	0603134A	Counter Improvised-Threat Simulation	03	U	20,782	21,672	21,398
40	0603386A	Biotechnology for Materials - Advanced Research	03	U	54,778	59,871	36,360
41	0603457A	C3I Cyber Advanced Development	03	U	41,354	28,847	19,616
42	0603461A	High Performance Computing Modernization Program	03	U	293,043	255,772	239,597
43	0603462A	Next Generation Combat Vehicle Advanced Technology	03	U	467,533	217,394	175,198

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44	0603463A	Network C3I Advanced Technology	03	U	174,768	105,549	94,424
45	0603464A	Long Range Precision Fires Advanced Technology	03	U	225,921	153,024	164,943
46	0603465A	Future Vertical Lift Advanced Technology	03	U	265,429	158,795	140,578
47	0603466A	Air and Missile Defense Advanced Technology	03	U	108,758	21,015	28,333
49	0603920A	Humanitarian Demining	03	U	20,674	9,068	9,272
999	999999999	Classified Programs	03	U			155,526
	Advanced Technology Development				**2,525,592**	**1,455,986**	**1,386,437**
51	0603305A	Army Missle Defense Systems Integration	04	U	117,723	12,904	13,031
52	0603308A	Army Space Systems Integration	04	U	30,453	19,120	19,659
53	0603327A	Air and Missile Defense Systems Engineering	04	U	15,000		
54	0603619A	Landmine Warfare and Barrier - Adv Dev	04	U	59,911	47,537	58,617
55	0603639A	Tank and Medium Caliber Ammunition	04	U	49,609	91,323	116,027
56	0603645A	Armored System Modernization - Adv Dev	04	U	133,300	43,026	23,235
57	0603747A	Soldier Support and Survivability	04	U	4,030	3,550	4,059
58	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	U	72,364	65,567	90,265
59	0603774A	Night Vision Systems Advanced Development	04	U	96,819	73,675	64,113
60	0603779A	Environmental Quality Technology - Dem/Val	04	U	75,614	31,720	34,091
61	0603790A	NATO Research and Development	04	U	3,666	4,143	4,184
62	0603801A	Aviation - Adv Dev	04	U	1,113,295	1,502,160	6,591
63	0603804A	Logistics and Engineer Equipment - Adv Dev	04	U	24,287	7,604	12,445
64	0603807A	Medical Systems - Adv Dev	04	U	5,598	1,602	582
65	0603827A	Soldier Systems - Advanced Development	04	U	20,807	27,681	24,284
66	0604017A	Robotics Development	04	U	27,444	3,024	3,039
67	0604019A	Expanded Mission Area Missile (EMAM)	04	U	250,351	97,018	102,589

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68	0604020A	Cross Functional Team (CFT) Advanced Development & Prototyping	04	U	74,189	117,557	63,831
69	0604035A	Low Earth Orbit (LEO) Satellite Capability	04	U	34,213	38,851	21,935
70	0604036A	Multi-Domain Sensing System (MDSS) Adv Dev	04	U	47,915	191,394	239,135
71	0604037A	Tactical Intel Targeting Access Node (TITAN) Adv Dev	04	U	863	10,626	4,317
72	0604100A	Analysis Of Alternatives	04	U	10,270	11,095	11,234
73	0604101A	Small Unmanned Aerial Vehicle (SUAV) (6.4)	04	U	1,373	5,144	1,800
74	0604103A	Electronic Warfare Planning and Management Tool (EWPMT)	04	U		2,260	2,004
75	0604113A	Future Tactical Unmanned Aircraft System (FTUAS)	04	U	134,719	53,143	127,870
76	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04	U	366,637	816,663	149,463
77	0604115A	Technology Maturation Initiatives	04	U	209,220	281,314	252,000
78	0604117A	Maneuver - Short Range Air Defense (M-SHORAD)	04	U	269,186	281,239	315,772
79	0604119A	Army Advanced Component Development & Prototyping	04	U	198,111	204,914	
80	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	U	54,728	40,930	24,168
81	0604121A	Synthetic Training Environment Refinement & Prototyping	04	U	236,396	109,714	136,029
82	0604134A	Counter Improvised-Threat Demonstration, Prototype Development, and Testing	04	U	14,298	16,426	17,341
83	0604135A	Strategic Mid-Range Fires	04	U	379,535	31,559	
84	0604182A	Hypersonics	04	U	309,068	43,435	
85	0604386A	Biotechnology for Materials - Dem/Val	04	U			20,862
86	0604403A	Future Interceptor	04	U	7,880	8,040	8,058
88	0604531A	Counter - Small Unmanned Aircraft Systems Advanced Development	04	U	36,629	64,242	59,983
90	0604541A	Unified Network Transport	04	U	35,616	40,915	31,837

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91	0305251A	Cyberspace Operations Forces and Force Support	04	U	55,599		2,270
999	999999999	Classified Programs	04	U		19,200	277,181
	Advanced Component Development & Prototypes				**4,576,716**	**4,420,315**	**2,343,901**
92	0604201A	Aircraft Avionics	05	U	3,213	13,673	7,171
93	0604270A	Electronic Warfare Development	05	U	3,987	12,789	35,942
94	0604601A	Infantry Support Weapons	05	U	80,115	64,076	52,586
95	0604604A	Medium Tactical Vehicles	05	U	21,354	28,226	15,088
96	0604611A	JAVELIN	05	U	15,899	7,827	10,405
97	0604622A	Family of Heavy Tactical Vehicles	05	U	51,261	44,197	50,011
98	0604633A	Air Traffic Control	05	U	2,527	1,134	982
99	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05	U	107,975	142,125	92,540
100	0604642A	Light Tactical Wheeled Vehicles	05	U	13,667	53,564	100,257
101	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05	U	60,827	102,201	48,097
102	0604710A	Night Vision Systems - Eng Dev	05	U	89,273	48,720	89,259
103	0604713A	Combat Feeding, Clothing, and Equipment	05	U	1,509	2,223	3,286
104	0604715A	Non-System Training Devices - Eng Dev	05	U	17,910	21,441	28,427
105	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	U	54,244	74,738	69,653
106	0604742A	Constructive Simulation Systems Development	05	U	28,404	30,985	30,097
107	0604746A	Automatic Test Equipment Development	05	U	4,989	13,626	12,927
108	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	U	7,890	8,802	8,914
109	0604798A	Brigade Analysis, Integration and Evaluation	05	U	22,207	20,828	26,352
110	0604802A	Weapons and Munitions - Eng Dev	05	U	284,859	243,851	242,949
111	0604804A	Logistics and Engineer Equipment - Eng Dev	05	U	74,150	37,420	41,829

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Mar 2024

(Dollars in Thousands)

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Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments	FY 2025 Request
112	0604805A	Command, Control, Communications Systems - Eng Dev	05	U	43,533	34,214	92,300
113	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	U	25,035	6,496	7,143
114	0604808A	Landmine Warfare/Barrier - Eng Dev	05	U	36,707	13,581	19,134
115	0604818A	Army Tactical Command & Control Hardware & Software	05	U	128,240	168,574	165,229
116	0604820A	Radar Development	05	U	77,158	94,944	76,090
117	0604822A	General Fund Enterprise Business System (GFEBS)	05	U	10,022	2,965	1,995
118	0604827A	Soldier Systems - Warrior Dem/Val	05	U	19,237	11,333	29,132
119	0604852A	Suite of Survivability Enhancement Systems - EMD	05	U	75,520	79,250	77,864
120	0604854A	Artillery Systems - EMD	05	U	42,261	42,490	50,495
121	0605013A	Information Technology Development	05	U	85,713	104,024	120,076
122	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	U	65,055	102,084	126,354
123	0605030A	Joint Tactical Network Center (JTNC)	05	U	17,274	18,662	20,191
124	0605031A	Joint Tactical Network (JTN)	05	U	29,050	30,328	31,214
125	0605035A	Common Infrared Countermeasures (CIRCM)	05	U	9,602	11,509	11,691
126	0605036A	Combating Weapons of Mass Destruction (CWMD)	05	U		1,050	7,846
127	0605038A	Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite	05	U			7,886
128	0605041A	Defensive CYBER Tool Development	05	U	33,029	27,714	4,176
129	0605042A	Tactical Network Radio Systems (Low-Tier)	05	U	4,265	4,318	4,288
130	0605047A	Contract Writing System	05	U	13,220	16,355	9,276
131	0605049A	Missile Warning System Modernization (MWSM)	05	U		27,571	
132	0605051A	Aircraft Survivability Development	05	U	18,425	24,900	38,225
133	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05	U	126,308	196,248	167,912
134	0605053A	Ground Robotics	05	U	25,131	35,319	28,378

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Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
135	0605054A	Emerging Technology Initiatives	05	U	212,750	201,274	164,734
136	0605143A	Biometrics Enabling Capability (BEC)	05	U	9,186		
137	0605144A	Next Generation Load Device - Medium	05	U	24,094	36,970	2,931
138	0605148A	Tactical Intel Targeting Access Node (TITAN) EMD	05	U	103,987	132,136	157,036
139	0605203A	Army System Development & Demonstration	05	U	143,616	81,657	
140	0605205A	Small Unmanned Aerial Vehicle (SUAV) (6.5)	05	U	6,292	31,284	37,876
141	0605206A	CI and HUMINT Equipment Program-Army (CIHEP-A)	05	U		2,170	1,296
142	0605216A	Joint Targeting Integrated Command and Coordination Suite (JTIC2S)	05	U		9,290	28,553
143	0605224A	Multi-Domain Intelligence	05	U	6,008	41,003	18,913
144	0605231A	Precision Strike Missile (PrSM)	05	U	250,034	272,786	184,046
145	0605232A	Hypersonics EMD	05	U	533,520	900,920	538,017
146	0605233A	Accessions Information Environment (AIE)	05	U	9,720	27,361	32,265
147	0605235A	Strategic Mid-Range Capability	05	U	4,833	348,855	182,823
148	0605236A	Integrated Tactical Communications	05	U	11,993	22,901	23,363
149	0605241A	Future Long Range Assault Aircraft Development	05	U			1,253,637
150	0605242A	Theater SIGINT System (TSIGS)	05	U			6,660
151	0605244A	Joint Reduced Range Rocket (JR3)	05	U			13,565
152	0605247A	Spectrum Situational Awareness System (S2AS)	05	U			9,330
153	0605450A	Joint Air-to-Ground Missile (JAGM)	05	U	2,280	3,014	3,030
154	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	U	245,791	284,095	602,045
155	0605531A	Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration	05	U	11,548	36,016	59,563
157	0605625A	Manned Ground Vehicle	05	U	519,131	996,653	504,841
158	0605766A	National Capabilities Integration (MIP)	05	U	16,790	15,129	16,565

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159	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Phase (EMD)	05	U	9,033	27,243	27,013
160	0605830A	Aviation Ground Support Equipment	05	U	2,851	1,167	979
161	0303032A	TROJAN - RH12	05	U	3,761	3,879	3,930
162	0303767A	AMBIT - Pre-Auctioned SRF	05	U	21,730		
163	0304270A	Electronic Warfare Development	05	U	97,616	137,186	131,096
999	999999999	Classified Programs	05	U			83,136
	System Development & Demonstration				**4,077,609**	**5,639,364**	**6,150,910**
164	0604256A	Threat Simulator Development	06	U	138,264	38,492	71,298
165	0604258A	Target Systems Development	06	U	53,434	11,873	15,788
166	0604759A	Major T&E Investment	06	U	144,173	76,167	78,613
167	0605103A	Rand Arroyo Center	06	U	30,800	37,078	38,122
168	0605301A	Army Kwajalein Atoll	06	U	297,859	314,872	321,755
169	0605326A	Concepts Experimentation Program	06	U	83,668	95,551	86,645
170	0605502A	Small Business Innovative Research	06	U	382,638		
171	0605601A	Army Test Ranges and Facilities	06	U	414,662	439,118	461,085
172	0605602A	Army Technical Test Instrumentation and Targets	06	U	72,760	42,220	75,591
173	0605604A	Survivability/Lethality Analysis	06	U	35,750	37,518	37,604
174	0605606A	Aircraft Certification	06	U	4,777	2,718	2,201
175	0605702A	Meteorological Support to RDT&E Activities	06	U	6,820		
176	0605706A	Materiel Systems Analysis	06	U	22,004	26,902	27,420
177	0605709A	Exploitation of Foreign Items	06	U	6,186	7,805	6,245
178	0605712A	Support of Operational Testing	06	U	69,879	75,133	76,088
179	0605716A	Army Evaluation Center	06	U	67,058	71,118	73,220

Department of the Army
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 2040A Research, Development, Test and Evaluation, Army

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
180	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	U	5,874	11,204	11,257
181	0605801A	Programwide Activities	06	U	88,780	93,895	91,895
182	0605803A	Technical Information Activities	06	U	36,821	31,327	32,385
183	0605805A	Munitions Standardization, Effectiveness and Safety	06	U	59,088	50,409	50,766
184	0605857A	Environmental Quality Technology Mgmt Support	06	U	1,842	1,629	1,659
185	0605898A	Army Direct Report Headquarters - R&D - MHA	06	U	53,003	55,843	59,727
186	0606002A	Ronald Reagan Ballistic Missile Defense Test Site	06	U	85,873	91,340	73,400
187	0606003A	CounterIntel and Human Intel Modernization	06	U	1,424	6,348	4,574
188	0606942A	Assessments and Evaluations Cyber Vulnerabilities	06	U	5,816	6,025	10,105
189	0909999A	Financing for Cancelled Account Adjustments	06	U	135		
	Management Support				**2,169,388**	**1,624,585**	**1,707,443**
190	0603778A	MLRS Product Improvement Program	07	U	17,790	14,465	14,188
191	0605024A	Anti-Tamper Technology Support	07	U	9,028	7,472	7,489
192	0607101A	Combating Weapons of Mass Destruction (CWMD) Product Improvement	07	U			271
193	0607131A	Weapons and Munitions Product Improvement Programs	07	U	54,216	8,425	9,363
194	0607136A	Blackhawk Product Improvement Program	07	U		1,507	25,000
195	0607137A	Chinook Product Improvement Program	07	U	65,596	9,265	4,816
196	0607139A	Improved Turbine Engine Program	07	U	219,713	201,247	67,029
197	0607142A	Aviation Rocket System Product Improvement and Development	07	U	10,899	3,014	
198	0607143A	Unmanned Aircraft System Universal Products	07	U	10,493	25,393	24,539
199	0607145A	Apache Future Development	07	U	26,607	10,547	8,243
200	0607148A	AN/TPQ-53 Counterfire Target Acquisition Radar System	07	U	59,312	54,167	53,652
201	0607150A	Intel Cyber Development	07	U	13,343	4,345	9,753

Department of the Army
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2024

Appropriation: 2040A Research, Development, Test and Evaluation, Army

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
202	0607312A	Army Operational Systems Development	07	U	26,131	19,000	
203	0607313A	Electronic Warfare Development	07	U	11,417	6,389	5,559
204	0607315A	Enduring Turbine Engines and Power Systems	07	U		2,411	2,620
206	0607665A	Family of Biometrics	07	U	1,073	797	590
207	0607865A	Patriot Product Improvement	07	U	146,753	177,197	168,458
208	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	U	18,606	42,177	27,582
209	0203735A	Combat Vehicle Improvement Programs	07	U	187,377	146,635	272,926
210	0203743A	155mm Self-Propelled Howitzer Improvements	07	U	112,257	122,902	55,205
211	0203752A	Aircraft Engine Component Improvement Program	07	U	148	146	142
212	0203758A	Digitization	07	U		1,515	1,562
213	0203801A	Missile/Air Defense Product Improvement Program	07	U	2,996	4,520	1,511
214	0203802A	Other Missile Product Improvement Programs	07	U	8,698	10,044	23,708
215	0205412A	Environmental Quality Technology - Operational System Dev	07	U	764	281	269
216	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	U	19,443	75,952	20,590
217	0208053A	Joint Tactical Ground System	07	U	8,813	203	
220	0303028A	Security and Intelligence Activities	07	U		301	
221	0303140A	Information Systems Security Program	07	U	15,554	15,323	15,733
222	0303141A	Global Combat Support System	07	U	21,775	13,082	2,566
223	0303142A	SATCOM Ground Environment (SPACE)	07	U	14,551	26,838	26,643
226	0305179A	Integrated Broadcast Service (IBS)	07	U	9,426	9,456	5,701
227	0305204A	Tactical Unmanned Aerial Vehicles	07	U	4,500		
228	0305206A	Airborne Reconnaissance Systems	07	U	6,402		
229	0305219A	MQ-1 Gray Eagle UAV	07	U		6,629	6,681

Department of the Army
FY 2025 President's Budget
Exhibit R-1 FY 2025 President's Budget
Total Obligational Authority

Mar 2024

(Dollars in Thousands)

Appropriation: 2040A Research, Development, Test and Evaluation, Army

Line No	Program Element Number	Item	Act	Sec	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
230	0708045A	End Item Industrial Preparedness Activities	07	U	128,617	75,317	67,187
999	999999999	Classified Programs	07	U	6,664	8,786	32,518
	Operational Systems Development				**1,238,962**	**1,105,748**	**962,094**
231	0608041A	Defensive CYBER - Software Prototype Development	08	U	92,460	83,570	74,548
	Software And Digital Technology Pilot Programs				**92,460**	**83,570**	**74,548**
232	0901560A	Continuing Resolution Programs	20	U		1,366,740	
	Undistributed					**1,366,740**	
Total Research, Development, Test and Evaluation, Army					**17,098,984**	**17,142,121**	**14,073,308**

*A full-year FY 2024 appropriation for this account was not enacted at the time the budget was prepared; account is operating under the Further Additional Continuing Appropriations and Other Extensions Act, 2024 (Public Law 118-35). The amounts included for FY 2024 reflect the annualized level provided by the continuing resolution.

*FY 2023 includes $7,626 thousand in Overseas Operations Costs (OOC) Actuals. FY 2024 includes $3,166 thousand in OOC Requested. FY 2025 includes $3,157 thousand for the OOC Budget Estimate. OOC were financed previously with former Overseas Contingengy Operations (OCO) funding.

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

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 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604760A *I Distributive Interactive Simulations (DIS) - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	7.890	8.802	8.914	-	8.914	7.766	7.850	7.935	8.015	0.000	57.172
C74: *Devel Simulation Tech*	-	0.985	1.031	1.043	-	1.043	1.044	1.056	1.067	1.078	0.000	7.304
C77: *Army Geospatial Data Master Plan*	-	0.547	1.137	1.157	-	1.157	-	-	-	-	0.000	2.841
C78: *One Semi-Automated Forces*	-	6.358	6.634	6.714	-	6.714	6.722	6.794	6.868	6.937	0.000	47.027

A. Mission Description and Budget Item Justification

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

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

Project C77, Army Geospatial Data Master Plan, focuses on activities that start with data acquisition from multiple sources and culminate in (1) accurate, robust and timely geospatial data and data management and (2) integration and conversion tools that support multiple battle command, training and mission-rehearsal applications. Project C77 continues development efforts associated with the Ground-Warfighter Geospatial Data Model (GGDM) and Geospatial Data Standards.

Project C78, One Semi-Automated Forces (OneSAF), develops and delivers a software application that represents activities of units and forces in simulation to support Army Training and Readiness. The application is used by Army agencies to support the concept evaluation, experimentation, materiel acquisition and training throughout the communities. The focus of this project is systems/software engineering and design for development and evolution of the architecture and software tools for a universal system of Army computer-generated forces -- OneSAF. OneSAF is a high fidelity brigade-and-below SAF that represents a full range of operations, systems and control processes in support of stand-alone and embedded training and Research, Development and Acquisition (RDA) simulation applications. OneSAF is fully interoperable with the Army's emerging virtual, live, and division-and-above constructive simulations and provides next-generation simulation products. OneSAF replaces a variety of legacy simulations used within the Army to support analytic and training simulation activities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604760A *I Distributive Interactive Simulations (DIS) - Eng Dev*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	8.189	8.802	8.621	-	8.621
Current President's Budget	7.890	8.802	8.914	-	8.914
Total Adjustments	-0.299	0.000	0.293	-	0.293
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.001	-			
• SBIR/STTR Transfer	-0.300	-			
• Adjustments to Budget Years	-	-	0.293	-	0.293

Change Summary Explanation

Increase in program funding due realignment of Army improved priorities for Army Geospatial Data Master Plan and reflects economic assumptions.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	Project (Number/Name) C74 / *Devel Simulation Tech*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
C74: *Devel Simulation Tech*	-	0.985	1.031	1.043	-	1.043	1.044	1.056	1.067	1.078	0.000	7.304
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project C74 funds the HQDA-chartered mission of the Simulation-to-Mission Command Interoperability (SIMCI) Overarching Integrated Product Team (OIPT) in support of Army Training and Readiness. The SIMCI OIPT mission is to provide policy recommendations to Army senior leadership to improve organizations by allowing Soldiers to fight in the same manner in which they train. This is accomplished by interoperability between Mission Command (MC) systems and the Modeling and Simulation (M&S) systems the Army uses to stimulate MC systems for training Soldiers and their Leaders. SIMCI also invests in targeted solutions to critical problem areas that exist between MC and Simulations.

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

FY 2025 base funding in the amount of $1.043 million continues progress with embedding simulation into Mission Command Systems, continues management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. It is focused first on reducing costs and improving capabilities in the areas of automating Operational Plans, Orders, and Reports in support of Army, Joint, and Coalition operations. Objectives are: identify and articulate to HQDA senior leadership specific standards that require Army-wide implementation; co-develop data standards, architecture standards, implementation specifications and Joint/Coalition products; continue transition of SIMCI knowledge and proof-of-principle products to Army and Joint acquisition programs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Program Management for the SIMCI Overarching Integrated Product Team (OIPT) Projects.	0.985	1.031	1.043
Description: Program Management of the SIMCI OIPT's Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. The OIPT consists of a Product Director, engineers, and finance personnel.			
FY 2024 Plans: Will continue management and support of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. Will continue focus			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C74 / *Devel Simulation Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
on gap-analysis of the current model and simulation programs and capabilities in the areas of Live, Virtual, and Constructive (LVC) simulations. This will support the Vice Chief of Staff of the Army's request to find redundancy within the Modeling and Simulation (M&S) community and reduce it. Objectives are to compare the current M&S capabilities with what will be required in the upcoming LVC-Information Assurance (LVC-IA) and Synthetic Environment (SE) environments. ***FY 2025 Plans:*** Will continue management and support of the SIMCI OIPT'S Army-wide collaborative, interoperability enhancement activities, including architecture alignment, data model alignment, common standards, components, and products. Will continue focus on gap-analysis of the current model and simulation programs and capabilities in the areas of Live, Virtual, and Constructive (LVC) simulations. This will support the Vice Chief of Staff of the Army's request to find redundancy within the Modeling and Simulation (M&S) community and reduce it. Objectives are to compare the current M&S capabilities with what will be required in the upcoming LVC-Integrating Architecture (LVC-IA) and Synthetic Environment (SE) environments. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Minor increase in funding from FY2024 to FY2025 is due to economic assumptions.			
Accomplishments/Planned Programs Subtotals	0.985	1.031	1.043

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

SIMCI uses other contract vehicles (internal/external) and awards money to work on specific technical projects. This provides the opportunity to leverage technical expertise from different agencies. SIMCI chooses projects that enhance current capabilities, closes the gaps of existing capabilities, and makes the determination for future projects that affect both the Mission Command and Live, Virtual, Constructive simulations environment. SIMCI only chooses those projects that meet specific requirements and criteria as stated above. It is one of SIMCI's missions to locate, utilize, or upgrade those projects or specific products that do just that.

D. Acquisition Strategy

SIMCI Overarching Integrated Product Team (OIPT) resources are allocated to multiple organizations in both the Mission Command (MC) and Modeling and Simulation (M&S) communities. The funds are contracted to execute approved functions and to projects that advance the efforts of SIMCI and components-based architecture alignment. Products developed transition to the lead or sponsor's program which then maintains the product for the cost savings of itself and other programs in both communities. The primary focus for these projects are the following: Embedded simulations with current Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) systems, gap-analysis for current simulations, and the proper implementation of Next-Generation modeling and simulation capabilities in regards to the Synthetic Training Environment (STE).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	Project (Number/Name) C74 / *Devel Simulation Tech*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI : Orlando, FL	10.843	0.140	Jan 2023	0.140	Jan 2024	0.140	Jan 2025	-		0.140	Continuing	Continuing	Continuing
		Subtotal	10.843	0.140		0.140		0.140		-		0.140	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SIMCI Program/OIPT Support	Various	Various : Various	9.280	0.820	Jan 2023	0.866	Jan 2024	0.878	Jan 2025	-		0.878	Continuing	Continuing	Continuing
Army Initialization Program and Technical Work Groups (TWG)	Various	Various : Various	0.791	0.025	Jan 2023	0.025	Jan 2024	0.025	Jan 2025	-		0.025	Continuing	Continuing	Continuing
		Subtotal	10.071	0.845		0.891		0.903		-		0.903	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.914	0.985		1.031		1.043		-		1.043	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C74 / *Devel Simulation Tech*

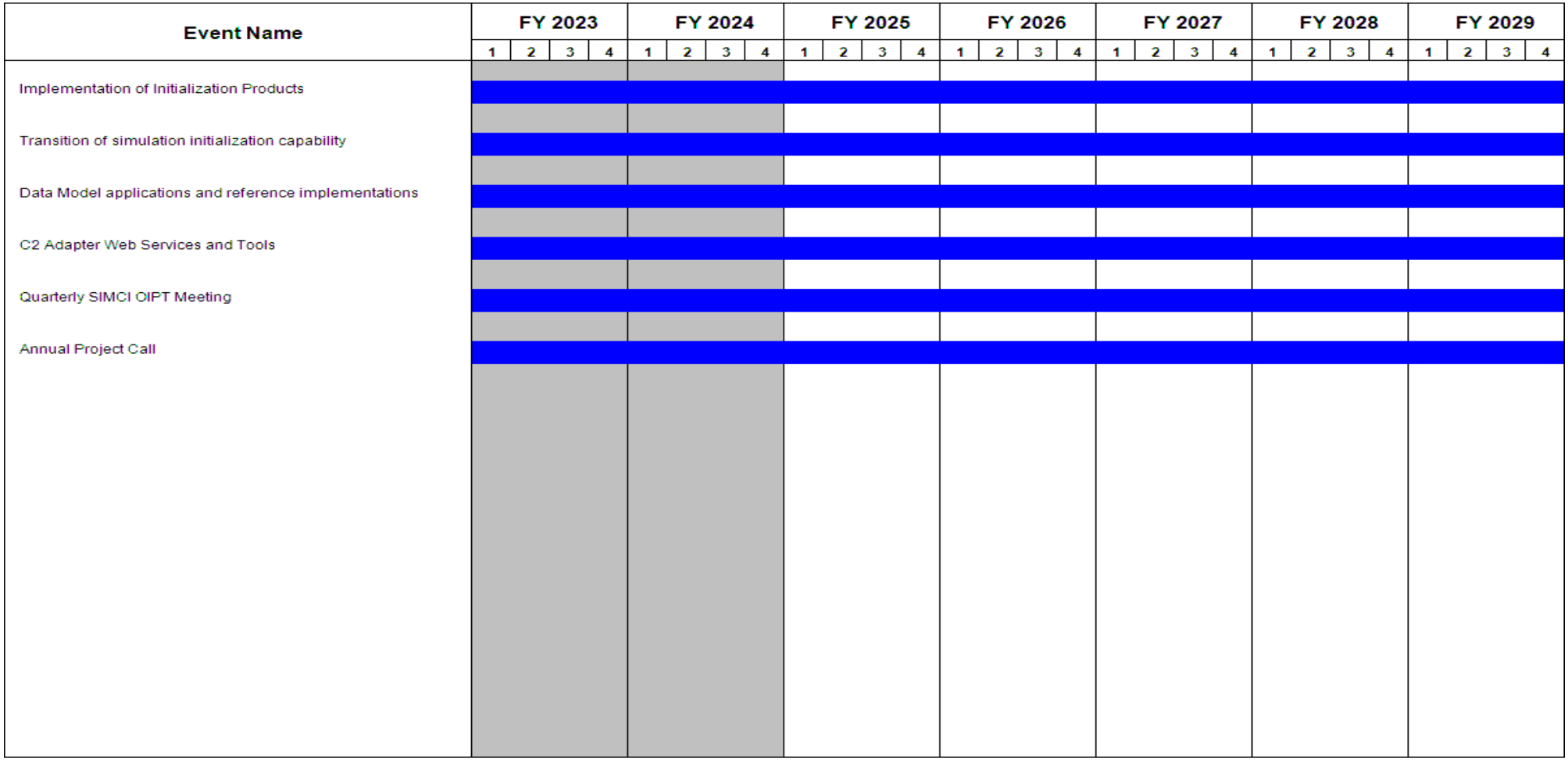

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C74 / *Devel Simulation Tech*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Implementation of Initialization Products	1	2010	4	2029
Transition of simulation initialization capability	1	2010	4	2029
Data Model applications and reference implementations	1	2010	4	2029
C2 Adapter Web Services and Tools	1	2010	4	2029
Quarterly SIMCI OIPT Meeting	1	2010	4	2029
Annual Project Call	1	2010	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	Project (Number/Name) C77 / *Army Geospatial Data Master Plan*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
C77: *Army Geospatial Data Master Plan*	-	0.547	1.137	1.157	-	1.157	-	-	-	-	0.000	2.841
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Army Geospatial Enterprise (AGE) provides the geospatial foundation, consisting of accurate, robust, and timely 2D and 3D geospatial data, robust tools and services, in support of mission command, intelligence, training, mission-rehearsal and other mission-applications. It addresses the implementation and acceleration of Army modernization objectives focused on enhancing situational awareness to the warfighter.

This effort provides a geospatial standards-based framework that enables the management, dissemination, and update of 2D and 3D geospatial data and services within the Army Geospatial Enterprise (AGE) across Mission Command, all Cross-Functional Team (CFT), and with our National and UAP partners ensuring a common operational picture enhancing soldier situational awareness and increasing mission success. Provides support to synthetic training environment, network and soldier lethality cross functional teams. Establishes a geospatial enterprise architecture framed around geospatial standards that enable address geospatial data, services, and application interoperability from National to tactical as required by as Department of Defense Instruction (DoDI) 5000.56, AR 525-95 - Army Geospatial-Intelligence and Geospatial Information and Services, Geospatial Annex to COE IP, Net-Enabled Mission Command ICD, OMB-Circular A-119 and A-130, the FY17 NDAA (National Defense Authorization Act), section 875, 10 U.S. Code 2223, Public Law 108-237, Standards Development Organization Advancement Action of 2004 and Public Law 108-113, National Technology Transfer and Advancement Act of 1995 and Public Law 82-436.

Key lines of effort include Ground-Warfighter Geospatial Data Model (GGDM), development and maintenance of geospatial Standards, and integration with the Army Modelling and Simulation Enterprise. FY 2025 funding in the amount of $1.157 million continues development efforts associated with the Ground-Warfighter Geospatial Data Model (GGDM) and integration with the Army Modelling and Simulation Enterprise.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Ground-Warfighter Geospatial Data Model (GGDM)	0.110	0.330	0.330
Description: The GGDM incorporates common data elements that conform to standards mandated by the Department of Defense Information Technology Standards Registry (DISR) for the National System for Geospatial Intelligence (NSG). Incorporating common geospatial data standards into the GGDM makes the Programs of Record (POR) consistent with new DISR-mandated geospatial intelligence standards for the NSG and ensures interoperability from National to Tactical. The implementation of GGDM across the Army increases system-interoperability at the geospatial data level. This effort includes the update and maintenance of the GGDM to enable interoperability in support of Army Modernization.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C77 / *Army Geospatial Data Master Plan*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue development of GGDMNext based upon GGDM assessment, emerging modernization requirements and changing technology (3D, AR and VR) and maintain capability to support current fielded systems. Includes additional revisions due to changes in the National System for Geospatial-Intelligence (NSG) Application Schema (NAS) as well as the National Geospatial-Intelligence Agency, USMC, and ABCANZ Allies. Update GGDM training classes to reflect changes to model and potential 3D capabilities. Ensure major Army PORs are implementing the GGDM (i.e., ISA and SECORE). ***FY 2025 Plans:*** Build on FY24 efforts and continue development of GGDMNext based upon GGDM assessment, emerging modernization requirements and changing technology (3D, AR and VR) and maintain capability to support current fielded systems. Includes additional revisions due to changes in the National System for Geospatial-Intelligence (NSG) Application Schema (NAS), alignment with Defence Geospatial Information Framework (DGIF) for interoperability with Coalition partners as well as the National Geospatial-Intelligence Agency, USMC, and ABCANZ Allies. Develop GGDM profiles to support optimized visualization (i.e. vector tiles) and analysis. Update GGDM training classes to reflect changes to model and potential 3D capabilities. Support majpr Army PORs and CFTs in implementing the GGDM.			
Title: Geospatial Data Standards ***Description:*** Army Geospatial Standards including data standards and standards for services to manage, process and disseminate and utilize geospatial data. Alignment of industry and Open geospatial standards from organizations such as the Open Geospatial Consortium (OGC) and others into the Army Geospatial Enterprise (AGE). This effort includes addressing high priority Army gaps in international consensus standards enabling interoperability across the National System for Geospatial Intelligence and our international partners and develops standards roadmap. ***FY 2024 Plans:*** Continue industry and other Government agencies collaboration to develop new geospatial data and services standards, DOD Profiles of these standards, and technology implementations of these standards. Focus will be on emerging modernization requirements and addressing high priority Army gaps enabling Army interoperability including maintaining standards support for existing fielded 2D systems and emerging 3D/AR/VR capabilities. Will continue to provide SME support on geospatial data and technology standards to Army PORs. Continue to utilize to perform integration of multiple geospatial standards (both 2D and 3D) in support of One World Terrain (OWT) and Integrated Visualization Augmentation System (IVAS) to support applications such as mission planning, mission rehearsal, and Army operations. The integration of 2D and 3D maps in Army systems will enable the soldier with cutting-edge geospatial capabilities and over match moving forward. ***FY 2025 Plans:*** Continue industry and other Government agencies collaboration to develop new geospatial data and services standards, DOD Profiles of these standards, and technology implementations of these standards and improve interoperability with Coalition	0.437	0.807	0.827

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C77 / *Army Geospatial Data Master Plan*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
partners. Focus will be on emerging modernization requirements and addressing high priority Army gaps enabling Army interoperability including maintaining standards support for existing fielded 2D systems and emerging 3D/AR/VR capabilities. Will continue to provide SME support on geospatial data and technology standards to Army PORs. Continue to utilize to perform integration of multiple geospatial standards (both 2D and 3D) in support of One World Terrain (OWT) and Integrated Visualization Augmentation System (IVAS) to support applications such as mission planning, mission rehearsal, and Army operations. The integration of 2D and 3D maps in Army systems will enable the soldier with cutting-edge geospatial capabilities and over match moving forward in support of HQDA EXORD 154-20 (Army 3D Geospatial Data Integration) and FRAGO1. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Minor increase in funding from FY2024 to FY2025 is due to economic assumptions.			
Accomplishments/Planned Programs Subtotals	0.547	1.137	1.157

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Resources are allocated to several critical geospatial projects in support of the Army Geospatial Data Integrated Master Plan (AGDIMP) and the Army Geospatial Enterprise (AGE).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C77 / *Army Geospatial Data Master Plan*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Geospatial Model and Data Standards	Various	TBD : TBD	14.002	0.547	Nov 2022	1.137	Nov 2023	1.157	Nov 2024	-		1.157	0.000	16.843	Continuing
		Subtotal	14.002	0.547		1.137		1.157		-		1.157	0.000	16.843	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.002	0.547		1.137		1.157		-		1.157	0.000	16.843	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C77 / *Army Geospatial Data Master Plan*

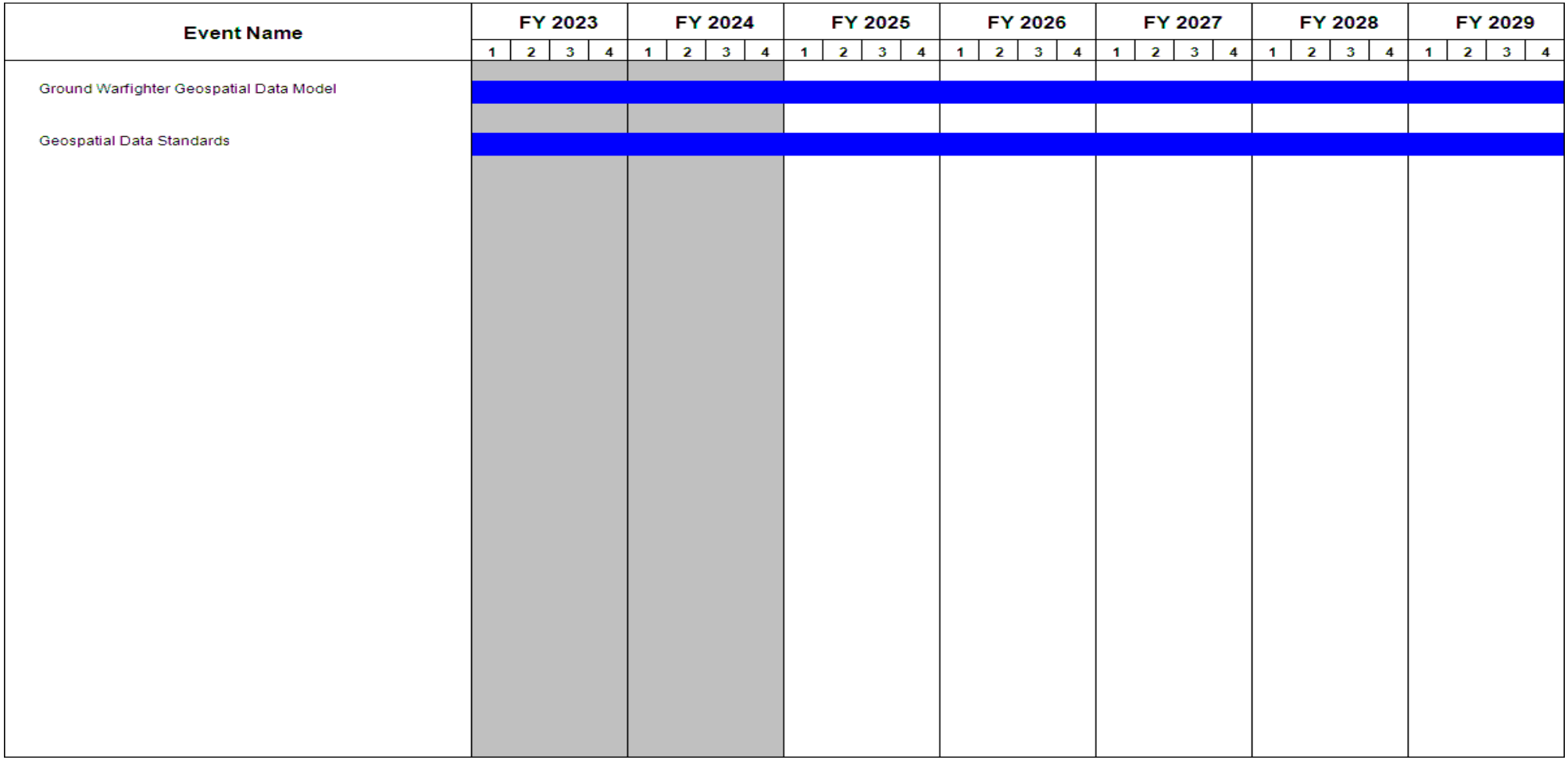

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C77 / *Army Geospatial Data Master Plan*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Ground Warfighter Geospatial Data Model	1	2010	4	2029
Geospatial Data Standards	1	2010	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	Project (Number/Name) C78 / *One Semi-Automated Forces*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
C78: *One Semi-Automated Forces*	-	6.358	6.634	6.714	-	6.714	6.722	6.794	6.868	6.937	0.000	47.027
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

FY 2025 base funding in the amount of $6.714 million allows for continued development of the software product line Prioritized Improvements. This funding also provides for the management of the infrastructure, equipment, laboratories, and processes needed to develop, test, and release the required product baseline.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Engineering and Manufacturing Development (EMD) phase contract activities for the One Semi-Automated Forces program. ***Description:*** Continue EMD phase contract activities for the OneSAF program.	5.008	-	-
Title: Government System Test and Evaluation for the One Semi-Automated Forces (OneSAF) program. ***Description:*** Government System Test and Evaluation for the OneSAF program. ***FY 2024 Plans:*** Will provide for software, test, integration and release for Version 13.0. Will provide support to the user community experiments, analyses, and validation events for integration into the Home Station Training Federation, Network Integration Events (NIE), Battle Lab Collaborative Simulation Environment (BLCSE), Entity Simulation Service (ESS) in support of Joint Land Component Constructive Training Capability (JLCCTC), and other Live, Virtual and Constructive (LVC) applications. ***FY 2025 Plans:*** Will provide for software, test, integration and release for Version 12.2 (Note: FY 2024 release of V13.0 is renamed to V12.1 but prior years are locked). Will provide support to the user community experiments, analyses, and validation events for integration into the Home Station Training Federation, Network Integration Events (NIE), Battle Lab Collaborative Simulation Environment	1.050	1.050	1.050

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C78 / *One Semi-Automated Forces*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
(BLCSE), Entity Simulation Service (ESS) in support of Joint Land Component Constructive Training Capability (JLCCTC), and other Live, Virtual and Constructive (LVC) applications.			
Title: Government Program Management for the One Semi-Automated Forces (OneSAF) program. ***Description:*** Government Program Management for the One Semi-Automated Forces (OneSAF) program. ***FY 2024 Plans:*** Will provide a portion of program management, engineering and technical oversight, contract support, and travel for support of site surveys and Subject Matter Experts for the development of OneSAF. ***FY 2025 Plans:*** Will provide a portion of program management, engineering and technical oversight, contract support, and travel for support of site surveys and Subject Matter Experts for the development of OneSAF.	0.300	0.300	0.300
Title: Software Engineering activities for the One Semi-Automated Forces Program ***Description:*** Continue development activities for the OneSAF program. ***FY 2024 Plans:*** Will continue the development of software capabilities and prioritized improvements. Will continue the software development of functionality that enhances architectural services, components, synthetic environment and infrastructure of the OneSAF Product Line and will provide for software integration, test and release of required software refreshes and Version 13.0. ***FY 2025 Plans:*** Will continue the development of software capabilities and prioritized improvements. Will continue the software development of functionality that enhances architectural services, components, synthetic environment and infrastructure of the OneSAF Product Line and will provide for software integration, test and release of required software refreshes and Version 12.2 (Note: Version 12.2 was previously titled Version 14.0 and FY 2024 Version 13.0 is now known as Version 12.1) ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY2024 to FY2025 funding is due to economic assumptions.	-	5.284	5.364
Accomplishments/Planned Programs Subtotals	6.358	6.634	6.714

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C78 / *One Semi-Automated Forces*

D. Acquisition Strategy

OneSAF manages two Task Orders under one Indefinite Delivery/Indefinite Quantity (ID/IQ) Production and Support contract. The Task Order for support includes Program Management; Development and Customer support; Training; Travel and Other Direct Costs (ODC). The Task Order for Production includes Capability Improvements; Tailored Product Baseline Release; Capability Concurrence; and Integration, Test, and Release. The OneSAF Production and Support contract is tailored to fully serve the current and evolving needs of the user community.

The enhancements will be executed within the development line as modifications to the released baseline via Engineering Change Proposals (ECPs); Change Requests (CRs); and correction of deficiencies identified as Problem Test Reports (PTRs) and Deficiency Reports (DRs) by the user community.

In FY 2025, the program will continue with yearly releases of the OneSAF Software versions containing performance enhancements resulting from the development and integration of Prioritized Improvements, concurrency enhancements, user feedback, corrections of deficiencies identified as Problem Test Reports (PTR) and Deficiency Reports (DR) and Co-Developers handovers. The OneSAF program will continue to manage the single award contract for the continuing development and maintenance of the software baseline as well as continue to manage the Integrated Development Environment (IDE).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	Project (Number/Name) C78 / *One Semi-Automated Forces*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI, Orlando, FL : Various	29.801	0.300	Oct 2022	0.300	Oct 2023	0.300	Oct 2024	-		0.300	Continuing	Continuing	Continuing
		Subtotal	29.801	0.300		0.300		0.300		-		0.300	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	Riptide : Orlando, FL	23.465	4.583	Dec 2022	4.859	Oct 2023	4.939	Dec 2024	-		4.939	Continuing	Continuing	Continuing
		Subtotal	23.465	4.583		4.859		4.939		-		4.939	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Domain Analysis	Various	Various : Various	6.789	0.125	Dec 2022	0.125	Oct 2023	0.125	Dec 2024	-		0.125	Continuing	Continuing	Continuing
Architecture Engr & Tech Spt	SS/FP	MITRE FFRDC : Aberdeen Proving Ground, MD	6.923	0.300	Dec 2022	0.300	Oct 2023	0.300	Dec 2024	-		0.300	Continuing	Continuing	Continuing
		Subtotal	13.712	0.425		0.425		0.425		-		0.425	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OneSAF Integration, Evaluation and Test	Various	Various : Various	17.194	0.875	Dec 2022	0.875	Oct 2023	0.875	Dec 2024	-		0.875	Continuing	Continuing	Continuing
OneSAF Verification, Validation & Accreditation	Various	Various : Various	8.151	0.175	Dec 2022	0.175	Oct 2023	0.175	Dec 2024	-		0.175	Continuing	Continuing	Continuing
		Subtotal	25.345	1.050		1.050		1.050		-		1.050	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	Project (Number/Name) C78 / *One Semi-Automated Forces*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	92.323	6.358		6.634		6.714		-		6.714	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C78 / *One Semi-Automated Forces*

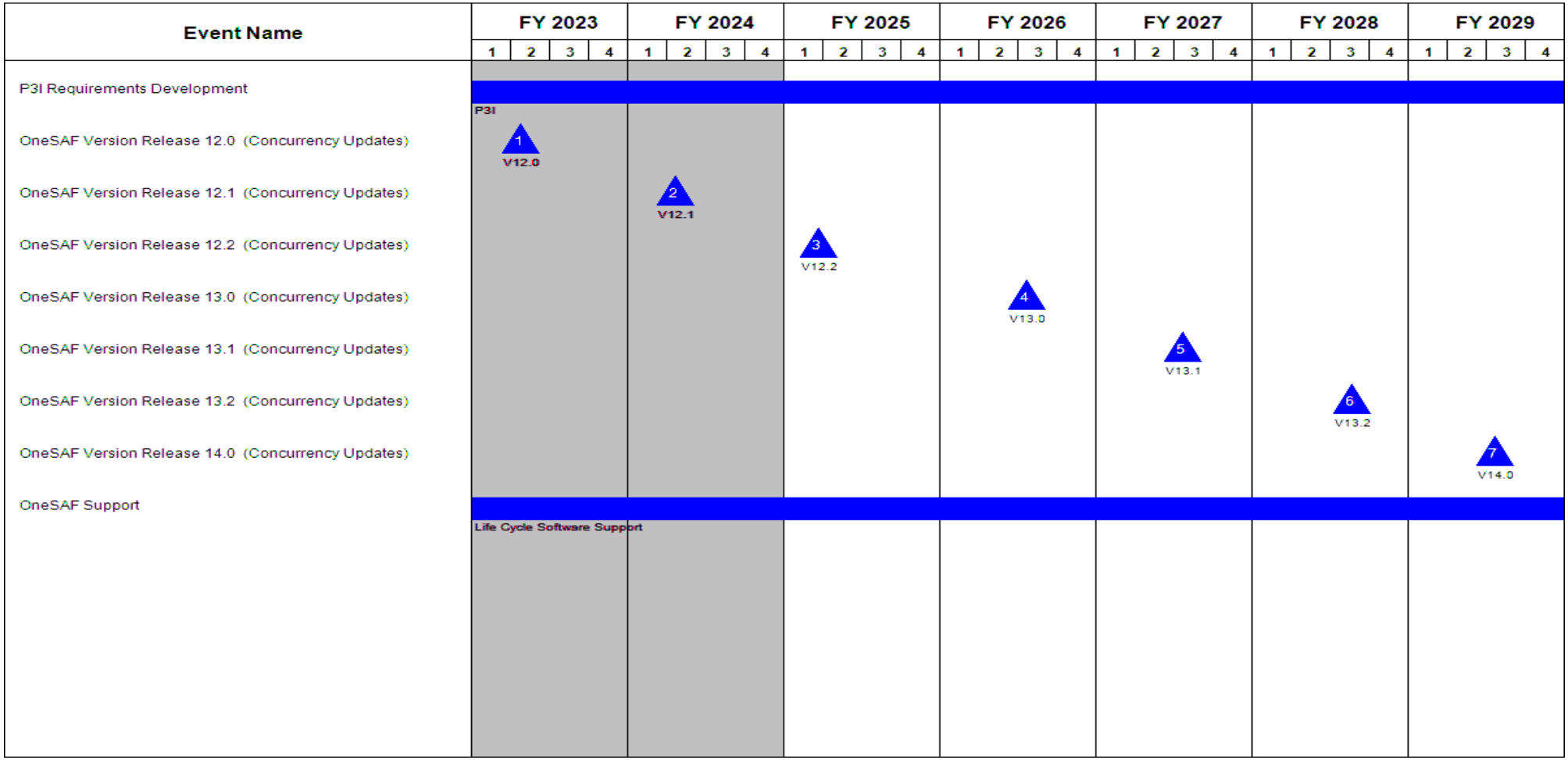

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604760A / *Distributive Interactive Simulations (DIS) - Eng Dev*	**Project (Number/Name)** C78 / *One Semi-Automated Forces*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
P3I Requirements Development	1	2006	4	2029
OneSAF Version Release 9.0 (Concurrency Updates)	2	2020	2	2020
OneSAF Version Release 10.0 (Concurrency Updates)	2	2021	2	2021
OneSAF Version Release 11.0 (Concurrency Updates)	2	2022	2	2022
OneSAF Version Release 12.0 (Concurrency Updates)	2	2023	2	2023
OneSAF Version Release 12.1 (Concurrency Updates)	2	2024	2	2024
OneSAF Version Release 12.2 (Concurrency Updates)	1	2025	1	2025
OneSAF Version Release 13.0 (Concurrency Updates)	3	2026	3	2026
OneSAF Version Release 13.1 (Concurrency Updates)	3	2027	3	2027
OneSAF Version Release 13.2 (Concurrency Updates)	3	2028	3	2028
OneSAF Version Release 14.0 (Concurrency Updates)	3	2029	3	2029
OneSAF Support	1	2006	4	2029

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604798A *I Brigade Analysis, Integration and Evaluation*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	22.207	20.828	26.352	-	26.352	26.056	26.160	26.362	26.575	0.000	174.540
DY7: *Army Systems Engineering, Architecture & Analysis*	-	22.207	20.828	26.352	-	26.352	26.056	26.160	26.362	26.575	0.000	174.540

A. Mission Description and Budget Item Justification

This program element is comprised of three projects: Army Systems Engineering, Architecture & Analysis; Army Integration Management & Coordination; and Emerging Technology Initiatives. The specific evaluation requirements will support Mission Command Network (MCN) 2020, the Force 2025 objectives, and emerging technology insertion.

Project DY7: Provides the Army's leadership and materiel developers with the necessary software modernization planning, System of Systems (SoS) engineering and analysis, technical risk analysis, architectural products, critical path analysis, cybersecurity and interoperability risk analysis and the associated mitigation planning for the Army's materiel portfolio. This project develops process, products, and policies that ensure a solid Army Systems Engineering construct across Army Program Executive and Management Offices. This includes efforts in support of Common Operating Environment (COE) governance, implementation of Continuous Integration/ Continuous Delivery (CI/CD) to modernize, and streamline and accelerate the software acquisition process, to include streamlining and modernizing the Army Futures Command's processes using broad Capabilities Needs Statements (CNS) for development of concepts, requirements generation, resource allocation, experimentation, acquisition, logistics, and technology components of the Army Future Force Modernization Enterprise (FFME). Focus areas includes the integration of continuous Soldier feedback of a system into one overall flexible system engineering construct and managing it through adaptable system engineering activities to include implementing a CI/CD model for software to ensure the continuous fielding of integrated capabilities meet the minimal viable products that address mission needs of the force against any potential adversaries. Key adaptable system engineering functions include, engineering and technical analysis, integrated System of Systems (SoS) architecture products, SoS risk analysis and mitigation planning to influence the Army's materiel portfolio to read a minimal viable product for rapid fielding . This project also includes the establishment of Army systems engineering policy and implementation standards, alignment to a CI/CD model, and resource and acquisition synchronization to address cross- portfolio issues. Key CI/CD functions include digital transformation functions include using a unified data reference architecture to enable decision dominance, analysis and mitigation planning to remove institutional barriers preventing CI/CD and delivering software that is flexible and secure by design using modern software practices. Key tasks are the development of integrated Architecture products; Engineering Analysis and Design; Portfolio Analysis; Systems Security Engineering process, interoperability assessments, independent technical risk assessments, Cybersecurity requirements analysis, compliance, Cyber policy assessments, and coordinates the ASA(ALT) community's Data activities including Data Steward and Functional Data Manager in Army Data Governance Forums.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604798A *I Brigade Analysis, Integration and Evaluation*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	21.086	20.828	21.303	-	21.303
Current President's Budget	22.207	20.828	26.352	-	26.352
Total Adjustments	1.121	0.000	5.049	-	5.049
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.890	-			
• SBIR/STTR Transfer	-0.769	-			
• Adjustments to Budget Years	-	-	5.049	-	5.049

Change Summary Explanation

Increased funding to support cyber resiliency mitigations associated with identified vulnerabilities in weapon systems.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*				Project (Number/Name) DY7 / *Army Systems Engineering, Architecture & Analysis*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
DY7: *Army Systems Engineering, Architecture & Analysis*	-	22.207	20.828	26.352	-	26.352	26.056	26.160	26.362	26.575	0.000	174.540
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Synthesizing Systems Engineering Governance across the Program Executive Offices (PEOs) in support of the Assistant Secretary of the Army (Acquisition, Logistics and Technology)'s (ASA(ALT)) Mission.

The Army has been evolving the need for integrated Data, Engineering, and Software focused on the adjustment of modernization planning by implementing a CI/CD model, adaptable and flexible System of Systems (SoS) engineering and analysis, technical risk analysis that help field the minimal viable products, architectural products, critical path analysis, cybersecurity and interoperability risk analysis and the associated mitigation planning for the Army's materiel portfolio. This includes efforts in support of Common Operating Environment (COE) governance, support of digital transformation considerations in the area of digital engineering, data architecture and modern software practices, the integration of key elements of a system into one overall system engineering construct and managing it through major system engineering activities to ensure the fielding of integrated capabilities meet the mission needs of the force against any potential adversaries. Key system engineering functions include, flexible and adaptable engineering and technical analysis, integrated System of Systems (SoS) architecture products, SoS risk analysis and mitigation planning to influence the Army's materiel portfolio. This also includes the establishment of Army systems engineering policy and implementation standards, requirements decomposition and alignment to a CI/CD model, and resource and acquisition synchronization to address cross-portfolio issues. Key CI/CD functions include digital transformation functions include using a unified data reference architecture to enable decision dominance, analysis and mitigation planning to remove institutional barriers preventing CI/CD and delivering software that is flexible and secure by design using modern software practices. Key tasks are the development of integrated Architecture products; Engineering Analysis and Design; Portfolio Analysis; Systems Security Engineering process, interoperability assessments, independent technical risk assessments, Cybersecurity requirements analysis, Cyber policy assessments, and coordinates the ASA(ALT) community's Data activities including Data Steward and Functional Data Manager in Army Data Governance Forums.

As the Army undergoes digital transformation, data-centricity through data mesh becomes the backbone of communication on the battlefield; modernized software practices enables, accelerates, and streamlines all battlefield capabilities; and digital engineering ensures integration across products and ease of updates as requirements and technologies change. The Office of the Chief Systems Engineer (OCSE), newly known as the Deputy Assistant Secretary of the Army - Data, Engineering and Software DASA(DES) has begun to transform and will lead development of unified, government-owned data architectures that will govern acquisition of data centric capabilities to enable Commanders with the data they need, when they need it, enabling decision dominance and prevent vendor lock. These programs to implement modern software techniques, such as agile software development and Development, Security, and Operations (DevSecOps), resulting in better, faster, more cyber secure capability. ASA(ALT) will also lead Digital Engineering, a holistic approach to complex system design that leverages models, data, and modern software practices for Army acquisition programs to revamp how ASA(ALT) approaches software, data architecture, and product development.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

This Project catalyzes, coordinates and integrates data, engineering, and modern software practices throughout a program's life cycle during the acquisition process.This Project will ensure data, engineering, and modern software practices is prioritized and properly implemented by ASA(ALT) Programs of Record. Implementation utilizes modern techniques and leverages open systems architectures concepts in order to ensure rapid, optimal, and secure product delivery into the hands of users.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Systems Engineering Governance	6.333	6.108	6.108
FY 2024 Plans: This Project leads critical resources, tools, and solutions for ASA(ALT) to modernize software acquisition, lead digital engineering, provide oversight of Title X systems engineering functions, and implement software, data, cyber, and engineering governance to improve product delivery and cyber operational readiness for fielded systems. Additionally, has influence over program budgets for acquisition programs of record. General Officer (GO) / SES collaboration is required with key stakeholders across the Army, OSD, and other services, including the U.S. Army Training and Doctrine Command (TRADOC); U.S. Army Futures Command(AFC); Chief Information Officer (CIO); U.S. Army Test and Evaluation Command (ATEC); Deputy Chief of Staff, G-3; Deputy Chief of Staff, G-6; Deputy Chief of Staff, G-2; Army Cyber Command; and U.S. Army Program Executive Officers. The execution of these duties will ultimately change the way the Army delivers capabilities to Soldiers. This Project as full line authority from the Assistant Secretary of the Army (Acquisition, Logistics and Technology). This Project also provides for systems engineering efforts that enable the Army's leadership and materiel developers with the necessary modernization planning, System of Systems (SoS) engineering and analysis, technical risk analysis, architectural products, critical path analysis, cybersecurity and interoperability risk analysis and the associated mitigation planning for the Army's materiel portfolio. This Project develops process, products, and policies that ensure a solid Army Systems Engineering construct across Army Program Executive and Management Offices. This Project includes specific efforts in support of the Army's Data plan that has lines of effort working towards the Joint All Domain Command and Control (JADC2) concept via Data, Systems Engineering, and Software governance, emerging Multi-Domain Operations (MDO) concepts requirements generation, resource allocation, experimentation, acquisition, logistics, and technology components of the Army's Modernization Strategy. Focus areas includes the integration of key elements of a system into one overall system engineering construct and managing it through major system engineering activities to ensure the fielding of integrated capabilities meet the mission needs of the force against any potential adversaries. Key system engineering functions include, engineering and technical risk analysis, establishment of Army Data, systems engineering, and software policy and implementation standards, requirements decomposition and alignment, and resource and acquisition synchronization to address cross-portfolio issues. Key tasks are t to enable the adoption of modern software practices (i.e. DevSecOps, Agile software development...), perform Portfolio Analysis and Software support; execute Systems Security Engineering processes, perform interoperability assessments, perform independent risk assessments, perform Cybersecurity requirements analysis, compliance, Cyber policy assessments, and coordinates the ASA(ALT) community's Data activities including Data Steward and Functional Data Manager in Army Data Governance Forums.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The effort includes costs for labor (Government and contractor), support services, travel, training, supplies, facilities, and Information Technology (IT) support for the DASA(DES) Data, Engineering, and Software. This Project also includes support to other Department of Defense (DOD) and international agencies for joint programs and collaboration effort. Major Responsibilities This Project is responsible for ensuring that digital transformation program support considerations, , including digital engineering, data architecture and modern software practices, are integrated into all Army acquisition programs throughout their lifecycle. Specifically, areas that fall fall under this responsibility for the following areas of concentration. Data Architecture Development, Implementation and Integration - Ensure programs develop data architectures, and that they integrate resulting in a holistic data solution within and across tactical and enterprise domains. This data architecture will govern acquisition of data-centric capabilities and reduce the current complexity. It will flatten the Army's data architecture across its echelons for effective and efficient data-driven decision-making as envisioned by Joint All Domain Command and Control (JADC2) and the Army's multi-domain operations (MDO) concept and supporting doctrine.Software Development Acquisition Support and Oversight - Ensure programs implement agile software development and DevSecOps to deliver better capability faster. These modern practices will increase speed, quality, and security of software, while ensuring stakeholder transparency and involvement throughout the development process to deliver the best capability incrementally with rapid feedback from the field. ASA(ALT) is leading the shift to Agile and DevSecOps across the PEOs, as well as, coordinating across the operational, test, and requirements communities to drive culture changes to achieve the goal of Agile and DevSecOps by influencing organizational changes, transformation to a digital workforce, a shift to soldier-centricity in the requirements & development processes, reimagining of current testing & cybersecurity constructs, updating contracting & funding strategies and focus on the intersection of software and data via data centricity. Digital Engineering Policy and Implementation Guidance - Ensure programs implement sound digital engineering practices that enable sharing of data across the Acquisition enterprise. This will be achieved by establishing foundational capabilities and support mechanisms for programs who need a starting point, building on foundations with uniform guidance about how to perform a model-based acquisition, and reaching a state where all our programs are implementing a model-based acquisition and we're assessing program performance using the modeling environment. Independent Technical Risk Assessments (ITRA) - Conduct ITRAs for Major Defense Acquisition Programs (MDAPs). Modular Open Systems Approach (MOSA). Ensure MOSA is implemented in Army Acquisition programs to maximize interoperability, simplify technology refresh, and eliminate vendor lock.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Systems Engineering and Program Support - Advise programs on statutory and regulatory requirements in support of acquisition milestone decisions. Cyber Policy and Oversight - Ensure threat-informed cyber hardening of programs to prevent compromise of critical, sensitive data. ***FY 2025 Plans:*** This Project leads critical resources, tools, and solutions for ASA(ALT) to modernize software acquisition, lead digital engineering, provide oversight of Title X systems engineering functions, and implement software, data, cyber, and engineering governance to improve product delivery and cyber operational readiness for fielded systems. Additionally, has influence over program budgets for acquisition programs of record. General Officer (GO) / SES collaboration is required with key stakeholders across the Army, OSD, and other services, including the U.S. Army Training and Doctrine Command (TRADOC); U.S. Army Futures Command(AFC); Chief Information Officer (CIO); U.S. Army Test and Evaluation Command (ATEC); Deputy Chief of Staff, G-3; Deputy Chief of Staff, G-6; Deputy Chief of Staff, G-2; Army Cyber Command; and U.S. Army Program Executive Officers. The execution of these duties will ultimately change the way the Army delivers capabilities to Soldiers. This Project as full line authority from the Assistant Secretary of the Army (Acquisition, Logistics and Technology). This Project also provides for systems engineering efforts that enable the Army's leadership and materiel developers with the necessary modernization planning, System of Systems (SoS) engineering and analysis, technical risk analysis, architectural products, critical path analysis, cybersecurity and interoperability risk analysis and the associated mitigation planning for the Army's materiel portfolio. This Project develops process, products, and policies that ensure a solid Army Systems Engineering construct across Army Program Executive and Management Offices. This Project includes specific efforts in support of the Army's Data plan that has lines of effort working towards the Joint All Domain Command and Control (JADC2) concept via Data, Systems Engineering, and Software governance, emerging Multi-Domain Operations (MDO) concepts requirements generation, resource allocation, experimentation, acquisition, logistics, and technology components of the Army's Modernization Strategy. Focus areas includes the integration of key elements of a system into one overall system engineering construct and managing it through major system engineering activities to ensure the fielding of integrated capabilities meet the mission needs of the force against any potential adversaries. Key system engineering functions include, engineering and technical risk analysis, establishment of Army Data, systems engineering, and software policy and implementation standards, requirements decomposition and alignment, and resource and acquisition synchronization to address cross-portfolio issues. Key tasks are t to enable the adoption of modern software practices (i.e. DevSecOps, Agile software development...), perform Portfolio Analysis and Software support; execute Systems Security Engineering processes, perform interoperability assessments, perform independent risk assessments, perform Cybersecurity requirements analysis, compliance,			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Cyber policy assessments, and coordinates the ASA(ALT) community's Data activities including Data Steward and Functional Data Manager in Army Data Governance Forums. The effort includes costs for labor (Government and contractor), support services, travel, training, supplies, facilities, and Information Technology (IT) support for the DASA(DES) Data, Engineering, and Software. This Project also includes support to other Department of Defense (DOD) and international agencies for joint programs and collaboration effort. Major Responsibilities: This Project is responsible for ensuring that digital transformation program support considerations, including digital engineering, data architecture and modern software practices, are integrated into all Army acquisition programs throughout their lifecycle. Specifically, areas that fall fall under this responsibility for the following areas of concentration. Data Architecture Development, Implementation and Integration - Drive, influence and support programs develop data architectures, and that they integrate resulting in a holistic data solution within and across tactical and enterprise domains. This data architecture will govern acquisition of data-centric capabilities and reduce the current complexity. It will flatten the Army's data architecture across its echelons for effective and efficient data-driven decision-making as envisioned by Joint All Domain Command and Control (JADC2) and the Army's multi-domain operations (MDO) concept and supporting doctrine. Software Development Acquisition Support and Oversight - Ensure programs implement agile software development and DevSecOps to deliver better capability faster. These modern practices will increase speed, quality, and security of software, while ensuring stakeholder transparency and involvement throughout the development process to deliver the best capability incrementally with rapid feedback from the field. ASA(ALT) is leading the shift to Agile and DevSecOps across the PEOs, as well as, coordinating across the operational, test, and requirements communities to drive culture changes to achieve the goal of Agile and DevSecOps by influencing organizational changes, transformation to a digital workforce, a shift to soldier-centricity in the requirements & development processes, reimagining of current testing & cybersecurity constructs, updating contracting & funding strategies and focus on the intersection of software and data via data centricity. Digital Engineering Policy and Implementation Guidance - Influence and support programs implement sound digital engineering practices that enable sharing of data across the Acquisition enterprise. This will be achieved by establishing foundational capabilities and support mechanisms for programs who need a starting point, building on foundations with uniform guidance about how to perform a model-based acquisition, and reaching a state where all our programs are implementing a model-based acquisition and we're assessing program performance using the modeling environment. Independent Technical Risk Assessments (ITRA) - Conduct ITRAs for Major Defense Acquisition Programs (MDAPs).			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Modular Open Systems Approach (MOSA). Influence MOSA is implemented in Army Acquisition programs to maximize interoperability, simplify technology refresh, and eliminate vendor lock. Systems Engineering and Program Support - Advise programs on statutory and regulatory requirements in support of acquisition milestone decisions. Cyber Policy and Oversight - Ensure threat-informed cyber hardening of programs to prevent compromise of critical, sensitive data.			
Title: Engineering Support & Services ***FY 2024 Plans:*** This Project supports the ASA(ALT) Data Steward and performs the duties as the Functional Data Manager in Army Data Environment Governance Forums including the Army Data Board (ADB), Army Analytics Board (AAB) and JADC2 Working Groups. In addition to representing the ASA(ALT) in Army data forums improving the ASA(ALT) data environment through the establishment of governance forums, standards, policies and implementation guides in order to facilitate rapid and relevant acquisition, logistics and technology decisions. Continuous maturation of Acquisition, Logistics and Technology Domain data ensures that data is available for successful integration and support of product and program life-cycle requirements, additive and advanced manufacturing, DE, product/technical data, intellectual property management, modular open systems approach and other DoD and Army initiatives. This Project will advance the state of practice of DE across the ASA(ALT) community. This work will also seek to streamline communications between Government and Industry by identification of technical data and emphasis of appropriate implementation of technical data rights. Through the implementation of DE, coordination with Program Office are underway to institutionalize modern engineering processes and integrate those processes through the engineering data they produce in order to establish and maintain traceability from the activities that drive system concept development through system acquisition, fielding, and sustainment to the decision to divest. The Army's DE implementation will establish a workforce equipped with the necessary skills and infrastructure to achieve this goal. To further the Army's modernization efforts, synchronization with the Army's Modeling and Simulation (M&S) Strategy with OSD's DE Strategy will focus current and emerging efforts on the efficient development and use of M&S and MBSE capabilities in order to advance the Army's system development efforts.	6.663	6.497	6.497

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
This Project has developed a roadmap for the digital transformation of the ASA(ALT) and has begun executing against that plan through the execution of data analytic use cases which delivers incremental value to the ASA(ALT) and the Army at large. To enable digital transformation, this project will develop playbooks for ASA(ALT) programs to leverage as they digitally transform. These playbooks will provide practical examples of how to plan, execute, monitor, and report on programs using modern practices to be applied to existing and future program. This will lower the barrier to entry for those whom are not experienced in modern practices. This project will provide and execute a framework to effectivity digitally transform programs and provide expertise to help with the transformation in the areas of requirements, contracting, testing, cybersecurity and fielding & operations. THIS PROJECT will continue to transform the ASA(ALT)'s business processes in support of its digital and data centric transformation. This Project will enable the Acquisition lead for the implementation of Digital Engineering. ASA (ALT) has developed a Vision for DE and initiated the development and publication of a DE Policy and DE Implementation Guidance that is aligned with the DoD DE Strategy. This Project will enable representation Army Acquisition in OSD DE forums and is the point of contact within the Army for the governance and processes required for the execution of NDAA, DoD, and Army mandates that involve systems and DE. Army collaboration with OSD for systems and DE issues and identifies and advocates for Army equities during the establishment and implementation of DoD policy involving systems engineering. This Project will execute the responsibility for leading a Digital Thread Operational Integrated Product Team (OIPT) with members from across the Army in order to develop the requirement for the Digital Thread in support of the Army modernization. The Digital Thread is a framework that will provide a means to integrate digital artifacts across organizational boundaries and establishes traceability from initial concept through a fielded and supported piece of equipment and system. This Project enables representation by the Acquisition Community at the Army M&S General Officer Steering Committee (GOSC), Council of Colonels (CoC), and other M&S forums. THIS PROJECT provides guidance to PEOs and PMs to plan for the integrated use of M&S throughout the acquisition lifecycle and coordinates M&S activities within the Army Acquisition Community. ***FY 2025 Plans:*** This Project supports the ASA(ALT) Data Steward and performs the duties as the Functional Data Manager in Army Data Environment. Governance Forums including the Army Data Board (ADB), Army Analytics Board (AAB) and JADC2 Working Groups. In addition to representing the ASA(ALT) in Army data forums improving the ASA(ALT) data environment through the establishment of governance forums, standards, policies and implementation guides in order to facilitate rapid and relevant acquisition, logistics and technology decisions. Continuous maturation of Acquisition, Logistics and Technology Domain data ensures that data is available for successful integration and support of product and program life-cycle requirements, additive and advanced			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
manufacturing, DE, product/technical data, intellectual property management, modular open systems approach and other DoD and Army initiatives. This Project will advance the state of practice of DE across the ASA(ALT) community. This work will also seek to streamline communications between Government and Industry by identification of technical data and emphasis of appropriate implementation of technical data rights. Through the implementation of DE, coordination with Program Office are underway to institutionalize modern engineering processes and integrate those processes through the engineering data they produce in order to establish and maintain traceability from the activities that drive system concept development through system acquisition, fielding, and sustainment to the decision to divest. The Army's DE implementation will establish a workforce equipped with the necessary skills and infrastructure to achieve this goal. To further the Army's modernization efforts, synchronization with the Army's Modeling and Simulation (M&S) Strategy with OSD's DE Strategy will focus current and emerging efforts on the efficient development and use of M&S and MBSE capabilities in order to advance the Army's system development efforts. This Project has developed a roadmap for the digital transformation of the ASA(ALT) and has begun executing against that plan through the execution of data analytic use cases which delivers incremental value to the ASA(ALT) and the Army at large. To enable digital transformation, this project will develop playbooks for ASA(ALT) programs to leverage as they digitally transform. These playbooks will provide practical examples of how to plan, execute, monitor, and report on programs using modern practices to be applied to existing and future program. This will lower the barrier to entry for those whom are not experienced in modern practices. This project will provide and execute a framework to effectivity digitally transform programs and provide expertise to help with the transformation in the areas of requirements, contracting, testing, cybersecurity and fielding & operations. THIS PROJECT will continue to transform the ASA(ALT)'s business processes in support of its digital and data centric transformation. This Project will enable the Acquisition lead for the implementation of Digital Engineering. ASA (ALT) has developed a Vision for DE and initiated the development and publication of a DE Policy and DE Implementation Guidance that is aligned with the DoD DE Strategy. This Project will enable representation Army Acquisition in OSD DE forums and is the point of contact within the Army for the governance and processes required for the execution of NDAA, DoD, and Army mandates that involve systems and DE. Army collaboration with OSD for systems and DE issues and identifies and advocates for Army equities during the establishment and implementation of DoD policy involving systems engineering. This Project will execute the responsibility for leading a Digital Thread Operational Integrated Product Team (OIPT) with members from across the Army in order to develop the requirement for the Digital Thread in support of the Army modernization. The Digital Thread is a framework that will provide a means to integrate digital artifacts across organizational boundaries and establishes traceability from initial concept through a fielded and supported piece of equipment and system. This Project enables representation by the Acquisition Community at the Army M&S General Officer Steering Committee (GOSC), Council of Colonels			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
(CoC), and other M&S forums. THIS PROJECT provides guidance to PEOs and PMs to plan for the integrated use of M&S throughout the acquisition lifecycle and coordinates M&S activities within the Army Acquisition Community.			
Title: Strategic Engineering Guidance	8.788	8.223	8.297
FY 2024 Plans: This Project will continue in the development of MOSA policy and implementation guidance, in accordance with NDAA FY 2017 2466a/ b/c, that leads to the certification of MOSA in MDAPs. Other responsibilities include confirming that Army programs proceeding to Milestone B have incorporated clearly defined major subsystem interfaces between the major system platform and major system components, between major system components, and between major system platforms, and that these major system interfaces are consistent with the widely supported and consensus-based standards. This Project will continue to provide overarching governance, promulgation, and integration of the programs of record through a cross functional IPT that emphasizes lessons learned and best practices for RAM. Assist programs in the research for root causes of reliability issues and provide detailed assessment along with recommendation to senior leadership. This Project will supervise the major RAM program elements to ensure that operationally focused, achievable, affordable, and testable RAM requirements are included in the requirements documentation and the Department of the Army (DA) decision-making process. Assist in Army staff evaluation of proposed changes to operational systems' RAM characteristics in product improvement programs. As the Army implements the Army's People Strategy, this Project supports the functional lead for Engineering by identifying skills gaps and recommending the needed training. This Project will also promote workforce development efforts to improve the level of systems engineering competency through credentials that provide focused enhanced skills in Digital, Data and Systems engineering, modern agile software development, and Cybersecurity, by developing persona based curriculum that will focus on providing PEOs the ability to effectively manage digitally transformed programs.This Project will include engineering support to OSD and the Army to oversee the growth of civilian talent to support ASA(ALT) Systems Engineering requirements. This includes recommending improvements in Training, Education, Rotational Assignments, and Mentoring for a Systems Engineering (SE) work force across the Army. This office will support ASA(ALT) in the development of the Human Capital Strategic Plan (HCSP) and refinement of the System Engineering Functions with OSD. This Project will lead, plan, integrate and synchronize information cybersecurity efforts across ASA(ALT) including PEOs and headquarters. Identify crosscutting issues and opportunities from across the PEOs requiring ASA(ALT) senior leader attention. Represent ASA(ALT) cybersecurity equities in external stakeholder forums (e.g. Army Cyberspace Council, CIO Executive Board). Review and shape all cyberspace related strategies, policies, and orders affecting ASA(ALT) from OSD, HQDA, and ARCYBER; and elevate issues to the Chief Systems Engineer as needed. Synchronize architectures between enterprise and acquisition systems. Support critical modernization of unsupported software for secure operations. Assist and respond with data call requests,			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
synchronization efforts, and IPRs with DoD CIO and the HQDA G-6, ARCYBER, and the VCSA. Leverage cybersecurity policy as a technology enabler. Fulfill cybersecurity functions mandated by public law, federal directives, and DoD/Army policy. Coordinate, optimize, and monitor Risk Management Framework (RMF) execution among PEOs, assist with common issues requiring senior leader attention, and liaise with CIO and the HQDA G-6. Ensure appropriate transfer of Enterprise Mission Assurance Support Service (eMASS) records for systems that transitioned to sustainment. Serve as approval authority for ASA(ALT) HQ eMASS accounts and Army Training & Certification Tracking System (ATCTS) records, as well as for reviewing and approving system transfers to sustainment in the Army Program Management System (APMS). ASA(ALT) staff point of contact for acquisition concerns related to cyberspace through the Chief Cyber Acquisition Officer. This Project provides ASA(ALT) response to major cyberspace incidents requiring ASA(ALT) Principal leader awareness. This includes but is not limited to coordinating with PEO staffs at all levels in order to analyze requirements/orders, facilitate guidance, present findings/status, and interface with Army Cyber Command (ARCYBER) and/or other HQDA organizations. In accordance with AR 70-75, coordinate Army survivability policy and guidance in Army acquisition efforts related to cyberspace. Represent HQDA on boards and committees concerning materiel survivability matters related to cyberspace. Coordinate and lead an assessment of the ASA(ALT) portfolio to apply a rigorous, systems engineering approach to consider cyber resilience within the Acquisition trade-space (e.g. performance attribute). Identify systemic vulnerabilities and coordinate the development and implementation of enterprise solutions to mitigate those vulnerabilities. Develop and implement a risk-based process to assess the impact of vulnerabilities and assist with prioritization of funding for corrective actions for high risk vulnerabilities. Coordinate with PEO Simulation, Training and Instrumentation (STRI) regarding the certification and implementation of cyber acquisition assessment teams in order to facilitate the reduction of risk across the ASA(ALT) portfolio. Coordinate with PEO staffs on the integration of traditional cybersecurity (risk management framework) and cyber resilience survivability. Coordinate the Cyber Acquisition Task Force to unify strategy and execution of cyber resilience efforts across Army. Synchronize ASA(ALT) cyber resilience strategies with OSD, United States Cyber Command (USCYBERCOM), and joint Service counterparts. NDAA Sec 807 Responsible for the conduct and execution of Post-PDR/CDR and ITRA for all Army ACAT 1/2 programs where the AAE serves as the Milestone Decision Authority (MDA). The reviews will provide recommendations on Technical Risk and PDR/CDR sufficiency, and both will be included in the MDA package for the Milestone Review, approval, and certification. This Project will establish strategic engineering guidance for cyberspace by developing and overseeing the implementation of technical processes and tools. Develop objective architecture (e.g. data structures, warehouses, interactions, products) and drive implementation of Information Security Architectures from a SoS perspective. As needed, coordinate engineering change request to federate existing Army business processes and systems. Synchronize with Army policy/strategy and with mission system owners. As needed, conduct engineering-assessments of crosscutting cyber focused architectures, solutions, and capabilities proposed by Programs of Record, Cross Functional Teams, and Rapid Capabilities and Critical Technologies Office. Increase engineering rigor though policies, processes, tools, and technical oversight across systems and systems-of-systems in order to			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
maximize the cyberspace survivability of the Army Acquisition portfolio. Define, publish, and revise as needed a standardized Cyber Acquisition Discipline Artifact for PMs to demonstrate the repeatable implementation of cyber survivability attributes during decision point reviews. Develop and maintain an Implementation Guidebook to improve awareness and consistency of related planning and execution. Support the AAE in reviewing the Cyber Acquisition Discipline Implementation Assessment during decision reviews for all Acquisition Category 1 and 2 programs, as well as MDAs/DAs for other systems as requested. Lead the development of cyberspace contract language requirements and templates, and publish in policy for the acquisition workforce. IAW AR-70-75, represent HQDA on boards and committees concerning materiel survivability matters related to cyberspace resilience. Serve as HQDA lead responsible for tracking and monitoring cyberspace remediation (find-fix-verify) as recommended by the Department of Defense Office of Inspector General (DODIG). Provide engineering governance for emerging cyberspace related capabilities and advances to include artificial intelligence, cloud-computing governance, Development, Security and Operations (DevSecOps), supply chain risk management, zero trust, etc. Ensure ASA(ALT)'s cyber-related roadmaps align with Army/DoD CIO regarding data, cloud migration, data centers, etc. Analyze requirements and opportunities as well as publish ASA(ALT) internal Technical Bulletins and other information papers to inform PMs. Coordinate with capability developers to establish systems engineering criteria in order to ensure new requirements documents address cyber resilience. Coordinate with Army Materiel Command to establish policy and processes that shall maintain cybersecurity and survivability for programs transitioning to sustainment. Lead, in coordination with HQDA G-3/5/7, the establishment of the materiel component of the cyber readiness framework as an interface between systems and operations, which requires authoritative and accessible data from the acquisition and sustainment communities to reduce operational risk. This Project will serve as the ASA(ALT) lead for System Security Engineering (SSE). Army requires a professional and effective SSE workforce, which is separate from information system security management (ISSM) or network defense functions. SSE contributes to a broad-based, holistic security perspective and focus within the systems engineering (SE) discipline. SSE ensures stakeholder protection needs and security concerns are properly identified and addressed in all engineering stages of the system life cycle. Coordinate with OUSD to define the DoD body of knowledge for SSE. Ensure duties align with prescribed training, experience, and certification. Coordinate appointment and implementation and facilitate collaboration across PEOs through meetings and publications. ***FY 2025 Plans:*** This Project will continue in the development of MOSA policy and implementation guidance, in accordance with NDAA FY 2017 2466a/ b/c, that leads to the certification of MOSA in MDAPs. Other responsibilities include confirming that Army programs proceeding to Milestone B have incorporated clearly defined major subsystem interfaces between the major system platform and major system components, between major system components, and between major system platforms, and that these major system interfaces are consistent with the widely supported and consensus-based standards. This Project will continue			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
to provide overarching governance, promulgation, and integration of the programs of record through a cross functional IPT that emphasizes lessons learned and best practices for RAM. Assist programs in the research for root causes of reliability issues and provide detailed assessment along with recommendation to senior leadership. This Project will supervise the major RAM program elements to ensure that operationally focused, achievable, affordable, and testable RAM requirements are included in the requirements documentation and the Department of the Army (DA) decision-making process. Assist in Army staff evaluation of proposed changes to operational systems' RAM characteristics in product improvement programs. As the Army implements the Army's People Strategy, this Project supports the functional lead for Engineering by identifying skills gaps and recommending the needed training. This Project will also promote workforce development efforts to improve the level of systems engineering competency through credentials that provide focused enhanced skills in Digital, Data and Systems engineering, modern agile software development, and Cybersecurity, by developing persona based curriculum that will focus on providing PEOs the ability to effectively manage digitally transformed programs. This Project will include engineering support to OSD and the Army to oversee the growth of civilian talent to support ASA(ALT) Systems Engineering requirements. This includes recommending improvements in Training, Education, Rotational Assignments, and Mentoring for a Systems Engineering (SE) work force across the Army. This office will support ASA(ALT) in the development of the Human Capital Strategic Plan (HCSP) and refinement of the System Engineering Functions with OSD. This Project will lead, plan, integrate and synchronize information cybersecurity efforts across ASA(ALT) including PEOs and headquarters. Identify crosscutting issues and opportunities from across the PEOs requiring ASA(ALT) senior leader attention. Represent ASA(ALT) cybersecurity equities in external stakeholder forums (e.g. Army Cyberspace Council, CIO Executive Board). Review and shape all cyberspace related strategies, policies, and orders affecting ASA(ALT) from OSD, HQDA, and ARCYBER; and elevate issues to the Chief Systems Engineer as needed. Synchronize architectures between enterprise and acquisition systems. Support critical modernization of unsupported software for secure operations. Assist and respond with data call requests, synchronization efforts, and IPRs with DoD CIO and the HQDA G-6, ARCYBER, and the VCSA. Leverage cybersecurity policy as a technology enabler. Fulfill cybersecurity functions mandated by public law, federal directives, and DoD/Army policy. Coordinate, optimize, and monitor Risk Management Framework (RMF) execution among PEOs, assist with common issues requiring senior leader attention, and liaise with CIO and the HQDA G-6. Ensure appropriate transfer of Enterprise Mission Assurance Support Service (eMASS) records for systems that transitioned to sustainment. Serve as approval authority for ASA(ALT) HQ eMASS accounts and Army Training & Certification Tracking System (ATCTS) records, as well as for reviewing and approving system transfers to sustainment in the Army Program Management System (APMS). ASA(ALT) staff point of contact for acquisition concerns related to cyberspace through the Chief Cyber Acquisition Officer. This Project provides ASA(ALT) response to major cyberspace incidents requiring ASA(ALT) Principal leader awareness. This includes			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
but is not limited to coordinating with PEO staffs at all levels in order to analyze requirements/orders, facilitate guidance, present findings/status, and interface with Army Cyber Command (ARCYBER) and/or other HQDA organizations. In accordance with AR 70-75, coordinate Army survivability policy and guidance in Army acquisition efforts related to cyberspace. Represent HQDA on boards and committees concerning materiel survivability matters related to cyberspace. Coordinate and lead an assessment of the ASA(ALT) portfolio to apply a rigorous, systems engineering approach to consider cyber resilience within the Acquisition trade-space (e.g. performance attribute). Identify systemic vulnerabilities and coordinate the development and implementation of enterprise solutions to mitigate those vulnerabilities. Develop and implement a risk-based process to assess the impact of vulnerabilities and assist with prioritization of funding for corrective actions for high risk vulnerabilities. Coordinate with PEO Simulation, Training and Instrumentation (STRI) regarding the certification and implementation of cyber acquisition assessment teams in order to facilitate the reduction of risk across the ASA(ALT) portfolio. Coordinate with PEO staffs on the integration of traditional cybersecurity (risk management framework) and cyber resilience survivability. Coordinate the Cyber Acquisition Task Force to unify strategy and execution of cyber resilience efforts across Army. Synchronize ASA(ALT) cyber resilience strategies with OSD, United States Cyber Command (USCYBERCOM), and joint Service counterparts. NDAA Sec 807 Responsible for the conduct and execution of Post-PDR/CDR and ITRA for all Army ACAT 1/2 programs where the AAE serves as the Milestone Decision Authority (MDA). The reviews will provide recommendations on Technical Risk and PDR/CDR sufficiency, and both will be included in the MDA package for the Milestone Review, approval, and certification. This Project will establish strategic engineering guidance for cyberspace by developing and overseeing the implementation of technical processes and tools. Develop objective architecture (e.g. data structures, warehouses, interactions, products) and drive implementation of Information Security Architectures from a SoS perspective. As needed, coordinate engineering change request to federate existing Army business processes and systems. Synchronize with Army policy/strategy and with mission system owners. As needed, conduct engineering-assessments of crosscutting cyber focused architectures, solutions, and capabilities proposed by Programs of Record, Cross Functional Teams, and Rapid Capabilities and Critical Technologies Office. Increase engineering rigor though policies, processes, tools, and technical oversight across systems and systems-of-systems in order to maximize the cyberspace survivability of the Army Acquisition portfolio. Define, publish, and revise as needed a standardized Cyber Acquisition Discipline Artifact for PMs to demonstrate the repeatable implementation of cyber survivability attributes during decision point reviews. Develop and maintain an Implementation Guidebook to improve awareness and consistency of related planning and execution. Support the AAE in reviewing the Cyber Acquisition Discipline Implementation Assessment during decision reviews for all Acquisition Category 1 and 2 programs, as well as MDAs/DAs for other systems as requested. Lead the development of cyberspace contract language requirements and templates and publish in policy for the acquisition workforce. IAW AR-70-75, represent HQDA on boards and committees concerning materiel survivability matters related to cyberspace resilience. Serve as HQDA lead responsible for tracking and monitoring cyberspace remediation (find-fix-verify) as recommended by the Department of Defense Office of Inspector General (DODIG). Provide engineering governance for emerging cyberspace			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
related capabilities and advances to include artificial intelligence, cloud-computing governance, Development, Security and Operations (DevSecOps), supply chain risk management, zero trust, etc. Ensure ASA(ALT)'s cyber-related roadmaps align with Army/DoD CIO regarding data, cloud migration, data centers, etc. Analyze requirements and opportunities as well as publish ASA(ALT) internal Technical Bulletins and other information papers to inform PMs. Coordinate with capability developers to establish systems engineering criteria in order to ensure new requirements documents address cyber resilience. Coordinate with Army Materiel Command to establish policy and processes that shall maintain cybersecurity and survivability for programs transitioning to sustainment. Lead, in coordination with HQDA G-3/5/7, the establishment of the materiel component of the cyber readiness framework as an interface between systems and operations, which requires authoritative and accessible data from the acquisition and sustainment communities to reduce operational risk. This Project will serve as the ASA(ALT) lead for System Security Engineering (SSE). Army requires a professional and effective SSE workforce, which is separate from information system security management (ISSM) or network defense functions. SSE contributes to a broad-based, holistic security perspective and focus within the systems engineering (SE) discipline. SSE ensures stakeholder protection needs and security concerns are properly identified and addressed in all engineering stages of the system life cycle. Coordinate with OUSD to define the DoD body of knowledge for SSE. Ensure duties align with prescribed training, experience, and certification. Coordinate appointment and implementation and facilitate collaboration across PEOs through meetings and publications. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased funding reflects the planned lifecycle of the effort.			
Title: Facilities and IT Support ***Description:*** Provides funding for infrastructure/facilities and IT support. ***FY 2025 Plans:*** Provides funding for infrastructure/facilities and IT support. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Provides funding for infrastructure/facilities and IT support.	0.423	-	0.450
Title: Cyber Resiliency Mitigations ***FY 2025 Plans:*** Program Offices will begin cyber vulnerability remediation efforts. These efforts are based on requests to address discovered and enumerated findings from DoD Strategic Cybersecurity Program, Defense Cyber Red Teams, other Defensive Cyberspace Operations, and other assessments. Each specific request (classified) is verified as operationally-relevant and threat-informed.	-	-	5.000

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
The Office of the ASA(ALT) will oversee execution of specific (classified) efforts, while analyzing urgent, emergent requests for potential reprioritization. The Office will all continue coordination with programs, operational stakeholders, and the intelligence community to capture proposed remediation effort for future year execution. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased funding to accelerate the Army's ability to mitigate and remediate identified vulnerabilities in critical weapon systems and kill chains.			
Accomplishments/Planned Programs Subtotals	22.207	20.828	26.352

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This project does not have any requirement for direct procurement of hardware or software.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Governance Core Labor	TBD	Office of the Chief Systems Engineer (OCSE) : Various	-	1.796	Nov 2019	2.020	Oct 2022	2.020	Oct 2024	-		2.020	Continuing	Continuing	-
Systems Engineering Governance Matrix Labor	TBD	Various : Various	-	0.822	Nov 2019	0.373	Oct 2022	0.373	Oct 2024	-		0.373	Continuing	Continuing	-
Systems Engineering Governance Contract Labor	TBD	TBD : Various	-	2.576	Nov 2022	2.576	Dec 2023	2.576	Dec 2024	-		2.576	Continuing	Continuing	-
Systems Engineering Governance FFRDC Labor	TBD	MITRE : Various	-	1.139	Nov 2019	1.139	Oct 2022	1.139	Oct 2024	-		1.139	Continuing	Continuing	-
Engineering Support and Services Core Labor	TBD	Office of the Chief Systems Engineer (OCSE) : Various	-	2.105	Nov 2019	2.305	Oct 2022	2.305	Oct 2024	-		2.305	Continuing	Continuing	-
Engineering Support and Services Matrix Labor	TBD	Various : Various	-	0.940	Nov 2019	0.426	Oct 2022	0.426	Oct 2024	-		0.426	Continuing	Continuing	-
Engineering Support and Services Contract Labor	TBD	TBD : Various	-	2.938	Nov 2022	2.938	Dec 2023	2.938	Dec 2024	-		2.938	Continuing	Continuing	-
Engineering Support and Services FFRDC Labor	TBD	MITRE : Various	-	0.680	Nov 2019	0.828	Oct 2022	0.828	Oct 2024	-		0.828	Continuing	Continuing	-
Strategic Engineering Guidance Core Labor	TBD	Office of the Chief Systems Engineer (OCSE) : Various	-	3.042	Nov 2019	2.968	Oct 2022	3.042	Oct 2024	-		3.042	Continuing	Continuing	-
Strategic Engineering Guidance Matrix Labor	TBD	Various : Various	-	1.208	Nov 2019	0.549	Oct 2022	0.549	Oct 2024	-		0.549	Continuing	Continuing	-
Strategic Engineering Guidance Contract Labor	TBD	TBD : Various	-	3.774	Nov 2022	3.774	Dec 2023	3.774	Dec 2024	-		3.774	Continuing	Continuing	-
Strategic Engineering Guidance FFRDC Labor	TBD	MITRE : Various	-	0.764	Nov 2019	0.932	Oct 2022	0.932	Oct 2024	-		0.932	Continuing	Continuing	-
Cyber Resiliency Mitigation	TBD	TBD : Various	-	-		-		5.000		-		5.000	Continuing	Continuing	-
		Subtotal	-	21.784		20.828		25.902		-		25.902	Continuing	Continuing	N/A

Remarks

Note: 1

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604798A / *Brigade Analysis, Integration and Evaluation*	Project (Number/Name) DY7 / *Army Systems Engineering, Architecture & Analysis*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
- Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)															

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Facilities and IT Support	Option/ Various	Various: Note: 1 : National Capital Region	4.935	0.423	Nov 2019	-		0.450	Nov 2024	-		0.450	0.423	6.231	-
		Subtotal	4.935	0.423		-		0.450		-		0.450	0.423	6.231	N/A

Remarks

Note:1

- Program Activities performed at Aberdeen Proving Ground (MD), Taylor Bldg, (Crystal City, VA), Pentagon, (Washington DC), TACOM (Warren, MI)

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.935	22.207		20.828		26.352		-		26.352	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

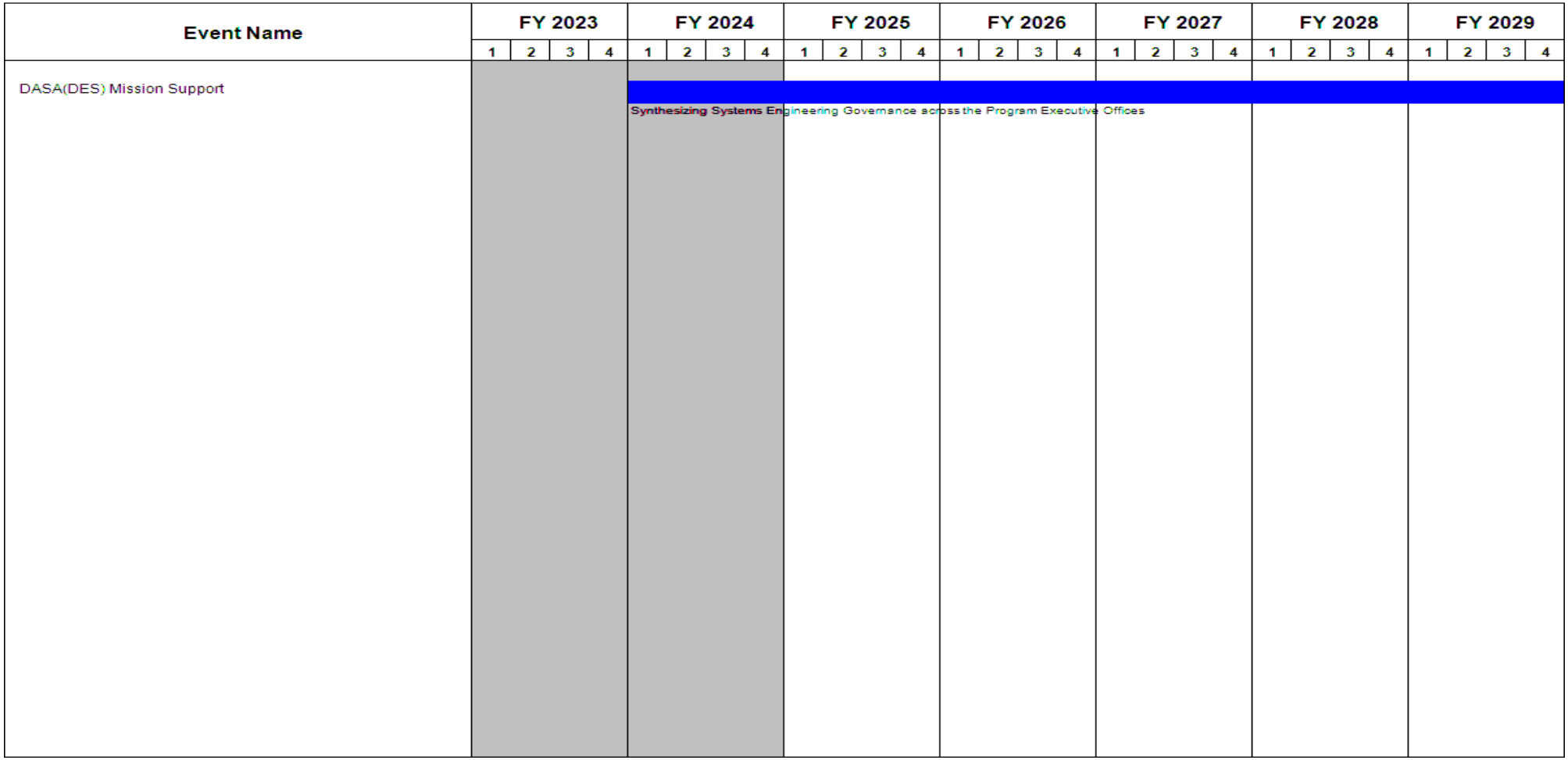

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604798A / *Brigade Analysis, Integration and Evaluation*	**Project (Number/Name)** DY7 / *Army Systems Engineering, Architecture & Analysis*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DASA(DES) Mission Support	1	2024	4	2029

Note

Capability Set (CS)

Common Operating Environment (COE):
Army Interoperability Certification (AIC), Command Post Computing Environment (CPCE), Critical Design Review (CDR), Mounted Computing Environment (MCE), Network Integration Evaluation (NIE), Operational Test (OT)

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	284.859	243.851	242.949	-	242.949	204.560	178.208	158.545	125.754	0.000	1,438.726
613: *MORTAR SYSTEMS*	-	0.998	-	-	-	-	-	-	-	-	0.000	0.998
BQ3: *155mm Artillery Propulsion XM654*	-	22.628	16.497	27.424	-	27.424	27.268	24.614	32.413	16.031	0.000	166.875
BY1: *Next Generation Combat Vehicle Ammunition*	-	27.545	34.028	6.272	-	6.272	-	-	-	-	0.000	67.845
CE3: *Precision Munition (Sniper)*	-	4.993	-	6.513	-	6.513	4.539	3.046	-	-	0.000	19.091
DC9: *30mm MMPA M-SHORAD INC 3*	-	-	18.936	11.303	-	11.303	7.846	5.128	4.484	4.529	0.000	52.226
EC4: *Non-Standard Simulator Munitions*	-	2.102	2.188	0.411	-	0.411	0.413	0.417	0.421	0.425	0.000	6.377
EL9: *Ammunitions Logistics Prototyping*	-	0.985	1.052	1.074	-	1.074	1.076	1.087	1.099	1.110	0.000	7.483
EP2: *Shoulder-Launched Munitions*	-	0.600	2.551	-	-	-	-	-	-	-	0.000	3.151
EP3: *Reduced Range Ammunition - Small Caliber*	-	5.024	-	-	-	-	-	-	-	-	0.000	5.024
EP4: *One-Way Luminescence for Small Caliber Ammo*	-	7.289	3.093	-	-	-	-	-	-	-	0.000	10.382
EP7: *Aviation Airborne Expendable Countermeasures*	-	6.131	3.194	5.840	-	5.840	6.021	0.902	-	-	0.000	22.088
EU4: *40mm HV Improved High Explosive Dual Purpose*	-	1.997	-	1.503	-	1.503	-	-	-	-	0.000	3.500
EU6: *155mm HE Rocket Assist Project Extended Range*	-	13.857	28.772	15.631	-	15.631	2.655	-	-	-	0.000	60.915
EW1: *40mm Low Velocity Ammunition*	-	1.970	0.082	0.107	-	0.107	-	-	-	-	0.000	2.159
FA6: *30mm Lethality*	-	13.337	3.014	-	-	-	-	-	-	-	0.000	16.351

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army													Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*								
FJ4: *Cannon-Delivered Area Effects Munitions (C-DAEM)*	-	89.029	85.071	93.267	-	93.267	89.588	83.855	85.579	87.840	0.000	614.229
FL4: *Small Caliber Ammo for Next Gen Squad Weapons*	-	32.625	11.809	11.955	-	11.955	11.968	12.097	12.232	12.354	0.000	105.040
MS1: *Battalion Mortar System Modernization*	-	-	-	6.012	-	6.012	-	-	-	-	0.000	6.012
S36: *Precision Guidance Kit*	-	53.749	33.564	55.637	-	55.637	53.186	47.062	22.317	3.465	0.000	268.980

Note

Project MS1: Battalion Mortar System Modernization is a New Start in FY2025.
Project EU4: 40mm HV Improved High Explosive Dual Purpose and EW1: 40mm Low Velocity Ammunition are on track for completion in FY2025 and are transitioning to production.

A. Mission Description and Budget Item Justification

Multiple Projects within Program Element Weapons and Munitions - Eng Dev, are key enablers of the Army's Cannon Modernization Priorities: 155mm Artillery Propulsion (Project BQ3), 155mm High Explosive Rocket Assisted Projectile Extended Range (Project EU6) and Precision Guidance Kit (Project S36).

Project 613, Mortar Systems funds engineering development and demonstration of new technologies that will support modernized mortar weapon and mortar fire control systems. This includes capabilities that provide commonality between current and future weapon and fire control systems to help mitigate technology shortfalls and critical capability gaps. Future mortar systems that address these gaps include remote mortar turrets for mounted mortar systems, future cannon design study and improvements, round counter design effort, high-pressure capable cannons/components, tactical vehicle integration and composite/lightweight components for mounted/dismounted systems as well any future mortar modernization efforts to improve system capability and performance to meet future capability gaps. Mortar Fire Control Systems capabilities include lightweight inertial measurement and navigation (IMU/INU) units for weapon pointing, simplified Ethernet/wireless-based digital communications interfaces, development of updated fire control software to enable commonality and modularity (plug and play capability), integration with existing/future platform interfaces to meet Modular Open Architecture Standard (MOSA), and support for commercial off-the-shelf (COTS)/modified commercial off-the-shelf (MCOTS) fire control components. There is no FY 2025 funding request.

Project BQ3, 155MM Artillery Propulsion Supercharge funding will support the Army's Cannon Modernization Strategy, which includes Paladin Integrated Management (PIM) Armament Upgrade and Next Generation Cannon, and all utilized cannons that are 52-calibers or longer; such as the future 58-caliber Extended Range Cannon Artillery (ERCA). Supercharge is a stand-alone top-zone 155 millimeter (mm) propelling charge required to achieve maximum range requirements beyond 50 kilometers (km) from Self-Propelled Howitzer (SPH) equipped with cannon length greater than 52-calibers. Supercharge will achieve lethality overmatch out to 70km from future US-developed and produced Long Range Precision Fires Weapon Systems using both existing and developmental extended range projectiles and will potentially increase range with compatible legacy projectiles up to thirty percent. Supercharge is composed of an earlier bag variant and later combustible cartridge case, integral metal stub case, electrically initiated primer, and advanced artillery propellant. This Project supports the Urgent Materiel Release (UMR) Supercharge (bag configuration) qualification required for fielding an initial capability of two battalions, and also supports the development of the Full Materiel Release (FMR) Supercharge that will

address high technology and integration risks unique to achieving extended range to include improved design opportunities for pressure temperature curve, cannon tube wear and ensure fielding robustness. FY 2025 funding will continue to support Supercharge component development, improve propellant for longer cannon life, conduct testing and development of artillery propulsion charges and primers in support of the Army's Cannon Modernization Strategy.

Project BY1, Next Generation Combat Vehicle Ammunition: 50x228 millimeter (mm) family of ammunition is a critical technology development in response to the Next Generation Combat Vehicle (NGCV) Abbreviated Capability Development Document for weapon qualification, platform integration, and fielding of the XM30 Mechanized Infantry Combat Vehicle (MICV) primary weapon system (XM913). This effort includes the development of three capabilities: The XM1202 Target Practice with Trace (TP-T); the XM1203 Armor Piercing Fin Stabilized Discarding Sabot with Trace (APFSDS-T); and the XM1204 High Explosive Airburst with Trace (HEAB-T). The training cartridge will allow the Warfighter to train in a cost-effective manner and the tactical cartridges will provide enhanced lethality at increased ranges when engaging personnel threats in the open, defilade, and under the cover of urban structures, Anti-Tank Guided Missiles (ATGM) teams, and current and projected future peer armored materiel threats. This effort is operating under Middle Tier Acquisition authority for rapid prototyping to qualify the three munitions in order to support the NGCV Cross Functional Team (CFT) timeline for First Unit Equipped (FUE). Fiscal Year (FY) 2025 funding supports building test assets and conducting Developmental Test & Evaluation (DT&E) on the XM1204 HEAB-T variant.

Project CE3, Precision Munition (Sniper): The Precision Munition (Sniper) project is a critical technology development in response to the Precision Munition Capabilities Development Documents (CDD) for the ammunition required to support the Precision Sniper Rifle (PSR) / sniper weapons systems. The objective is to transfer the latest lethality technology into the suite of ammunition used by snipers. The Precision Munition improvement is split into three capability areas: Anti-Materiel (AM), Improved Performance Round (IPR), and Subsonic. The AM and IPR capabilities will enhance lethal effects at greater distances. The Subsonic capability will increase soldier survivability at close range by providing a low-sound signature munition that is undetectable to the enemy. Fiscal Year (FY) 2025 funding will initiate Engineering and Manufacturing Development (EMD) activities, develop prototypes, and support a Solider Touch Point (STP) / User Evaluation for the .338 AM Cartridges.

Project DC9, 30mm MMPA M-SHORAD INC 3: The 30mm MMPA M-SHORAD INC 3 / Project DC9 funds the development of the 30mm XM1223 MMPA munition and respective weapon contact setter under the Middle Tier of Acquisition (MTA) authority for rapid prototyping. The objective is to enhance the operational effectiveness of the M-SHORAD Inc 3 platform, Mobile-Low, Slow, Small Unmanned Aircraft Integrated Defeat System (M-LIDS) and any other Joint Force platforms that are equipped with a 30mm weapon system and have a Counter Unmanned Aerial Systems (C-UAS) mission. The programmable fuze modes in the munition include proximity airburst to defeat personnel in the open and small Unmanned Aerial System (UAS) targets, proximity airburst delay to defeat personnel in defilade, gated proximity airburst to minimize collateral damage in cluttered environments, mechanical point detonate to defeat light materiel targets, and self-destruct to minimize collateral damage. The XM1223 will allow the platforms to conduct counter-UAS missions while retaining the ability to quickly transition to ground targets without having to swap ammunition. FY 2025 funding supports continuing the XM1223 development, building prototypes for Design Engineering Testing (DET), and conducting DET. The total cost of the 30 millimeter (mm) MMPA Middle Tier of Acquisition effort is $59.969 million RDT&E from FY2024 to FY2027.

Project EC4, Non-Standard Simulator Munitions will standardize various pyrotechnics that simulate battlefield effects. The Army's Combat Training Centers (CTCs) are currently using non-standard munitions to replicate both conventional and asymmetric warfare battlefield effects. These modified commercial-off-the-shelf products are not safe or sustainable for use by Soldiers. This effort will develop and demonstrate various pyrotechnics/simulators to replicate both conventional and asymmetric warfare battlefield affects such as: Black smoke signature (burning vehicles, buildings, and equipment); Yellow smoke signature (chemical, biological or nuclear effects);

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604802A *I Weapons and Munitions - Eng Dev*

Mini Blast to simulate hostile fire and small Improvised Explosive Devices (IEDs) during mounted operations in urban terrain; Micro pyrotechnics to simulate indoor hostile fire and IED effects that are capable of being integrated into existing facilities; Rocket Propelled Grenade (RPG) simulators to replicate the flight of a Rocket Propelled Grenade; Macro Pyro to simulate hostile fire, booby trap and IED Simulations indoor and outdoors; High Order Blast Effect (HiOBE) used to replicate a Vehicle Borne Improvised Explosive Device (VBIED), building explosions, and other significant explosive events; Artillery airburst simulator to replicate indirect fire; Antitank Guided Missile and Rocket (AGMR) simulator to replicate surface to air missile or shoulder launched rocket; Tracer Fire-back simulator to replicate enemy small arms fire and anti-aircraft fire; and Longer burning remotely and electrically initiated smoke pots and smoke grenades of various colors. Standardization will reduce training costs, eliminate redundancies between systems and mitigate environmental concerns and safety risks associated with realistic scenario-based training.

Project EL9, Ammunition Logistics Prototyping: This Project supports the future force by improving the distribution, management, reliability and survivability of ammunition through the advanced development, integration, and demonstration of logistics system enablers. These enablers will improve the efficiency and effectiveness of ammunition operations, to include retrograde, while reducing the logistics footprint on the battlefield. Technology areas addressed include handling, distribution, and management (strategic and tactical), prognostics, diagnostics, and asset visibility, explosives safety, and adaptive and environmentally friendly packaging and palletization. The efficient deployment and sustainment of reliable ammunition are vital to success on the battlefield. This project enhances the operational effectiveness of the ammunition logistics system to ensure the distribution of reliable ammunition to the warfighter. FY 2025 funding will be focused on integrating Commercial Off-the-shelf (COTS) and/or relatively mature technologies into ammunition resupply enablers, developing interfaces with Programs/Systems of Records as required by the Contested Logistics, Long Range Precision Fires (LRPF), Next-Generation Combat Vehicles (NGCV), Future Vertical Lift (FVL), Network, and Soldier Lethality (SL) Cross Functional Teams (CFT). They will be focused on ensuring that a low-risk resupply process solution exists to support the success of the Maneuver Force.

Project EP2, Shoulder-Launched Munitions: The XM919 Individual Assault Munitions (IAM) effort will combine the capabilities of the existing M141 Bunker Defeat Munition (BDM) and the M136 Anti-Tank 4 Confined Space - Reduced Sensitivity (AT4CS RS), eliminating the mission risk associated with having to choose between two different capability Shoulder-Launched Munitions (SLMs), reducing the logistics and training burdens associated with multiple systems. IAM consists of the tactical XM919 IAM munition and training devices including the XM922 sub-caliber trainer (SCT), sub-caliber tracer ammunition (SCT Ammo), Field Handling Trainer (FHT), Synthetic Training Environment Live Training System (STE LTS) and Soldier Virtual Trainers (SVT). JPEO A&A is collaborating with PEO STRI to plan for STE LTS and SVT integration within PEO STRI platforms under the SS PEG. The tactical XM919 IAM supports the close fight in urban and complex terrain, allowing Soldiers a fire-from-enclosure (FFE) capability to defeat field expedient structures such as earth and timber bunkers, reinforced concrete, adobe and triple brick walls with behind the wall lethality effects as well as defeating light armored vehicles. The IAM training devices provide training capability to increase the Soldier's proficiency and integration of the XM919 tactical system into combat operations. The XM919 IAM enables the Army's Soldier Lethality Modernization Line of Effort (LOE) by providing multi-target capability and reducing training & logistics burden associated with two systems, while providing tactical innovation capable of extending overmatch against peer/near-peer adversaries in a joint, multi-domain, high-intensity conflict.

Project EP3, Reduced Range Ammunition - Small Caliber: The small caliber Reduced Range Ammunition (RRA) Project is a critical technology development in response to the 7.62 millimeter (mm) and .50 caliber Capabilities Development Documents (CDD). The overall objective of RRA is to provide training ammunition suitable for use on military installations with Surface Danger Zone (SDZ) restrictions. The relatively long maximum range of the 7.62mm and .50 caliber service ammunition poses challenges on training ranges in range restricted areas. RRA will mitigate a training gap on installations by providing a materiel solution that meets training needs while

shortening and condensing the SDZ. This will allow soldiers to train with 7.62mm and .50 Caliber weapons on restricted ranges. The RRA cartridge design will be compatible with all Army 7.62mm and .50 caliber weapons, but specifically optimized to work in the M240 and M2 Machine Guns.

Project EP4, One-Way Luminescence for Small Caliber Ammo: The One-Way Luminescence (OWL) project is a critical technology development in response to the 7.62 millimeter (mm) and 5.56mm Families of Ammunition Capabilities Development Documents (CDD) and .50 Caliber Munitions CDD. Current small caliber ammunition tracer rounds are a pyrotechnic tracer mix which allows enemy forces to see the trace round and track its trajectory back to the shooter. The OWL projects objective is to develop and field a full tracer round, replace the current pyrotechnic cartridges with trace cartridges that are only visible to the shooter and soldiers in close proximity, increasing soldier survivability, and increasing lethality by incorporating Enhanced Performance Round (EPR) technology into the new tracer ammunition. This is no FY 2025 request as program transitions from development to production.

Project EP7, Aviation Airborne Expendable Countermeasures (AAECM) will support Integrated System Design (ISD), System Capability (SC) and Manufacturing Process Demonstrations (MPD) on expendable countermeasure flares and decoys to include the XM215 Infrared (IR) countermeasure Flare and XM20 Radio Frequency (RF) expendables. These expendable countermeasures systems are an essential part of survivability equipment for Army aircraft. Army Research Development Technology & Evaluation (RDT&E) efforts are coordinated with Program Executive Office (PEO) Aviation to address the AAECM capability, a critical enabler for enduring aircraft and the Future Vertical Lift (FVL) - Aircraft Survivability Equipment (ASE) Cross Functional Team (CFT) within Army's Top modernization priorities. These advanced decoys will address deficiencies in Army aircraft protection and the safety of its aircrews against advanced Man-Portable Air Defense Systems (MANPADS) and Surface-to-Air Missiles (SAM) systems. The project will also support ISD, SC and MPD on new expendable countermeasure munitions that will protect Army aircraft from advanced and proliferated current guided missile threats. Activities include modeling and simulation, flight testing, qualification testing, environmental considerations, safety enhancements, manufacturing enhancements, qualification of other service and foreign munitions that could meet current requirements, product improvements, insertion of new technologies to increase performance, and enhancement of current flare solutions for new and existing aircraft. Systems include impulse cartridges and aircraft expendables (to include RF expendables).

Project EU4, 40 millimeter (mm) High Velocity (HV) High Explosive Dual Purpose - Air burst (HEDP-AB): The 40 millimeter High Velocity HEDP-AB is a new capability identified as a Warfighter counter-defilade requirement in the 40mm High Velocity Improved High Explosive Dual Purpose Cartridge Capability Development Document (CDD) and will provide the Mk19 Mod 3 Grenade Machine Gun (GMG) an airburst capable cartridge with the ability of achieving required lethal effects against enemy targets in the open and in defilade while maintaining the capability to defeat unarmored and lightly armored vehicles. XM1176 HEDP-AB cartridges are manufactured by de-fuzing legacy M430A1 cartridges and installing a new airburst capable fuze onto the M430A1 warhead. In FY 2025 funding will support Live Fire Test and Evaluation (LFT&E) efforts.

Project EU6, The 155 millimeter (mm) High Explosive (HE) Rocket Assisted Projectile (RAP) supports the Army's Cannon Modernization Strategy which includes Paladin Integrated Management (PIM) Armament Upgrade, Next Generation Cannon, Extended Range Cannon Artillery (ERCA), and all utilized cannons that are 52-calibers or longer. The Project is executing an evolutionary approach leveraging current rocket assisted munitions hardware to meet the extended range and precision objectives. The High Explosive (HE) Rocket Assisted Projectile (RAP) will first deliver a near term solution to increase range from 30km to 40km in current 39 caliber systems. The Next Generation Rocket Assisted Projectile (NGRAP) will continue development of the High Explosive (HE) Rocket Assisted Projectile (RAP) with focus on improved accuracy, lethality, and ranges up to 70km and greater utilizing 52 and 58 caliber weapons. FY 2025 funding supports the Engineering and Manufacturing Development

(EMD) activities to build, test, and evaluate a solution that meets the requirements specified in the Next Generation Rocket Assisted Projectile (NGRAP) Capabilities Development Document (CDD).

Project EW1, 40 millimeter (mm) Low Velocity High Explosive Air Burst (LV-HEAB): The 40 millimeter LV-HEAB is a new capability identified as a Warfighter counter-defilade requirement in the Capability Development Document (CDD), 40mm Low Velocity (LV) Family of Ammunition Annex. The HEAB tactical cartridge allows the Warfighter to engage targets at increased effective ranges using the 40mm M320 Grenade Launcher. The HEAB cartridge provides the grenadier with a higher probability of achieving a first shot kill against enemy personnel, coupled with the ability to defeat personnel targets in defilade positions. When deployed against point and area targets, the cartridge inflicts incapacitating effects against personnel beyond those offered by the current M433 High Explosive Dual Purpose (HEDP) cartridge. The cartridge provides lethal effects against targets with improved accuracy and greater standoff ranges resulting in increased soldier survivability. Fiscal Year (FY) 2025 funding will be used to support a Soldier Touch Point (STP) for the XM1166 HEAB.

Project FA6, 30mm Lethality: The 30 millimeter (mm) Lethality project funds the development of a suite of 30x173mm caliber cartridges, which includes a XM1182 High Explosive Airburst with Trace (HEAB-T) cartridge for increased anti-personnel effects, XM1170 Armor Piercing Fin Stabilized Discarding Sabot with Trace (APFSDS-T) cartridge for anti-materiel, and ballistically matched training cartridges; XM1173 Target Practice with Trace (TP-T) cartridge and XM1172 Target Practice Discarding Sabot with Trace (TPDS-T) cartridge. The objective is to enhance the operational effectiveness and lethality of the Stryker Infantry Carrier Vehicle (ICV), Next Generation Combat Vehicle (NGCV), and any Army Fighting Vehicles that are equipped with a 30x173mm weapon system. The tactical APFSDS-T cartridge will provide an organic direct fire capability to support infantry at a greater range and will improve lethality when engaging light-to-medium armored vehicles. The HEAB-T cartridge will provide the Warfighter with increased lethality against troops in the open, counter defilade, Anti-Tank Guided Missile (ATGM) teams, and troops behind urban structures. The training cartridges will be ballistically matched to the tactical cartridges, allowing the Warfighter to train in a cost-effective manner. This project is a follow-on of the earlier efforts in support of the United States Army Europe (USAREUR) Operational Needs Statement (ONS) #15-20590 Stryker Increased Lethality for the 2nd Cavalry Regiment (2CR). There is no FY 2025 request as the program transitions to production.

Project FJ4, Cannon-Delivered Area Effects Munitions (C-DAEM): The Cannon-Delivered Area Effects Munitions (C-DAEM) Project will provide United States (U.S.) ground forces with the capability to engage area personnel through armored targets, while denying threat forces full operational freedom within the targeted area. An Analysis of Alternatives (AoA) was completed in January 2018 to inform Army acquisition and investment decisions regarding replacement of the current stockpile of 155 millimeter (mm) Dual Purpose Improved Conventional Munitions (DPICM) with Department of Defense (DoD) policy compliant munitions and address anti-armor and extended range capability requirements. The Army validated two materiel solutions for C-DAEM to be pursued in parallel to support the Army's modernization priorities; C-DAEM Armor and C-DAEM DPICM Replacement. C-DAEM Armor will destroy moved and moving self-propelled howitzers, infantry fighting vehicles and tanks. C-DAEM DPICM Replacement will destroy personnel through soft-skinned targets. Fiscal Year (FY) 2025 funding will continue to support C-DAEM Armor development and testing activities as well as engineering efforts required to integrate the Military-Code (M-Code) Global Positioning System (GPS) Receiver into the selected C-DAEM Armor objective materiel solution(s).

Project FL4, Small Caliber Ammo for Next Gen Squad Weapons: The Small Caliber Ammo for Next Gen Squad Weapons project is a critical technology development in response to the Soldier Lethality Cross Functional Team (SL CFT) Initial Capability Document (ICD) for the ammunition required to support the rapid prototyping, development, and fielding of the Next Generation Squad Weapons (NGSW) under the Middle Tier of Acquisition (MTA) authority for rapid prototyping/rapid fielding.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604802A *I Weapons and Munitions - Eng Dev*

The objective is to develop and Full Materiel Release (FMR) the new ammunition in parallel with the NGSW rifle and automatic rifle. The NGSW ammunition is split into multiple ammunition variants, the General Purpose (GP), the Special Purpose (SP), the Reduced Range Ammunition (RRA), Tracer Ammunition, Blank Ammunition, the Close Combat Mission Capability Kit (CCMCK) training ammunition, Drill Dummy Inert (DDI) cartridge, and High-Pressure Test (HPT) cartridge. Fiscal Year (FY) 2025 funding supports design optimization efforts for the SP, RRA, Blank, DDI, and HPT variants. FY 2025 funds also support Live-Fire Testing and Evaluation (LFT&E) activities on the GP, SP, and Tracer variants. FY 2025 funds support developmental testing on the CCMCK, Blank, DDI, and HPT variants. FY 2025 funds support Materiel Release efforts on the GP, SP, and variants. And, FY 2025 supports continuing the refinement, development, and maturation of the CCMCK, Blank, DDI, and HPT cartridges.

Project MS1, Battalion Mortar System Modernization: The Battalion Mortar System Modernization Project supports the development and demonstration of modernized Mortar Weapon Systems to support Infantry Brigade Combat Teams (IBCTs) and Armored Brigade Combat Teams (ABCTs). Efforts include development and qualification of said modernized systems and their required components that will increase lethality, survivability, mobility and readiness. FY 2025 funding will enable design and development effort for the weapon and mobility system for next generation 81mm and 120mm mortar weapon systems. The weapon and mobility systems will be qualified and integrated directly onto light tactical vehicles such as the High Mobility Multipurpose Wheeled Vehicle (HMMWV), the Infantry Squad Vehicle (ISV) and/or Joint Lightweight Tactical Vehicle (JLTV). The mobility system will address obsolescence by eliminating the need for a trailer mounted Mortar Stowage Kit (MSK). The modernized system will increase survivability, maneuverability, and provide a tactical advantage to the Warfighter when matched with pacing threat for direct and indirect fire and will provide overmatching capabilities.

Project S36, The Precision Guidance Kit (PGK): The Precision Guidance Kit (PGK) Project supports development efforts that will qualify state of the art technologies for a course correcting fuze that provides precision accuracy at extended ranges for current and future 155-millimeter (mm) High Explosive (HE) projectiles by eliminating a portion of the inherent errors associated with ballistic firing solutions, which effectively reduces the number of projectiles required to execute fire missions. The precision course correcting fuze will support projectile operation in Global Positioning System (GPS) degraded environments in support of the Army's Cannon Modernization Strategy. All 39-caliber weapon systems and modernized Self-Propelled Howitzer (SPH) weapon systems with cannon lengths greater than or equal to 52-caliber and new long-range projectiles require the precision course correcting fuze to meet lethality requirements. FY 2025 funding will continue to support the fabrication of precision course correcting fuze hardware, safety and development testing, and further refines the Artillery fuze design.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604802A *I Weapons and Munitions - Eng Dev*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	286.378	243.851	144.098	-	144.098
Current President's Budget	284.859	243.851	242.949	-	242.949
Total Adjustments	-1.519	0.000	98.851	-	98.851
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	8.001	-			
• SBIR/STTR Transfer	-9.520	-			
• Adjustments to Budget Years	-	-	98.851	-	98.851

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: FL4: *Small Caliber Ammo for Next Gen Squad Weapons*		
Congressional Add: *Small Caliber Ammunition Component Manufacturing*	8.000	-
Congressional Add Subtotals for Project: FL4	8.000	-
Project: S36: *Precision Guidance Kit*		
Congressional Add: *Anti-Jam Precision Guidance Kit*	25.000	-
Congressional Add Subtotals for Project: S36	25.000	-
Congressional Add Totals for all Projects	33.000	-

Change Summary Explanation

BQ3: $27.424M increase required for propulsion development work to support the Army's expanded Cannon Modernization Strategy.
BY1: $0.147M decrease for XM1202 and XM1203 reaching Milestone C and transitioning to Low-Rate Initial Production.
CE3 $6.513M and EC4 $2.048M increases support required Engineering and Manufacturing Development (EMD) activities.
EL9: $0.002 increase for integrating Commercial Off-the-shelf (COTS) and/or relatively mature technologies into ammunition resupply enablers.
EP7: $2.700M increase due to qualification testing on UH60 platform and pattern development on AH64 and CH47 platforms and $0.068M decrease due to qualification testing on UH60 platform and pattern development on AH64 and CH47 platforms.
EU4: $1.503M increase for live fire testing requirement.
EU6: $0.031 increase for engineering and manufacturing development.
EW1: $0.003M decrease accounts for 40MM Low Velocity Ammunition execution of Soldier Touch Point (STP).

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604802A *I Weapons and Munitions - Eng Dev*

FJ4: $24.281M increase in testing costs for C-DAEM Armor.
FL4: $0.024M increase for live fire testing and evaluation efforts.
S36: $30.555M increase in contract costs associated with precision course correcting fuze development efforts.
613: $1.000 increase reflects contract costs requirements associated with the completion of this effort.
MS1: $6.012M increase for initiation of Mortar Stowage Kit Modernization activities.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) 613 / *MORTAR SYSTEMS*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
613: *MORTAR SYSTEMS*	-	0.998	-	-	-	-	-	-	-	-	0.000	0.998
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Mortar System and Fire Control Modernization Project funds engineering development and demonstration of new technologies that will support modernized mortar weapon and mortar fire control systems. This includes capabilities that provide commonality between current and future weapon and fire control systems to help mitigate technology shortfalls and critical capability gaps. Future mortar systems that address these gaps include remote mortar turrets for mounted mortar systems, future cannon design study and improvements, round counter design effort, high-pressure capable cannons/components, tactical vehicle integration and composite/lightweight components for mounted/dismounted systems as well any future mortar modernization efforts to improve system capability and performance to meet future capability gaps. Mortar Fire Control Systems capabilities include lightweight inertial measurement and navigation (IMU/INU) units for weapon pointing, simplified Ethernet/wireless-based digital communications interfaces, development of updated fire control software to enable commonality and modularity (plug and play capability), integration with existing/future platform interfaces to meet Modular Open Architecture Standard (MOSA), and support for commercial off-the-shelf (COTS)/modified commercial off-the-shelf (MCOTS) fire control components.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Mortar System & Fire Control Modernization	0.998	-	-
Description: Mortar Systems and Fire Control Modernization initiatives include development and demonstration of new technologies to validate production potential for future mortar systems; including remote turrets and new weapon system components, modernized lightweight pointing device, updated Line Replaceable Units (LRUs), streamlined digital communications, and updated mortar fire control software.			
Accomplishments/Planned Programs Subtotals	0.998	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• AD9300: *Mortar Fire Control Systems Modifications*	4.370	7.399	6.098	-	6.098	12.147	10.777	4.870	4.919	0.000	50.580
• K99200: *Computer Ballistics: LHMBC XM32*	4.833	2.965	2.966	-	2.966	6.487	6.490	6.496	6.560	0.000	36.797
• K99300: *Mortar Fire Control System*	4.879	8.024	4.660	-	4.660	3.715	3.736	3.738	3.774	0.000	32.526
• G02200: *Mortar Systems*	21.946	8.013	8.353	-	8.353	14.229	13.892	13.903	14.044	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** 613 / *MORTAR SYSTEMS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost

Remarks

Other Procurement, Army (OPA) Funding / Procurement of Weapons & Tracked Combat Vehicle (W&TCV)

D. Acquisition Strategy

The Mortar System and Fire Control Modernization strategy will utilize Government Owned Government Operated (GOGO) Watervliet Arsenal (WVA) facility for cannon barrel prototyping, Combat Capabilities Development Command Armament Center (DEVCOM AC) for studies and competitively awarded Department of Defense Ordnance Technology Consortium (DOTC) and/or Cornerstone Other Transaction Agreement (OTA) initiatives for hardware and software development during Engineering Manufacturing Design Phase. A Federal Acquisition Regulation (FAR) contract will be awarded to complete full rate production.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) 613 / *MORTAR SYSTEMS*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mortar System & Fire Control Modernization - Project Manager Office Support	Various	Office of the Project Manager (PM) Combat Ammunition Systems (CAS) : Picatinny Arsenal, NJ	0.212	-		-		-		-		-	0.000	0.212	-
		Subtotal	0.212	-		-		-		-		-	0.000	0.212	N/A

Remarks

Program management includes travel and documentation support.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mortar System & Fire Control Modernization Engineering Support	MIPR	DEVCOM Armament Center : Picatinny Arsenal, NJ and Watervliet Arsenal, NY	0.497	0.998	Feb 2023	-		-		-		-	0.000	1.495	-
		Subtotal	0.497	0.998		-		-		-		-	0.000	1.495	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.709	0.998		-		-		-		-	0.000	1.707	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** 613 / *MORTAR SYSTEMS*

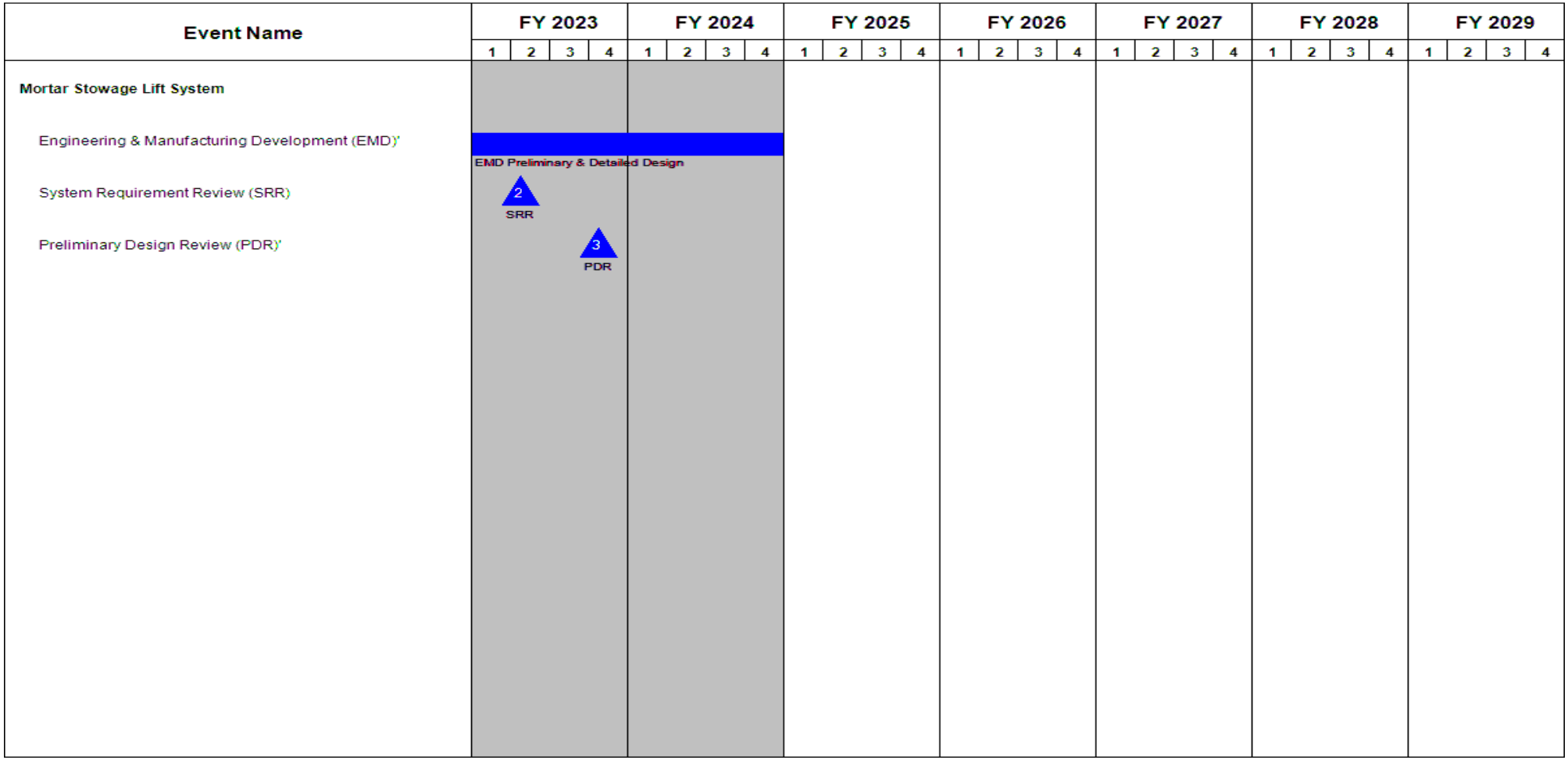

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** 613 / *MORTAR SYSTEMS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Mortar System Round Counter	1	2021	1	2021
Engineering & Manufacturing Development (EMD)	1	2020	4	2021
LRU Software Development	1	2020	4	2021
Mortar System Round Counter- System Architecture Development (Sys Eng Phase 1)	1	2020	1	2021
EMD Detailed Design Testing (Sys Eng Phase 2)	2	2021	4	2021
Critical Design Review (CDR)	4	2021	4	2021
Mortar Stowage Lift System	1	2023	1	2023
Engineering & Manufacturing Development (EMD)'	1	2023	4	2024
System Requirement Review (SRR)	2	2023	2	2023
Preliminary Design Review (PDR)'	4	2023	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) BQ3 / *155mm Artillery Propulsion XM654*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
BQ3: *155mm Artillery Propulsion XM654*	-	22.628	16.497	27.424	-	27.424	27.268	24.614	32.413	16.031	0.000	166.875
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

155MM Artillery Propulsion Supercharge funding will support the Army's Cannon Modernization Strategy, which includes Paladin Integrated Management (PIM) Armament Upgrade and Next Generation Cannon, and all utilized cannons that are 52-calibers or longer; such as the future 58-caliber Extended Range Cannon Artillery (ERCA). Supercharge is a stand-alone top-zone 155 millimeter (mm) propelling charge required to achieve maximum range requirements beyond 50 kilometers (km) from Self-Propelled Howitzer (SPH) equipped with cannon length greater than 52-calibers. Supercharge will achieve lethality overmatch out to 70km from future US-developed and produced Long Range Precision Fires Weapon Systems using both existing and developmental extended range projectiles and will potentially increase range with compatible legacy projectiles up to thirty percent. Supercharge is composed of an earlier bag variant and later combustible cartridge case, integral metal stub case, electrically initiated primer, and advanced artillery propellant. This Project supports the Urgent Materiel Release (UMR) Supercharge (bag configuration) qualification required for fielding an initial capability of two battalions, and also supports the development of the Full Materiel Release (FMR) Supercharge that will address high technology and integration risks unique to achieving extended range to include improved design opportunities for pressure temperature curve, cannon tube wear and ensure fielding robustness. FY 2025 funding will continue to support Supercharge component development, improve propellant for longer cannon life, conduct testing and development of artillery propulsion charges and primers in support of the Army's Cannon Modernization Strategy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: 155mm Artillery Propulsion Supercharge	22.628	16.497	27.424
Description: 155MM Artillery Propulsion Supercharge is a stand-alone top-zone 155 millimeter (mm) propelling charge required to achieve maximum range requirements beyond 50 kilometers (km) from Self-Propelled Howitzer (SPH) equipped with cannon length greater than 52-calibers.			
FY 2024 Plans: FY 2024 funding will continue to support efforts to FMR Supercharge component development, improve propellant for longer cannon life, conduct testing as well as support the initiation of Extended Range Cannon Artillery System of Systems (ERCA SoS) integration activities. ERCA SoS includes Supercharge and Stub Charge Propulsion System, 155mm XM1210 HE Projectile, Course Correcting Precision Fuze (LR-PGK/PGK-ER) and EPIAFS Fuze Setter.			
FY 2025 Plans: FY 2025 funding will support 155MM Artillery Propulsion Supercharge component development, propellant development (formulation trade studies and iterative prototype testing), improve propellant manufacturing (key parameters and in-process			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** BQ3 / *155mm Artillery Propulsion XM654*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
tools), and configuration testing of artillery propulsion charges and primers in support of the Army's Cannon Modernization Strategy. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding increase will continue to support 155MM Artillery Propulsion Supercharge component development, improve propellant for longer cannon life, conduct testing and development of artillery propulsion charges and primers in support of the Army's Cannon Modernization Strategy.			
Accomplishments/Planned Programs Subtotals	22.628	16.497	27.424

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E99350: *155MM ARTILLERY SUPERCHARGE*	11.002	16.469	0.000	-	0.000	-	62.303	62.302	62.924	0.000	215.000

Remarks

A Procurement of Ammunition, Army (PAA) budget line item, Standard Study Number (SSN) E99350, will resource procurement of the Supercharge to deliver extended range capability beyond 50km to support the Army's Cannon Modernization Strategy that includes PIM Armament Upgrade, Next Generation Cannon, and ERCA for fielding an initial capability of two battalions as well as future Urgent Materiel Release (UMR) and Full Materiel Release (FMR) quantities.

D. Acquisition Strategy

The 155MM Artillery Propulsion Supercharge Project consists of critical technology prototyping, testing, and demonstration of two variants: (1) the UMR Supercharge (2-piece Bag configuration) to deliver extended range capability beyond 50km to support the Cannon Modernization Strategy that includes PIM Armament Upgrade, Next Generation Cannon, and ERCA (2) the FMR Supercharge, which will address high technology and integration risks unique to achieving increased range.

The UMR Supercharge will utilize several competitively awarded Defense Ordnance Technology Consortium (DOTC) Other Transaction Agreement (OTA) Initiatives for the maturation and integration of components. These contracts will execute UMR Supercharge through qualification testing as well as transition to procurement of quantities required for fielding an initial capability of two battalions. Federal Acquisition Regulation (FAR) based production contract(s) will be awarded for UMR quantities.

The FMR Supercharge will also utilize several competitively awarded DOTC OTA Initiatives for design risk reduction of the various new and existing Supercharge components, system integration, developmental testing and qualification. Propulsion risk reduction activities will be applied to address UMR Supercharge temperature sensitivity, energy, tube wear, rough handling robustness and muzzle pressure/blast overpressure. FAR based production contract(s) will be awarded.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Office of the Project Manager (PM) Combat Ammunition Systems (CAS) : Picatinny Arsenal, NJ	0.300	0.300	Oct 2022	0.300	Oct 2023	0.350	Oct 2024	-		0.350	0.000	1.250	-
		Subtotal	0.300	0.300		0.300		0.350		-		0.350	0.000	1.250	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Combustible Case Components	MIPR	DoD Ordnance Technology Consortium (DOTC): Armtec : Coachella, CA	4.259	3.000	Nov 2022	1.200	Nov 2023	1.200	Oct 2024	-		1.200	0.000	9.659	-
Main Charge Propellants	MIPR	DoD Ordnance Technology Consortium (DOTC): General Dynamics Ordnance and Tactical Systems - Valleyfield : Salaberry-de-Valleyfield, Quebec, Canada	3.434	3.727	Nov 2022	4.493	Nov 2023	15.040	Oct 2024	-		15.040	0.000	26.694	-
Electric Primers	MIPR	Day & Zimmermann Lone Star LLC : Texarkana, TX	0.425	0.225	Mar 2023	0.200	Mar 2024	0.300	Mar 2025	-		0.300	0.000	1.150	-
Packaging	MIPR	DoD Ordnance Technology Consortium (DOTC): Savit Corporation : Rockaway, NJ	0.522	0.550	Mar 2023	0.250	Mar 2024	0.754	Mar 2025	-		0.754	0.000	2.076	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Main Load Assemble & Pack	MIPR	DoD Ordnance Technology Consortium (DOTC): General Dynamics Ordnance and Tactical Systems - Marion, IL : Marion, IL	1.650	2.500	Nov 2022	0.417	Nov 2023	-		-		-	0.000	4.567	-
Supercharge FMR Risk Reduction	Various	Various : Various	4.700	2.253	Mar 2023	0.424	Mar 2024	4.100	Mar 2025	-		4.100	0.000	11.477	-
Projectile and Fuze Hardware	Various	Various : Various	5.818	2.917	Mar 2023	1.069	Mar 2024	-		-		-	0.000	9.804	-
Software Engineering	Reqn	Leidos, Inc. : Reston, Virginia	1.350	1.200	Aug 2023	0.500	Aug 2024	-		-		-	0.000	3.050	-
		Subtotal	22.158	16.372		8.553		21.394		-		21.394	0.000	68.477	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Armaments Center (DEVCOM AC) : Picatinny Arsenal, NJ	4.210	2.893	Nov 2022	2.654	Nov 2023	4.430	Oct 2024	-		4.430	0.000	14.187	-
		Subtotal	4.210	2.893		2.654		4.430		-		4.430	0.000	14.187	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Supercharge UMR Qualification	MIPR	Army Test & Evaluation Command (ATEC):	1.647	1.684	Nov 2022	-		-		-		-	0.000	3.331	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) BQ3 / *155mm Artillery Propulsion XM654*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Yuma Proving Ground : Yuma, AZ													
Supercharge FMR Testing	MIPR	Army Test & Evaluation Command (ATEC): Yuma Proving Ground : Yuma, AZ	0.400	1.379	Nov 2022	1.990	Nov 2023	1.250	Oct 2024	-		1.250	0.000	5.019	-
Supercharge Qualification	MIPR	Various : Various	-	-		3.000	Nov 2023	-		-		-	0.000	3.000	-
		Subtotal	2.047	3.063		4.990		1.250		-		1.250	0.000	11.350	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	28.715	22.628		16.497		27.424		-		27.424	0.000	95.264	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** BQ3 / *155mm Artillery Propulsion XM654*

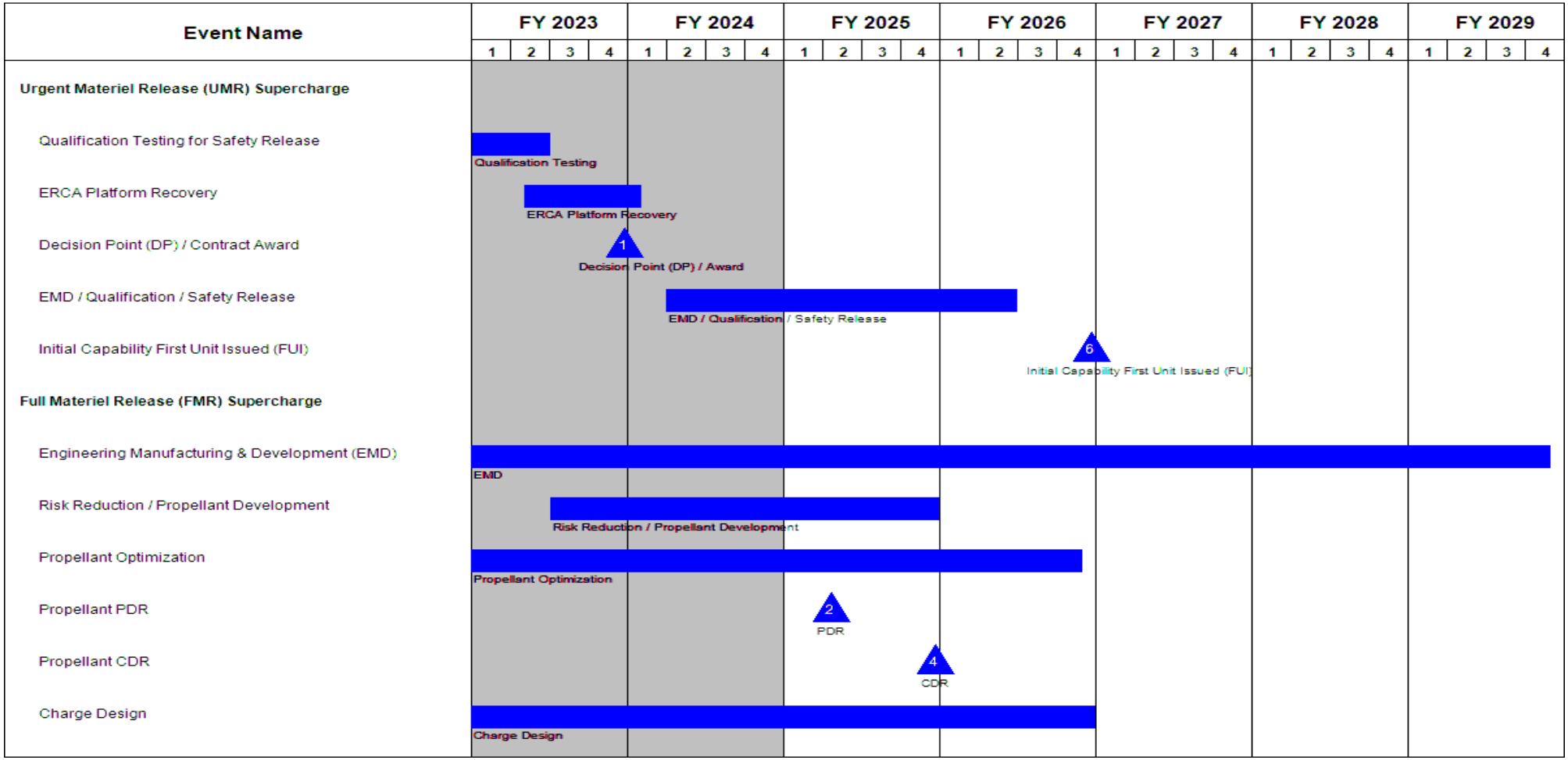

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** BQ3 / *155mm Artillery Propulsion XM654*

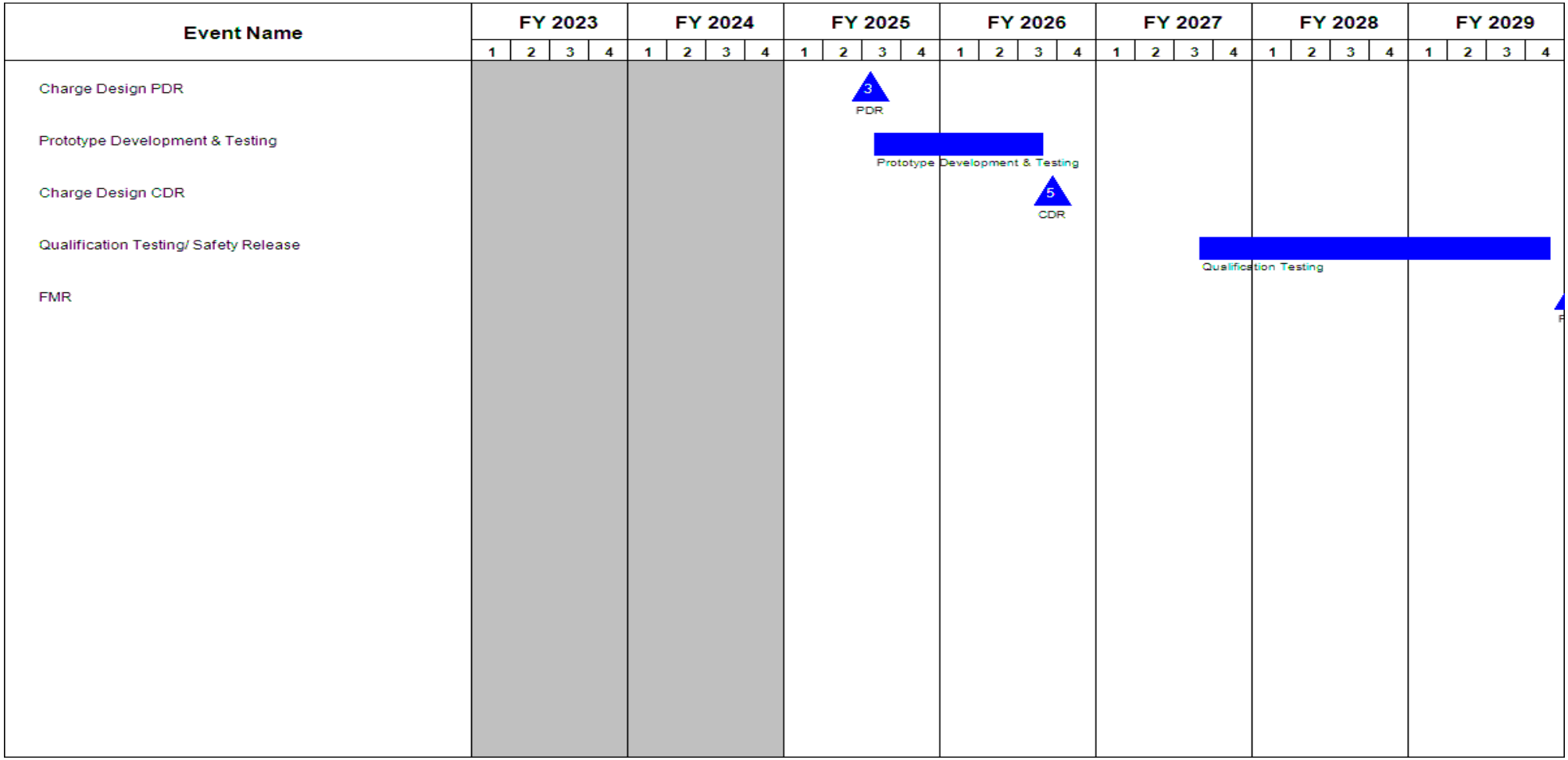

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** BQ3 / *155mm Artillery Propulsion XM654*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Urgent Materiel Release (UMR) Supercharge	1	2022	4	2023
Preliminary Design Review (PDR)	1	2021	1	2021
UMR Prototype Development & Testing	1	2021	2	2022
Qualification Testing for Safety Release	1	2022	2	2023
Critical Design Review (CDR)	3	2022	3	2022
ERCA Platform Recovery	2	2023	1	2024
Decision Point (DP) / Contract Award	4	2023	4	2023
EMD / Qualification / Safety Release	2	2024	2	2026
Initial Capability First Unit Issued (FUI)	4	2026	4	2026
Full Materiel Release (FMR) Supercharge	1	2022	1	2030
Engineering Manufacturing & Development (EMD)	2	2022	4	2029
Risk Reduction / Propellant Development	3	2023	4	2025
Propellant Optimization	2	2022	4	2026
Propellant PDR	2	2025	2	2025
Propellant CDR	4	2025	4	2025
Charge Design	2	2022	4	2026
Charge Design PDR	3	2025	3	2025
Prototype Development & Testing	3	2025	3	2026
Charge Design CDR	3	2026	3	2026
Qualification Testing/ Safety Release	3	2027	4	2029
FMR	1	2030	1	2030

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) BY1 / *Next Generation Combat Vehicle Ammunition*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
BY1: *Next Generation Combat Vehicle Ammunition*	-	27.545	34.028	6.272	-	6.272	-	-	-	-	0.000	67.845
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The total cost of the Next Generation Combat Vehicle Ammunition (NGCV) Middle Tier of Acquisition effort is $122.610 million RDT&E from FY2021 to FY2025. The program is fully funded across the Future Years Defense Program (FYDP).

A. Mission Description and Budget Item Justification

50x228 millimeter (mm) family of ammunition is a critical technology development in response to the Next Generation Combat Vehicle (NGCV) Abbreviated Capability Development Document for weapon qualification, platform integration, and fielding of the XM30 Mechanized Infantry Combat Vehicle (MICV) primary weapon system (XM913). This effort includes the development of three capabilities: The XM1202 Target Practice with Trace (TP-T); the XM1203 Armor Piercing Fin Stabilized Discarding Sabot with Trace (APFSDS-T); and the XM1204 High Explosive Airburst with Trace (HEAB-T). The training cartridge will allow the Warfighter to train in a cost-effective manner and the tactical cartridges will provide enhanced lethality at increased ranges when engaging personnel threats in the open, defilade, and under the cover of urban structures, Anti-Tank Guided Missiles (ATGM) teams, and current and projected future peer armored materiel threats. This effort is operating under Middle Tier Acquisition authority for rapid prototyping to qualify the three munitions in order to support the NGCV Cross Functional Team (CFT) timeline for First Unit Equipped (FUE). Fiscal Year (FY) 2025 funding supports building test assets and conducting Developmental Test & Evaluation (DT&E) on the XM1204 HEAB-T variant.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: 50x228mm Ammunition Development	27.545	34.028	6.272
Description: Qualify 50mm Target Practice with Trace (TP-T), Armor Piercing Fin-Stabilized Discarding Sabot with Trace (APFSDS-T), and High Explosive Airburst with Trace (HEAB-T) ammunition through the rapid prototyping phase.			
FY 2024 Plans: FY 2024 funds support preparation activities for prototype fielding / materiel release on the XM1202 TP-T variant. In addition, FY 2024 funds supports conducting Developmental Test & Evaluation (DT&E), building tests assets for Live Fire Test & Evaluation (LFT&E) and preparing for prototype fielding on the XM1203 APFSDS-T variant. FY 2024 funds also supports building test assets and initiating DT&E on the XM1204 HEAB-T variant.			
FY 2025 Plans: FY 2025 funds support conducting Developmental Test & Evaluation (DT&E) and limited Live Fire Test & Evaluation (LFT&E)			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 funds decrease from FY 2024 due to XM1202 and XM1203 reaching Milestone C and transitioning into Low Rate Initial Production (LRIP).			
Accomplishments/Planned Programs Subtotals	27.545	34.028	6.272

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E80011: *Next Generation Combat Vehicle Ammunition*	-	28.000	20.006	-	20.006	42.261	46.111	46.111	46.572	0.000	229.061

Remarks

D. Acquisition Strategy

Department of Defense Ordnance and Technology Consortium (DOTC) Other Transaction Agreements (OTAs) will be used for rapid prototyping on the three 50 x 228mm ammunition variants: TP-T, APFSDS-T, and HEAB-T. This will consist of Design Engineering Testing (DET), technical reviews, and Developmental Test and Evaluation (DT&E). For APFSDS-T, one contractor was awarded and will complete the rapid prototyping process. For TP-T two contractors were awarded and will complete rapid prototyping process. For HEAB-T, two contractors were awarded rapid prototyping agreements and a down selection decision will be made in FY 2024; then one HEAB-T contractor will complete the rapid prototyping process. The DOTC agreements will conclude upon achieving Milestone C for each cartridge: TP-T and APFSDS-T in FY 2024; and HEAB-T in FY 2025.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
50x228mm APFSDS-T Ammunition Development & Test Evaluation Hardware Contract	C/CPFF	General Dynamics Ordnance and Tactical Systems (GDOTS) : Marion, Illinois	3.929	4.872	Mar 2023	1.800	Jan 2024	-		-		-	Continuing	Continuing	Continuing
50x228mm TP-T Ammunition Development & Test Evaluation Hardware Contract	C/CPFF	General Dynamics Ordnance and Tactical Systems : Marion, Illinois	2.480	-		-		-		-		-	Continuing	Continuing	Continuing
50x228mm TP-T Ammunition Development & Test Evaluation Hardware Contract	C/CPFF	Northrop Grumman Innovation Systems (NGIS) : Plymouth, MN	2.333	3.073	Mar 2023	-		-		-		-	Continuing	Continuing	Continuing
50x228mm HEAB-T Ammunition Design Engineering Test Hardware Contract	C/CPFF	General Dynamics Ordnance and Tactical Systems : Marion, Illinois	11.978	6.681	Mar 2023	9.750	Jan 2024	-		-		-	Continuing	Continuing	Continuing
50x228mm HEAB-T Ammunition Design Engineering Test Hardware Contract	C/CPFF	Northrop Grumman Innovation Systems (NGIS) : Plymouth, MN	11.965	4.234	Mar 2023	9.750	Jan 2024	-		-		-	Continuing	Continuing	Continuing
50x228mm HEAB-T Ammunition Design Engineering Test Hardware Contract Down-select	TBD	TBD : TBD	-	-		-		1.244	Jan 2025	-		1.244	Continuing	Continuing	Continuing
50X228 HEAB-T Warhead Fabrication Optimization	Option/ CPFF	Combat Capabilities Development Command - Chemical Biological Center (CCDC-CBC) : Rock Island, Il	1.751	2.005		4.250	Jan 2024	-		-		-	Continuing	Continuing	Continuing
		Subtotal	34.436	20.865		25.550		1.244		-		1.244	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
50x228mm Ammo Engineering Support	MIPR	Development Command - Armaments Center (DEVCOM - AC) : Picatinny Arsenal, NJ	5.867	4.680	Dec 2022	3.190	Nov 2023	2.963	Jan 2025	-		2.963	Continuing	Continuing	Continuing
		Subtotal	5.867	4.680		3.190		2.963		-		2.963	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
50x228mm Design Engineering Testing	MIPR	Aberdeen Proving Ground (APG) : Aberdeen, MD	8.958	2.000	Dec 2022	-		-		-		-	Continuing	Continuing	Continuing
50x228mm Design Engineering Testing	MIPR	Yuma Proving Ground (YPG) : Yuma, AZ	2.337	-		-		-		-		-	Continuing	Continuing	Continuing
50x228mm Developmental Test and Evaluation (DT&E)	MIPR	Aberdeen Proving Ground (APG) : Aberdeen, MD	3.209	-		5.288	Nov 2023	2.065	Jan 2025	-		2.065	Continuing	Continuing	Continuing
		Subtotal	14.504	2.000		5.288		2.065		-		2.065	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	54.807	27.545		34.028		6.272		-		6.272	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
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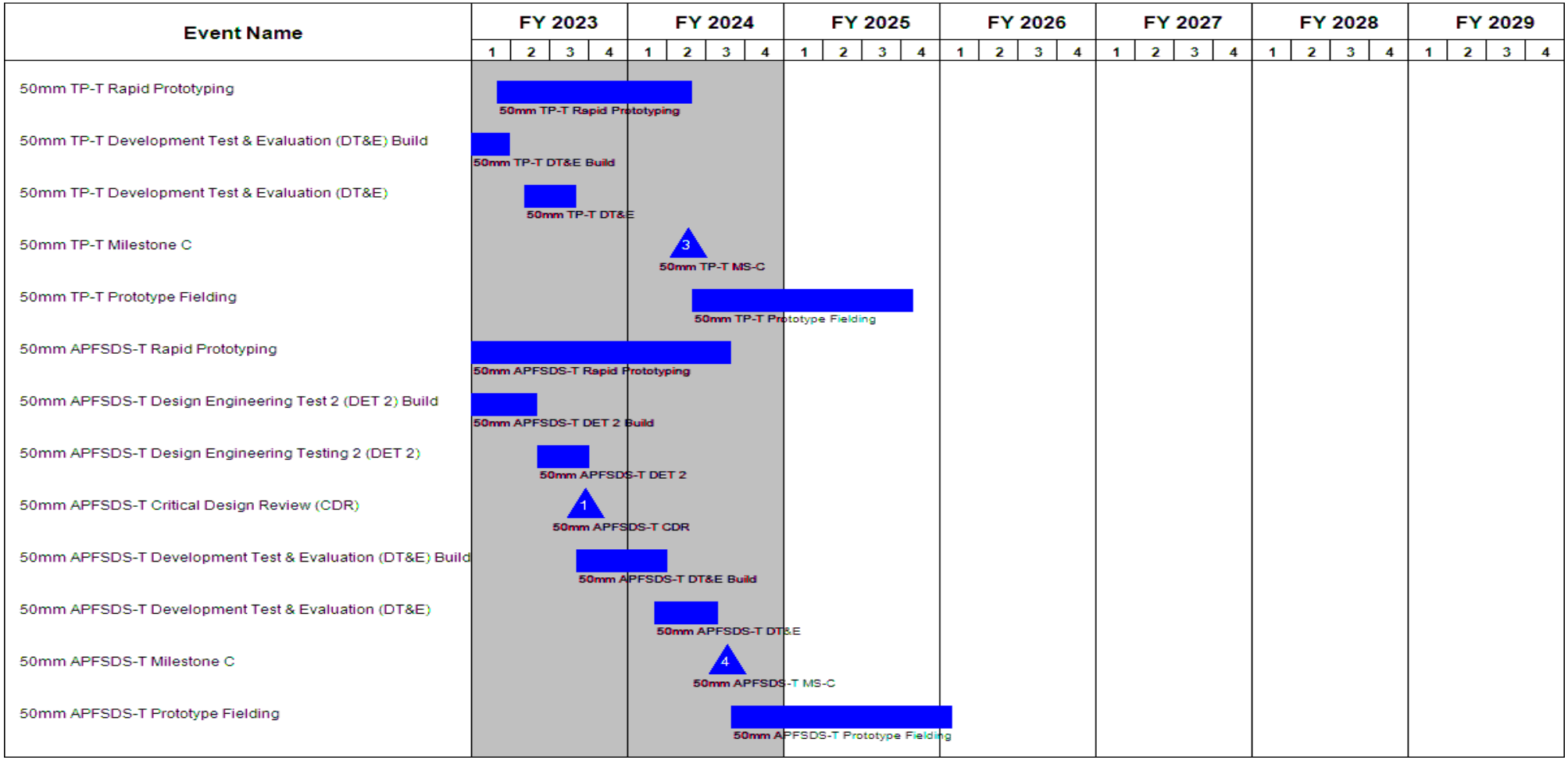


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** BY1 / *Next Generation Combat Vehicle Ammunition*

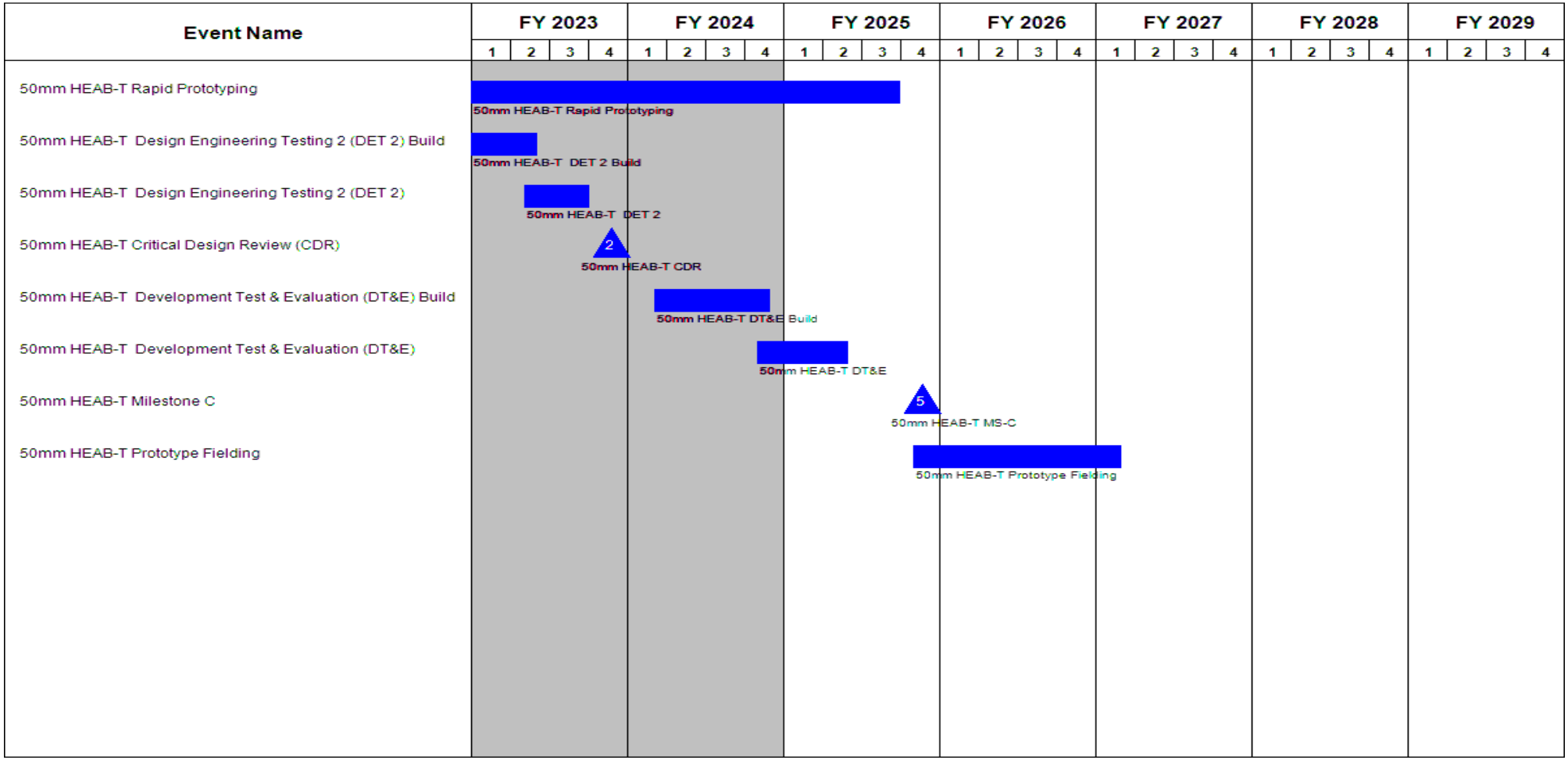


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** BY1 / *Next Generation Combat Vehicle Ammunition*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
50mm TP-T Rapid Prototyping Award	1	2021	1	2021
50mm TP-T Rapid Prototyping	1	2021	2	2024
50mm TP-T Design Engineering Test (DET) Build	3	2021	1	2022
50mm TP-T Design Engineering Test (DET)	1	2022	2	2022
50mm TP-T Critical Design Review (CDR)	2	2022	2	2022
50mm TP-T Development Test & Evaluation (DT&E) Build	2	2022	1	2023
50mm TP-T Development Test & Evaluation (DT&E)	2	2023	3	2023
50mm TP-T Milestone C	2	2024	2	2024
50mm TP-T Prototype Fielding	2	2024	4	2025
50mm APFSDS-T Rapid Prototyping Award	2	2021	2	2021
50mm APFSDS-T Rapid Prototyping	2	2021	3	2024
50mm APFSDS-T Design Engineering Test 1 (DET 1) Build	3	2021	2	2022
50mm APFSDS-T Design Engineering Testing 1 (DET 1)	3	2022	4	2022
50mm APFSDS-T Design Engineering Test 2 (DET 2) Build	4	2022	2	2023
50mm APFSDS-T Design Engineering Testing 2 (DET 2)	2	2023	3	2023
50mm APFSDS-T Critical Design Review (CDR)	3	2023	3	2023
50mm APFSDS-T Development Test & Evaluation (DT&E) Build	3	2023	1	2024
50mm APFSDS-T Development Test & Evaluation (DT&E)	1	2024	3	2024
50mm APFSDS-T Milestone C	3	2024	3	2024
50mm APFSDS-T Prototype Fielding	3	2024	1	2026
50mm HEAB-T Rapid Prototyping Award	4	2020	4	2020
50mm HEAB-T Rapid Prototyping	4	2020	3	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** BY1 / *Next Generation Combat Vehicle Ammunition*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
50mm HEAB-T Design Engineering Testing 1 (DET 1) Build	4	2021	2	2022
50mm HEAB-T Design Engineering Testing 1 (DET 1)	3	2022	3	2022
50mm HEAB-T Design Engineering Testing 2 (DET 2) Build	3	2022	2	2023
50mm HEAB-T Design Engineering Testing 2 (DET 2)	2	2023	3	2023
50mm HEAB-T Critical Design Review (CDR)	4	2023	4	2023
50mm HEAB-T Development Test & Evaluation (DT&E) Build	1	2024	4	2024
50mm HEAB-T Development Test & Evaluation (DT&E)	4	2024	2	2025
50mm HEAB-T Milestone C	4	2025	4	2025
50mm HEAB-T Prototype Fielding	4	2025	1	2027

Note

Notes:
Target Practice with Trace (TP-T)
Armor-Piercing Fin-Stabilized Discarding Sabot with Trace (APFSDS-T)
High Explosive Airburst with trace (HEAB-T)

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) CE3 / *Precision Munition (Sniper)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CE3: *Precision Munition (Sniper)*	-	4.993	-	6.513	-	6.513	4.539	3.046	-	-	0.000	19.091
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project CE3: Precision Munition (Sniper) FY 2024 is a Skip-Year.

A. Mission Description and Budget Item Justification

The Precision Munition (Sniper) project is a critical technology development in response to the Precision Munition Capabilities Development Documents (CDD) for the ammunition required to support the Precision Sniper Rifle (PSR) / sniper weapons systems. The objective is to transfer the latest lethality technology into the suite of ammunition used by snipers. The Precision Munition improvement is split into three capability areas: Anti-Materiel (AM), Improved Performance Round (IPR), and Subsonic. The AM and IPR capabilities will enhance lethal effects at greater distances. The Subsonic capability will increase soldier survivability at close range by providing a low-sound signature munition that is undetectable to the enemy. Fiscal Year (FY) 2025 funding will initiate Engineering and Manufacturing Development (EMD) activities, develop prototypes, and support a Solider Touch Point (STP) / User Evaluation for the .338 AM Cartridges.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Develop and Improve Ammunition for Sniper Weapons Systems.	4.993	-	6.513
Description: Develop, demonstrate, and qualify new sniper ammunition to defeat hard targets for the Precision Sniper Rifle (PSR) and other sniper weapons systems. Integrate latest lethality technology into the current suite of sniper ammunition for the Precision Sniper Rifle (PSR) and other sniper weapons systems. Integrate latest lethality technology into the current subsonic ammunition for the Precision Sniper Rifle (PSR) and other sniper weapons systems. ***FY 2025 Plans:*** FY 2025 funding will initiate Engineering and Manufacturing Development (EMD) efforts. Award contract to develop prototype ammunition, conduct a Soldier Touch Point (STP), and perform lethality testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding increase reflects EMD activity requirements.			
Accomplishments/Planned Programs Subtotals	4.993	-	6.513

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** CE3 / *Precision Munition (Sniper)*

D. Acquisition Strategy

The Precision Munition (Sniper) utilizes Other Transaction Authority (OTA) to acquire and/or mature US Government design. Contracts to acquire parts and raw materials are competitive. The Government is prototyping and testing projectiles.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) CE3 / *Precision Munition (Sniper)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Anti-Materiel Development Contracts	C/FFP	Vista : Anoka, Minnesota	3.146	2.193	Feb 2023	-		3.050	Mar 2025	-		3.050	Continuing	Continuing	Continuing
		Subtotal	3.146	2.193		-		3.050		-		3.050	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Anti-Materiel Support	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	1.600	2.100	Oct 2022	-		1.963	Mar 2025	-		1.963	Continuing	Continuing	Continuing
Improved Performance Round Support	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	0.500	0.100	Oct 2022	-		-		-		-	Continuing	Continuing	Continuing
Subsonic Support	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	0.500	0.100	Oct 2022	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	2.600	2.300		-		1.963		-		1.963	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) CE3 / *Precision Munition (Sniper)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Lethality Testing and Analysis	MIPR	US Army Research Lab (ARL) : Aberdeen, Maryland	1.900	0.500	Oct 2022	-		1.150	Mar 2025	-		1.150	Continuing	Continuing	Continuing
User Evaluation Solider Touch Point	MIPR	Maneuver Battle Labs : Fort Benning, Georgia	-	-		-		0.350	Mar 2025	-		0.350	0.000	0.350	-
		Subtotal	1.900	0.500		-		1.500		-		1.500	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.646	4.993		-		6.513		-		6.513	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** CE3 / *Precision Munition (Sniper)*

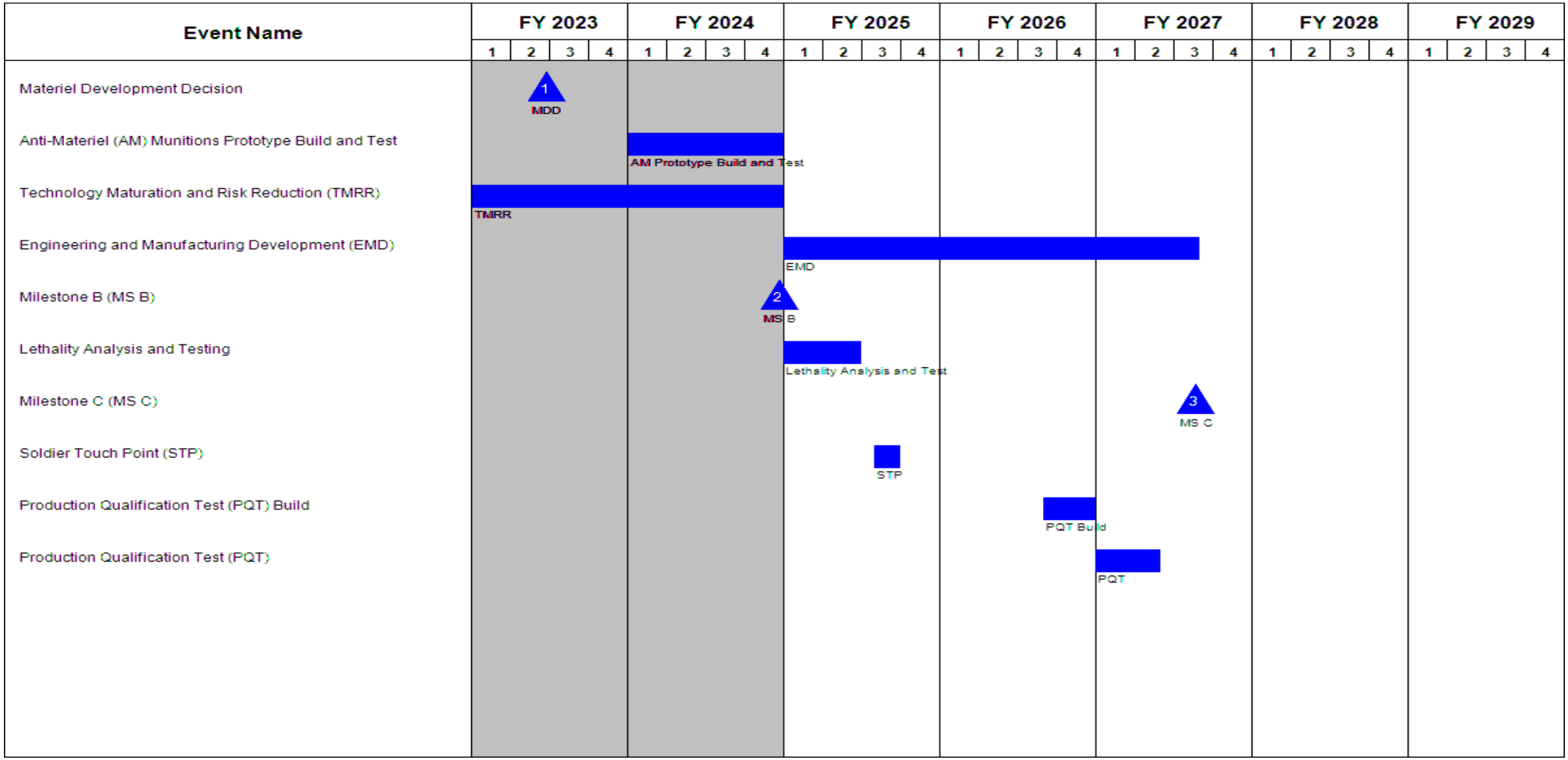


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** CE3 / *Precision Munition (Sniper)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Materiel Development Decision	2	2023	2	2023
Anti-Materiel (AM) Munitions Prototype Build and Test	1	2024	4	2024
Technology Maturation and Risk Reduction (TMRR)	1	2023	4	2024
Engineering and Manufacturing Development (EMD)	1	2025	3	2027
Milestone B (MS B)	4	2024	4	2024
Lethality Analysis and Testing	1	2025	2	2025
Milestone C (MS C)	3	2027	3	2027
Soldier Touch Point (STP)	3	2025	3	2025
Production Qualification Test (PQT) Build	3	2026	4	2026
Production Qualification Test (PQT)	1	2027	2	2027

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) DC9 / *30mm MMPA M-SHORAD INC 3*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
DC9: *30mm MMPA M-SHORAD INC 3*	-	-	18.936	11.303	-	11.303	7.846	5.128	4.484	4.529	0.000	52.226
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

30mm Multi-Mode Proximity Airburst (MMPA) Maneuver Short Range Air Defense Increment 3 (M-SHORAD INC 3): The 30mm MMPA M-SHORAD INC 3 / Project DC9 funds the development of the 30mm XM1223 MMPA munition and respective weapon contact setter under the Middle Tier of Acquisition (MTA) authority for rapid prototyping. The objective is to enhance the operational effectiveness of the M-SHORAD Inc 3 platform, Mobile-Low, Slow, Small Unmanned Aircraft Integrated Defeat System (M-LIDS) and any other Joint Force platforms that are equipped with a 30mm weapon system and have a Counter Unmanned Aerial Systems (C-UAS) mission. The programmable fuze modes in the munition include proximity airburst to defeat personnel in the open and small Unmanned Aerial System (UAS) targets, proximity airburst delay to defeat personnel in defilade, gated proximity airburst to minimize collateral damage in cluttered environments, mechanical point detonate to defeat light materiel targets, and self-destruct to minimize collateral damage. The XM1223 will allow the platforms to conduct counter-UAS missions while retaining the ability to quickly transition to ground targets without having to swap ammunition. FY 2025 funding supports continuing the XM1223 development, building prototypes for Design Engineering Testing (DET), and conducting DET.

The total cost of the 30 millimeter (mm) MMPA Middle Tier of Acquisition effort is $59.969 million RDT&E from FY2024 to FY2027.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: EMD 30x113mm MMPA Munition ***Description:*** Develop, demonstrate, and qualify a new munition for the M-SHORAD Inc 3, M-LIDS and other Joint Force platforms equipped with a 30mm weapon system. ***FY 2024 Plans:*** Achieve Milestone B (MS-B), contract award up to two contractors, conduct Preliminary Design Review (PDR), and develop prototypes for Design Engineering Tests. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease reflects shifting of efforts from Engineering Manufacturing Development (EMD) to Rapid Prototyping based on new approved acquisition strategy.	-	18.936	-
Title: Rapid Prototyping 30mm MMPA ***Description:*** Develop, demonstrate, and qualify a new munition for the M-SHORAD Inc 3, M-LIDS and other Joint Force platforms equipped with a 30mm weapon system.	-	-	11.303

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** DC9 / *30mm MMPA M-SHORAD INC 3*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 Plans: Build Design Engineering Test (DET) prototypes and conduct DET at government test sites for a potential down selection prior to Critical Design Review. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increase reflects shifting of efforts from engineering design and initial hardware procurement, to support of prototype builds and testing.			
Accomplishments/Planned Programs Subtotals	-	18.936	11.303

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• F98811: *30 MM MMPA*	-	-	0.000	-	0.000	-	-	22.474	26.437	0.000	48.911

Remarks

D. Acquisition Strategy

The 30mm XM1223 MMPA munition program will utilize the Middle Tier of Acquisition (MTA) authority for rapid prototyping to develop ammunition concepts/designs. Proposals will be requested from Industry to develop a 30mm Multi-Mode Proximity Airburst (MMPA) tactical cartridge that will meet Army Performance Specifications and Maneuver Short Range Air Defense Increment 3 (M-SHORAD Inc 3) Abbreviated Capability Development Document (A-CDD) Requirements. The Government will award up to two contracts using an Other Transaction Agreement (OTA) to support development for Design Engineering Tests (DET) and Developmental Test & Evaluation (DT&E) prior to Milestone C in FY 2027. The government will have the option to award contracts for production.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) DC9 / *30mm MMPA M-SHORAD INC 3*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MMPA EMD Contract 1	C/CPFF	TBD : TBD	-	-		8.114	Jan 2024	1.125	Jan 2025	-		1.125	Continuing	Continuing	Continuing
MMPA EMD Contract 2	C/CPFF	TBD : TBD	-	-		8.114	Jan 2024	1.125	Jan 2025	-		1.125	Continuing	Continuing	Continuing
MMPA Fuze Setter Development	C/CPFF	TBD : TBD	-	-		1.000	Feb 2024	0.800	Jan 2025	-		0.800	Continuing	Continuing	Continuing
MMPA EMD Down-Select	C/CPFF	TBD : TBD	-	-		-		5.560	Aug 2025	-		5.560	Continuing	Continuing	Continuing
		Subtotal	-	-		17.228		8.610		-		8.610	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support DEVCOM AC	MIPR	Development Command - Armaments Center (DEVCOM AC) : Picatinny Arsenal, NJ	-	-		1.446	Jan 2024	1.793	Nov 2024	-		1.793	Continuing	Continuing	Continuing
		Subtotal	-	-		1.446		1.793		-		1.793	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing (Fuze Setter and DET)	MIPR	Aberdeen Test Center (Aberdeen Proving Grounds) : Aberdeen, MD	-	-		0.262	Jan 2024	0.900	Feb 2025	-		0.900	Continuing	Continuing	Continuing
		Subtotal	-	-		0.262		0.900		-		0.900	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		18.936		11.303		-		11.303	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) DC9 / *30mm MMPA M-SHORAD INC 3*	

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** DC9 / *30mm MMPA M-SHORAD INC 3*

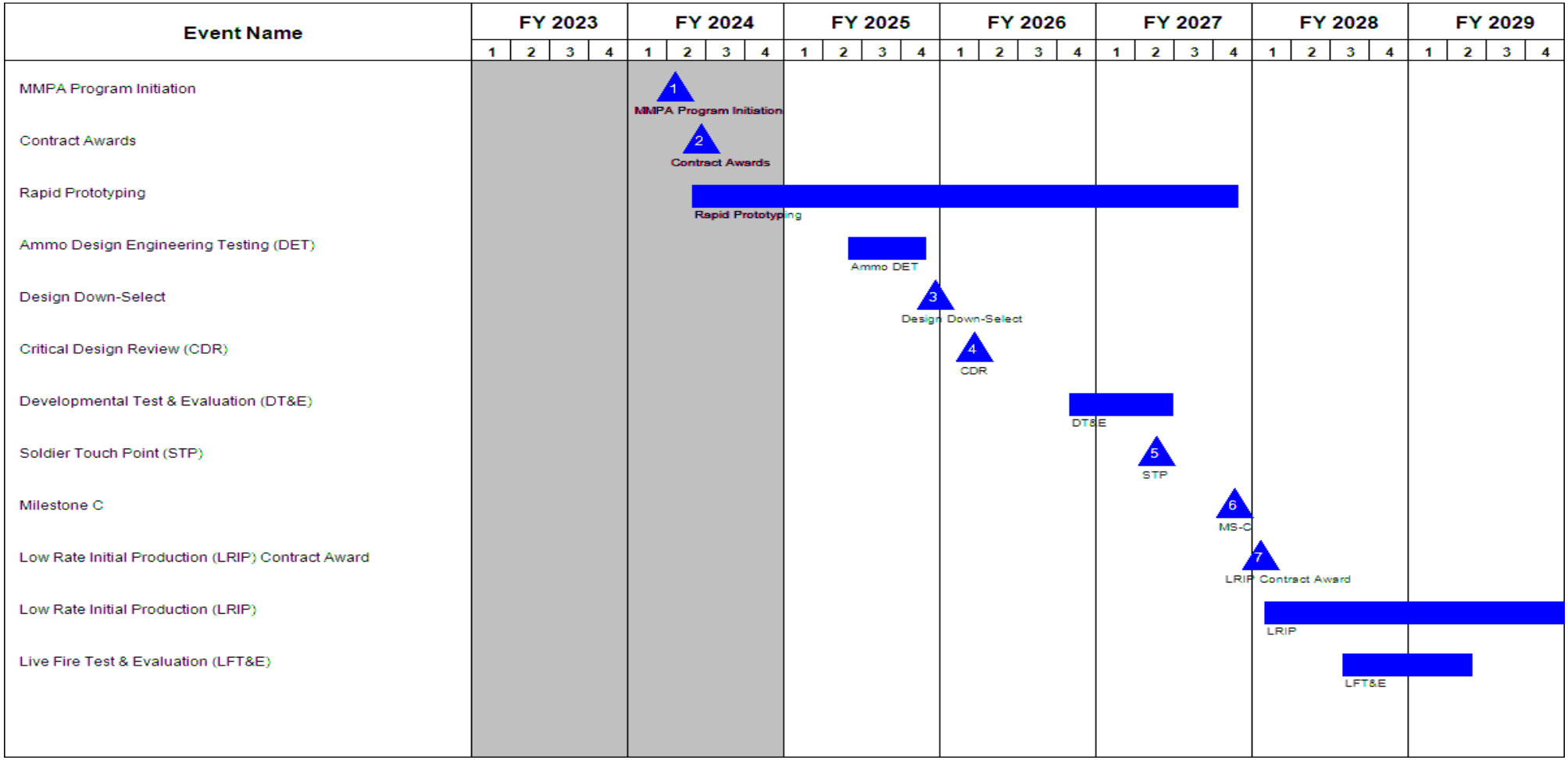


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** DC9 / *30mm MMPA M-SHORAD INC 3*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MMPA Program Initiation	2	2024	2	2024
Contract Awards	2	2024	2	2024
Rapid Prototyping	2	2024	4	2027
Ammo Design Engineering Testing (DET)	2	2025	4	2025
Design Down-Select	4	2025	4	2025
Critical Design Review (CDR)	1	2026	1	2026
Developmental Test & Evaluation (DT&E)	4	2026	2	2027
Soldier Touch Point (STP)	2	2027	2	2027
Milestone C	4	2027	4	2027
Low Rate Initial Production (LRIP) Contract Award	1	2028	1	2028
Low Rate Initial Production (LRIP)	1	2028	1	2030
Live Fire Test & Evaluation (LFT&E)	3	2028	2	2029

Note

MMPA - Multi-Mode Proximity Airburst

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EC4 / *Non-Standard Simulator Munitions*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EC4: *Non-Standard Simulator Munitions*	-	2.102	2.188	0.411	-	0.411	0.413	0.417	0.421	0.425	0.000	6.377
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project EC4 Non-Standard Simulator Munitions will standardize various pyrotechnics that simulate battlefield effects. The Army's Combat Training Centers (CTCs) are currently using non-standard munitions to replicate both conventional and asymmetric warfare battlefield effects. These modified commercial-off-the-shelf products have not been type classified or material released and are not safe or sustainable for use by Soldiers. This effort will develop and demonstrate various pyrotechnics/ simulators to replicate both conventional and asymmetric warfare battlefield affects such as:
- Black smoke signature (burning vehicles, buildings, and equipment);
- Yellow smoke signature (chemical, biological or nuclear effects);
- Mini Blast to simulate hostile fire and small Improvised Explosive Devices (IEDs) during mounted operations in urban terrain;
- Micro pyrotechnics to simulate indoor hostile fire and IED effects that are capable of being integrated into existing facilities;
- Rocket Propelled Grenade (RPG) simulators to replicate the flight of a Rocket Propelled Grenade;
- Macro Pyro to simulate hostile fire, booby trap and IED Simulations indoor and outdoors;
- High Order Blast Effect (HiOBE) used to replicate a Vehicle Borne Improvised Explosive Device (VBIED), building explosions, and other significant explosive events;
- Artillery airburst simulator to replicate indirect fire;
- Antitank Guided Missile and Rocket (AGMR) simulator to replicate surface to air missile or shoulder launched rocket;
- Tracer Fire-back simulator to replicate enemy small arms fire and anti-aircraft fire;
- Longer burning remotely and electrically initiated smoke pots and smoke grenades of various colors.

Standardization will reduce training costs, eliminate redundancies between systems and mitigate environmental concerns and safety risks associated with realistic scenario-based training. FY 2025 funding will support the development of Tracer, HiOBE, Micro Pyro, Colored Smoke Pots and Grenades.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Standardize Special Use Ammunition	2.102	2.188	0.411
Description: Standardize non-standard pyrotechnic battlefield effects currently used by CTCs.			
FY 2024 Plans: FY 2024 will support the completion of RPG, Mini Blast EMD and prepare Milestone C documentation. Funding will also support continuation of Tracer fire back and HiOBE EMD efforts.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EC4 / *Non-Standard Simulator Munitions*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 will support the completion of Tracer Fire-back and HiOBE EMD, preparation of Milestone C documentation, and initiation of alternative smoke pot and smoke grenade effects. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding decrease reflects slow smoke pot and smoke grenade development and qualification.			
Accomplishments/Planned Programs Subtotals	2.102	2.188	0.411

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E88404: *SIMULATORS, Non-Standard, Special Effects, f/CTCs*	0.296	0.296	0.000	-	0.000	-	-	-	0.003	0.000	0.595
• E48417: *SIMULATOR, TARGET KILL, XM175*	-	0.652	0.768	-	0.768	0.774	0.780	0.786	0.794	0.000	4.554
• E91114: *SIMULATOR, LAUNCHING, ANTITANK GUIDED MISSILE AND*	-	0.476	0.410	-	0.410	0.406	0.413	0.416	0.422	0.000	2.543
• E91116: *SIMULATOR, PROJECTILE AIR BURST, EXPLOSIVE: XM181*	-	0.473	0.370	-	0.370	0.372	0.392	0.373	0.379	0.000	2.359
• E50311: *SIMULATOR, CHEM ATTACK, YELLOW SMOKE*	-	0.056	0.065	-	0.065	0.046	0.067	0.067	0.066	0.000	0.367
• E48413: *SIMULATOR, INDOOR WEAPONS FIRE*	-	-	0.000	-	0.000	0.129	0.156	0.158	0.160	Continuing	Continuing
• E48416: *SIMULATOR, HIGH ORDER BLAST EFFECT (HIOBE)*	-	-	0.000	-	0.000	0.556	0.561	0.566	0.576	Continuing	Continuing
• E48415: *SIMULATOR, INCOMING ROCKET PROPELLED GRENADE (RPG)*	-	-	0.000	-	0.000	0.301	0.305	0.309	0.314	Continuing	Continuing
• E91112: *SIMULATOR, PROJECTILE GROUND BURST: MINI BLAST: XM*	-	-	0.000	-	0.000	0.225	0.227	0.229	0.229	0.000	0.910
• E48418: *SIMULATOR, SMALL ARMS TRACER FIRE-BACK*	-	-	0.000	-	0.000	-	0.403	0.408	0.415	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EC4 / *Non-Standard Simulator Munitions*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E48414: *SIMULATOR, OUTDOOR WEAPONS FIRE*	-	-	0.000	-	0.000	-	0.181	0.183	0.185	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Acquisition strategy is to incrementally develop and field a family of special use ammunition. Initial Battlefield Effects Simulators (BES) to be fielded will be the Artillery Airburst/Antitank Guided Missile and Rocket (AGMR), Black and Yellow Smoke simulators followed by additional training simulators as required in the Future Army System of Integrated Targets (FASIT) Capability Production Document (CPD). The second iteration of special use ammunition includes RPG on a wire, Tracer Fire-back, Mini Blast, and HiOBE. The third iteration of special use ammunition includes smoke pot and smoke grenade upgrades to simulate longer lasting and accurate battlefield effects.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EC4 / *Non-Standard Simulator Munitions*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Smoke Pot & Smoke Grenade Developmental Hardware	C/CPFF	TBD : TBD	-	-		-		0.201	May 2025	-		0.201	Continuing	Continuing	-
HiOBE Developmental Hardware	C/CPFF	TBD : TBD	-	-		0.602	May 2024	-		-		-	0.000	0.602	-
Tracer Qualification Hardware	C/CPFF	SAIC : Reston, VA	-	0.591	Nov 2022	-		-		-		-	0.000	0.591	-
		Subtotal	-	0.591		0.602		0.201		-		0.201	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	5.288	1.181	Dec 2022	1.229	Oct 2023	0.109	Oct 2024	-		0.109	Continuing	Continuing	-
		Subtotal	5.288	1.181		1.229		0.109		-		0.109	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HIOBE Qualification Testing	MIPR	NSWC Dahlgren : Dahlgren, VA	-	-		-		0.101	May 2025	-		0.101	Continuing	Continuing	-
RPG on a Wire & Tracer Fireback Qualification Testing	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	-	-		0.300	May 2024	-		-		-	0.000	0.300	-
HIOBE EMQ Qualification	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	-	-		0.057	Jul 2024	-		-		-	0.000	0.057	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EC4 / *Non-Standard Simulator Munitions*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tracer EMQ Qualification and Mini Blast & Yellow Smoke Qualification Testing	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	-	0.272	Apr 2023	-		-		-		-	0.000	0.272	-
Mini Blast Fast Cook Off Testing	MIPR	NSWC Dahlgren : Dahlgren, VA	-	0.058	Aug 2023	-		-		-		-	0.000	0.058	-
		Subtotal	-	0.330		0.357		0.101		-		0.101	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.288	2.102		2.188		0.411		-		0.411	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EC4 / *Non-Standard Simulator Munitions*

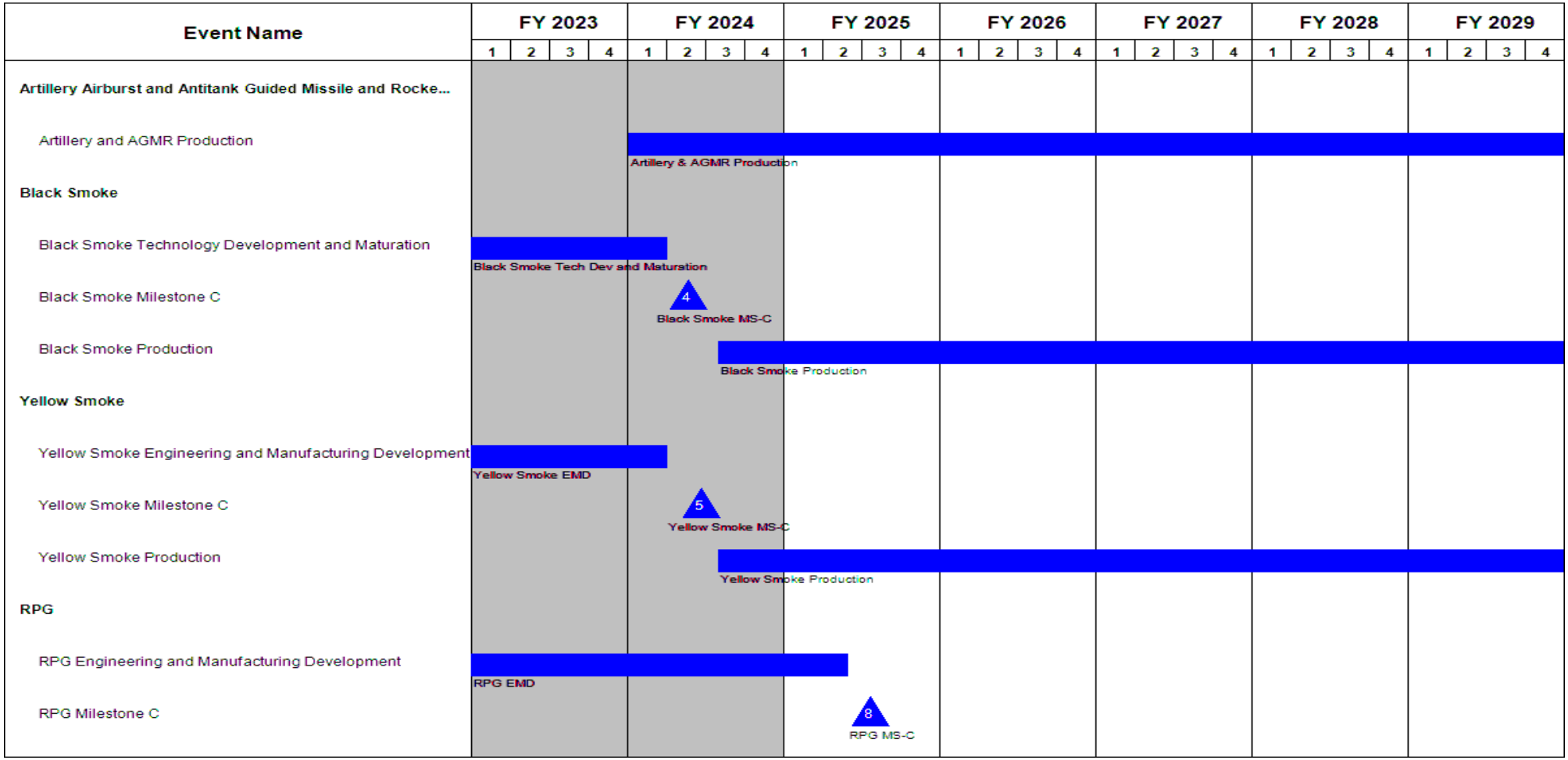


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EC4 / *Non-Standard Simulator Munitions*

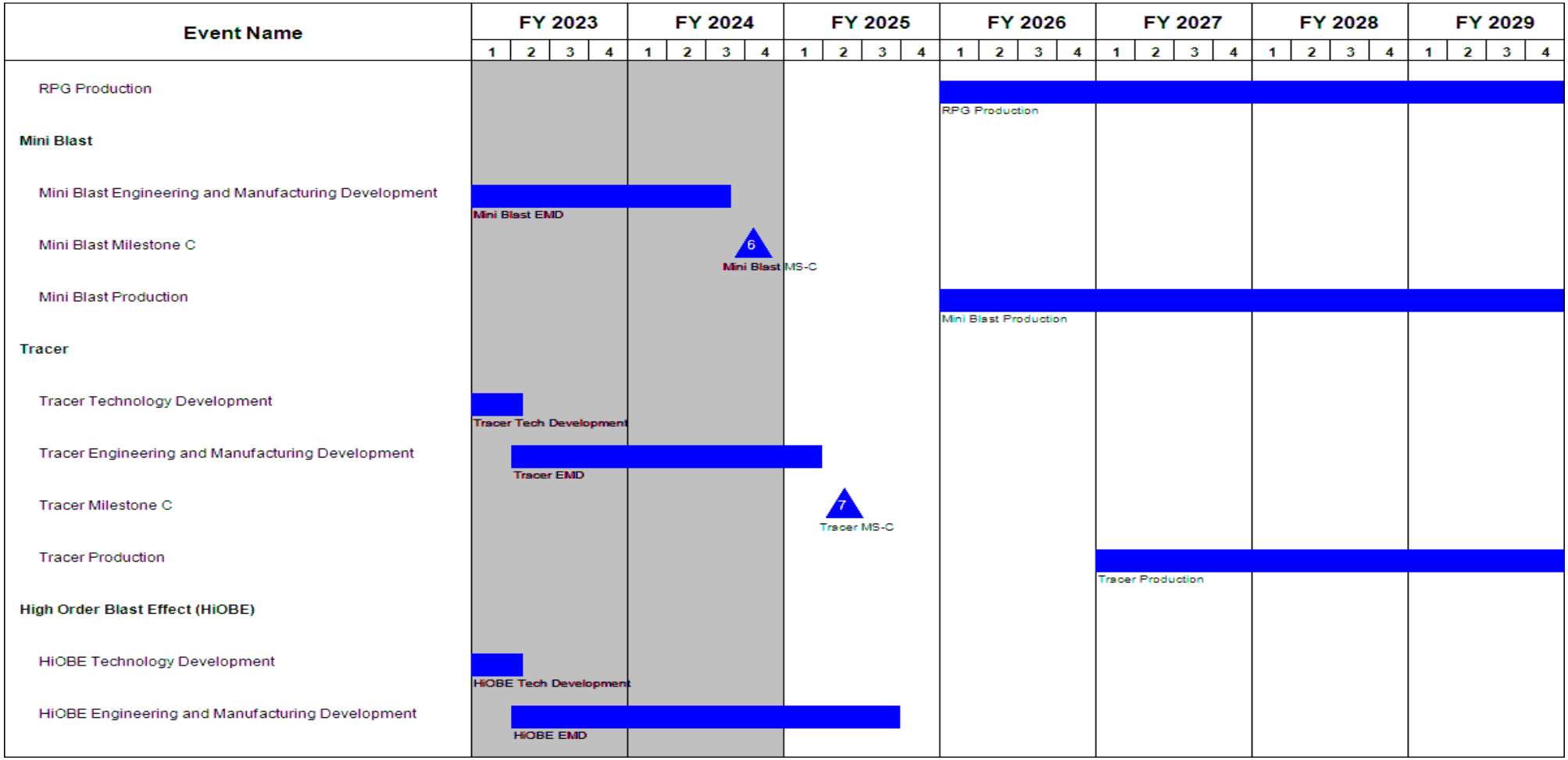


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EC4 / *Non-Standard Simulator Munitions*

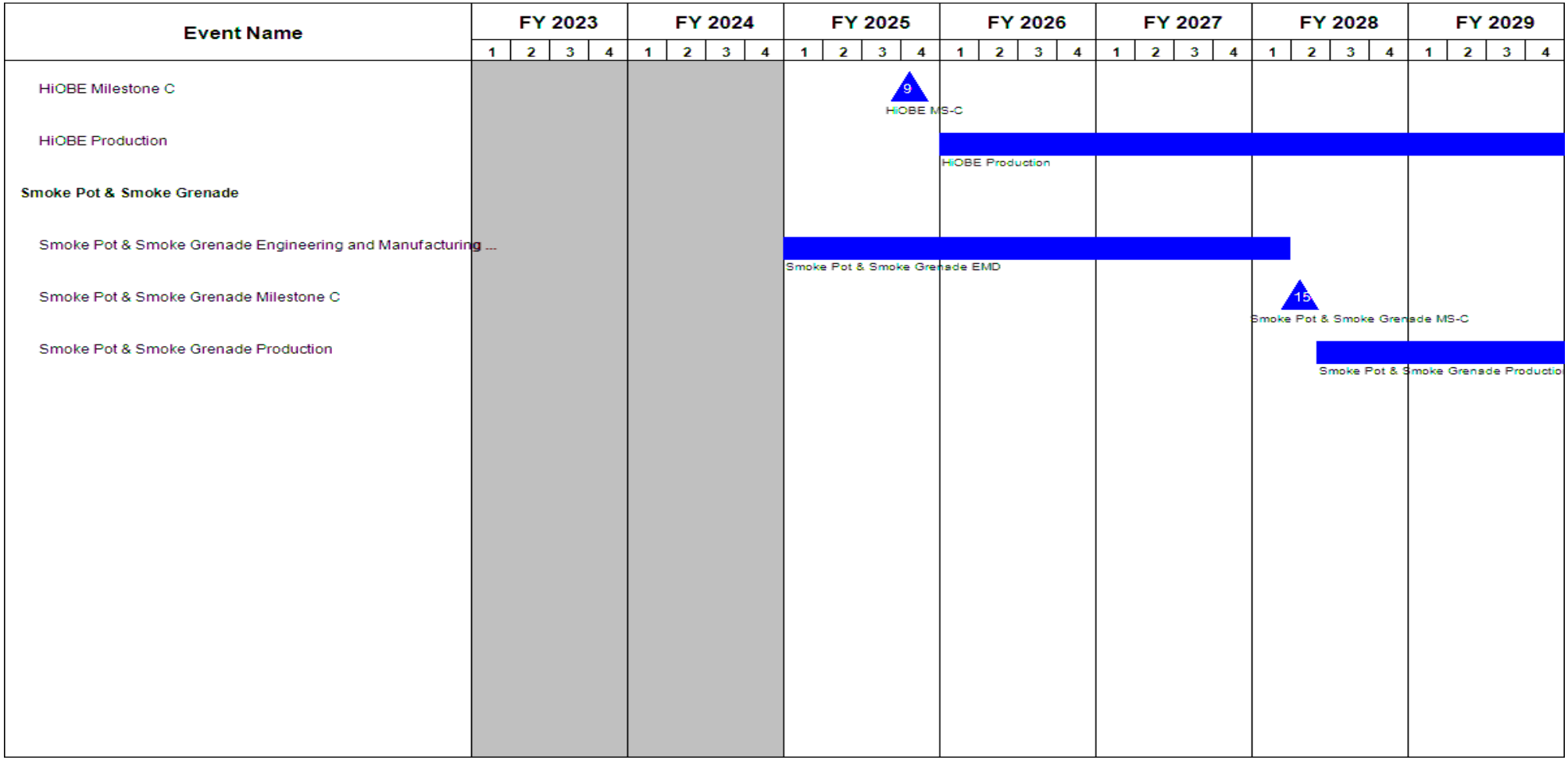


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EC4 / *Non-Standard Simulator Munitions*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Artillery Airburst and Antitank Guided Missile and Rocket (AGMR)	1	2024	1	2024
Artillery and AGMR Type Classification	4	2021	4	2022
Artillery and AGMR Production	1	2024	4	2029
Black Smoke	1	2024	1	2024
Black Smoke Technology Development and Maturation	4	2019	1	2024
Black Smoke Milestone C	2	2024	2	2024
Black Smoke Production	3	2024	4	2029
Yellow Smoke	1	2024	1	2024
Yellow Smoke Technology Development	2	2020	2	2022
Yellow Smoke Engineering and Manufacturing Development	2	2022	1	2024
Yellow Smoke Milestone C	2	2024	2	2024
Yellow Smoke Production	3	2024	4	2029
RPG	1	2026	1	2026
RPG Technology Development	2	2020	2	2022
RPG Engineering and Manufacturing Development	2	2022	2	2025
RPG Milestone C	3	2025	3	2025
RPG Production	1	2026	4	2029
Mini Blast	1	2026	1	2026
Mini Blast Technology Development	2	2020	2	2022
Mini Blast Engineering and Manufacturing Development	2	2022	3	2024
Mini Blast Milestone C	4	2024	4	2024
Mini Blast Production	1	2026	4	2029

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EC4 / *Non-Standard Simulator Munitions*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Tracer	1	2027	1	2027
Tracer Technology Development	2	2022	1	2023
Tracer Engineering and Manufacturing Development	2	2023	1	2025
Tracer Milestone C	2	2025	2	2025
Tracer Production	1	2027	1	2032
High Order Blast Effect (HiOBE)	1	2026	1	2026
HiOBE Technology Development	2	2022	1	2023
HiOBE Engineering and Manufacturing Development	2	2023	3	2025
HiOBE Milestone C	4	2025	4	2025
HiOBE Production	1	2026	4	2030
Smoke Pot & Smoke Grenade	1	2028	1	2028
Smoke Pot & Smoke Grenade Engineering and Manufacturing Development	1	2025	1	2028
Smoke Pot & Smoke Grenade Milestone C	2	2028	2	2028
Smoke Pot & Smoke Grenade Production	2	2028	4	2034

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EL9 / *Ammunitions Logistics Prototyping*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EL9: *Ammunitions Logistics Prototyping*	-	0.985	1.052	1.074	-	1.074	1.076	1.087	1.099	1.110	0.000	7.483
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project supports the future force by improving the distribution, management, reliability, and survivability of ammunition through the advanced development, integration, and demonstration of logistics system enablers. These enablers will improve the efficiency and effectiveness of ammunition operations, to include retrograde, while reducing the logistics footprint on the battlefield. Technology areas addressed include ammunition handling, distribution, and management (strategic and tactical), prognostics, diagnostics, asset visibility, explosives safety, and autonomous adaptable packaging and palletization. The efficient deployment and sustainment of reliable ammunition is vital to success on the battlefield. This Project enhances the operational effectiveness of the ammunition logistics system to ensure the distribution of reliable ammunition to the Warfighter. Fiscal Year (FY) 2025 funding will be focused on integrating Commercial Off-the-shelf (COTS) and/or relatively mature technologies into ammunition resupply enablers, developing interfaces with Programs/Systems of Records as required by the Contested Logistics, Long Range Precision Fires (LRPF), Next-Generation Combat Vehicles (NGCV), Future Vertical Lift (FVL), Network, and Soldier Lethality (SL) Cross Functional Teams (CFT). They will be focused on ensuring that a low-risk resupply process solution exists to support the success of the Maneuver Force.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Munitions Survivability and Logistics Enablers	0.985	1.052	1.074
Description: This program will develop ammunition logistics systems that improve munitions survivability and logistics. ***FY 2024 Plans:*** Integrate mature commercial off the shelf environmental sensors to provide a capability for munitions health monitoring during tactical transportation and distribution in formations forward of the Ammunition Support Areas (ASA). Leverage recently completed JPEO A&A RDT&E system engineering studies/analysis to inform operational temperature exposure thresholds as critical selection criteria of commercial technologies. Integration efforts will primarily focus on tactical Cannon Artillery operations to improve operational availability of ammunition and associated components at the tactical edge. The surveillance system to be transitioned to PM SPHS will ensure artillery ammunition is prepared, protected, and monitored prior to use to improve the security and survivability of the ammunition supply chain within the formation. ***FY 2025 Plans:*** Integrate mature COTS or Army developed technology enablers to provide a capability for enhanced ammunition supply chain during tactical transportation and distribution in formations forward of the Ammunition Support Areas (ASA). Leverage recently completed JPEO A&A Research Development Test & Evaluation (RDT&E) funds system engineering studies/analysis to inform operational performance thresholds as critical selection criteria of commercial technologies. Integration efforts will primarily focus			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EL9 / *Ammunitions Logistics Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
on tactical Cannon Artillery operations to improve operational availability of ammunition and associated components at the tactical edge and will be applicable to all other indirect fire weapons with fire missions dictated by Advanced Field Artillery Tactical Data System (AFATDS). The operational system to be transitioned to PM Self-Propelled Howitzer Systems (SPHS) and other relevant PMs within PEO Ground Combat Systems (GCS). Technologies matured and demonstrated through Soldier touch points will ensure artillery ammunition is prepared, protected, serviceable and monitored prior to use to improve the storage, management and distribution within the formation. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2024 to FY 2025 funding increase represents minor increase due to economic assumptions.			
Accomplishments/Planned Programs Subtotals	0.985	1.052	1.074

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The acquisition strategy is to work directly with the relevant PMs (Combat Ammunition Systems (CAS) & Self Propelled Howitzer (SPH)) to support the development of a resupply system/process to meet the needs of the Extended Range Canon Artillery, Next Generation Howitzer, and other emerging indirect fire weapon systems. The resultant capabilities will then be transitioned to the appropriate PM for further maturation and/or fielding.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EL9 / *Ammunitions Logistics Prototyping*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor	C/TBD	TBD : TBD	0.475	0.748	Jan 2023	-		-		-		-	0.000	1.223	-
Contractor	TBD	CR Tactical : Pittsburgh, PA	-	-		0.447	Jan 2024	0.445	Jan 2025	-		0.445	0.000	0.892	-
Contractor	TBD	Cybernet : Ann Arbor, MI	-	-		0.400	Nov 2023	0.404	Nov 2024	-		0.404	0.000	0.804	-
		Subtotal	0.475	0.748		0.847		0.849		-		0.849	0.000	2.919	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DEVCOM, Armaments Center	MIPR	Picatinny Arsenal : NJ	1.717	0.237	Mar 2023	0.205	Mar 2023	0.225	Mar 2023	-		0.225	0.000	2.384	-
		Subtotal	1.717	0.237		0.205		0.225		-		0.225	0.000	2.384	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.192	0.985		1.052		1.074		-		1.074	0.000	5.303	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EL9 / *Ammunitions Logistics Prototyping*

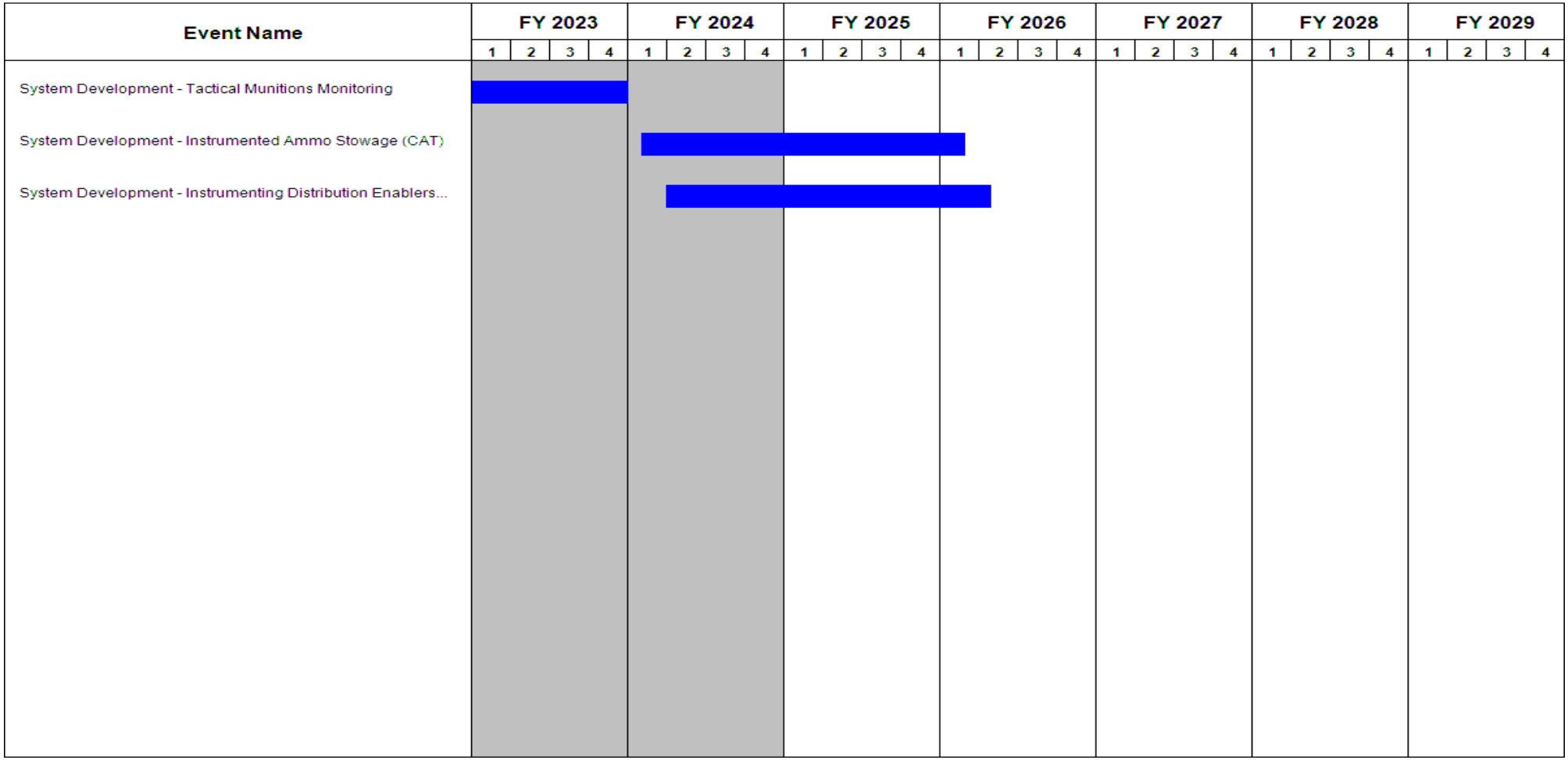


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EL9 / *Ammunitions Logistics Prototyping*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
System Development - Tactical Munitions Monitoring	1	2022	4	2023
System Development - Instrumented Ammo Stowage (CAT)	1	2024	1	2026
System Development - Instrumenting Distribution Enablers (PLS)	2	2024	2	2026

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP2 / *Shoulder-Launched Munitions*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EP2: *Shoulder-Launched Munitions*	-	0.600	2.551	-	-	-	-	-	-	-	0.000	3.151
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The XM919 Individual Assault Munitions (IAM) effort will combine the capabilities of the existing M141 Bunker Defeat Munition (BDM) and the M136 Anti-Tank 4 Confined Space - Reduced Sensitivity (AT4CS RS), eliminating the mission risk associated with having to choose between two different capability Shoulder-Launched Munitions (SLMs), reducing the logistics and training burdens associated with multiple systems. IAM consists of the tactical XM919 IAM munition and training devices including the XM922 sub-caliber trainer (SCT), sub-caliber tracer ammunition (SCT Ammo), Field Handling Trainer (FHT), Synthetic Training Environment Live Training System (STE LTS) and Soldier Virtual Trainers (SVT). JPEO A&A is collaborating with PEO STRI to plan for STE LTS and SVT integration within PEO STRI platforms under the SS PEG. The tactical XM919 IAM supports the close fight in urban and complex terrain, allowing Soldiers a fire-from-enclosure (FFE) capability to defeat field expedient structures such as earth and timber bunkers, reinforced concrete, adobe and triple brick walls with behind the wall lethality effects as well as defeating light armored vehicles. The IAM training devices provide training capability to increase the Soldier's proficiency and integration of the XM919 tactical system into combat operations. The XM919 IAM enables the Army's Soldier Lethality Modernization Line of Effort (LOE) by providing multi-target capability and reducing training & logistics burden associated with two systems, while providing tactical innovation capable of extending overmatch against peer/near-peer adversaries in a joint, multi-domain, high-intensity conflict.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: XM919 Individual Assault Munition (IAM)	0.600	2.551	-
Description: The XM919 IAM program entered the Engineering and Manufacturing Development (EMD) Phase (MDD approved in 3QFY2020) and obtained Shoulder Launched Munition test hardware (production-ready systems) in support of market research (to include live test firings) informing the approved CDD-Update. The market research data also supported the MS C decision. A competitive 5-year Indefinite Delivery/Indefinite Quantity (ID/IQ) production contract will be awarded following the MS C decision. The XM919 IAM program will conduct a User Excursion (Soldier Touch Point in lieu of Operational Test) prior to Type Classification and Full Materiel Release. ***FY 2024 Plans:*** FY 2024 funding is required to procure test hardware and conduct the User Excursion test event (Soldier Touch Point in lieu of an Operational Test (OT)). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** RDTE efforts for the XM919 IAM program will be completed with FY 2024 funding.			
Accomplishments/Planned Programs Subtotals	0.600	2.551	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP2 / *Shoulder-Launched Munitions*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E36412: *SHOULDER LAUNCHED INDIVIDUAL ASSAULT MUNITION(IAM)*	27.657	12.051	0.762	-	0.762	32.002	37.448	42.909	47.919	0.000	200.748
• E36914: *TRAINING DEVICE SLM IAM SUBCALIBER LAUNCHER*	-	-	0.000	-	0.000	-	-	8.150	8.232	0.000	16.382

Remarks

D. Acquisition Strategy

The XM919 IAM acquisition strategy is a two phased approach that consists of an accelerated system assessment (SA) phase and a production and deployment phase (P&D). The SA phase surveyed industry and assessed available mature tactical and training hardware solutions through live test firings and soldier touch points. The data collected from the SA phase informed the IAM CDD-Update (approved 13 October 2023) and a Milestone C production decision. Upon a successful production decision, the P&D phase commences through a competitive 5-year ID/IQ production contract award requiring the XM919 IAM producers to Load, Assemble and Pack (LAP) in the U.S. at the start of year three through year five of the contract. The XM919 IAM will replace the AT4CS-RS and BDM shoulder launched munition systems. The XM919 IAM training devices including the XM922 SCT, XM922 SCT Ammo, FHT, Synthetic Training Environment Live Training System (STE LTS) and Soldier Virtual Trainers (SVT) and will replace AT4CS-RS and BDM training devices.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP2 / *Shoulder-Launched Munitions*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Individual Assault Munition (IAM) Test Hardware	C/FFP	TBD : TBD	-	-		0.822	Apr 2024	-		-		-	0.000	0.822	-
		Subtotal	-	-		0.822		-		-		-	0.000	0.822	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tactical Engineering Support - Gov	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	6.090	0.600	Dec 2022	0.866	Oct 2023	-		-		-	0.000	7.556	-
		Subtotal	6.090	0.600		0.866		-		-		-	0.000	7.556	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
User Excursion (in lieu of OT)	MIPR	Various : Various	-	-		0.863	Jul 2024	-		-		-	0.000	0.863	-
		Subtotal	-	-		0.863		-		-		-	0.000	0.863	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.090	0.600		2.551		-		-		-	0.000	9.241	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP2 / *Shoulder-Launched Munitions*

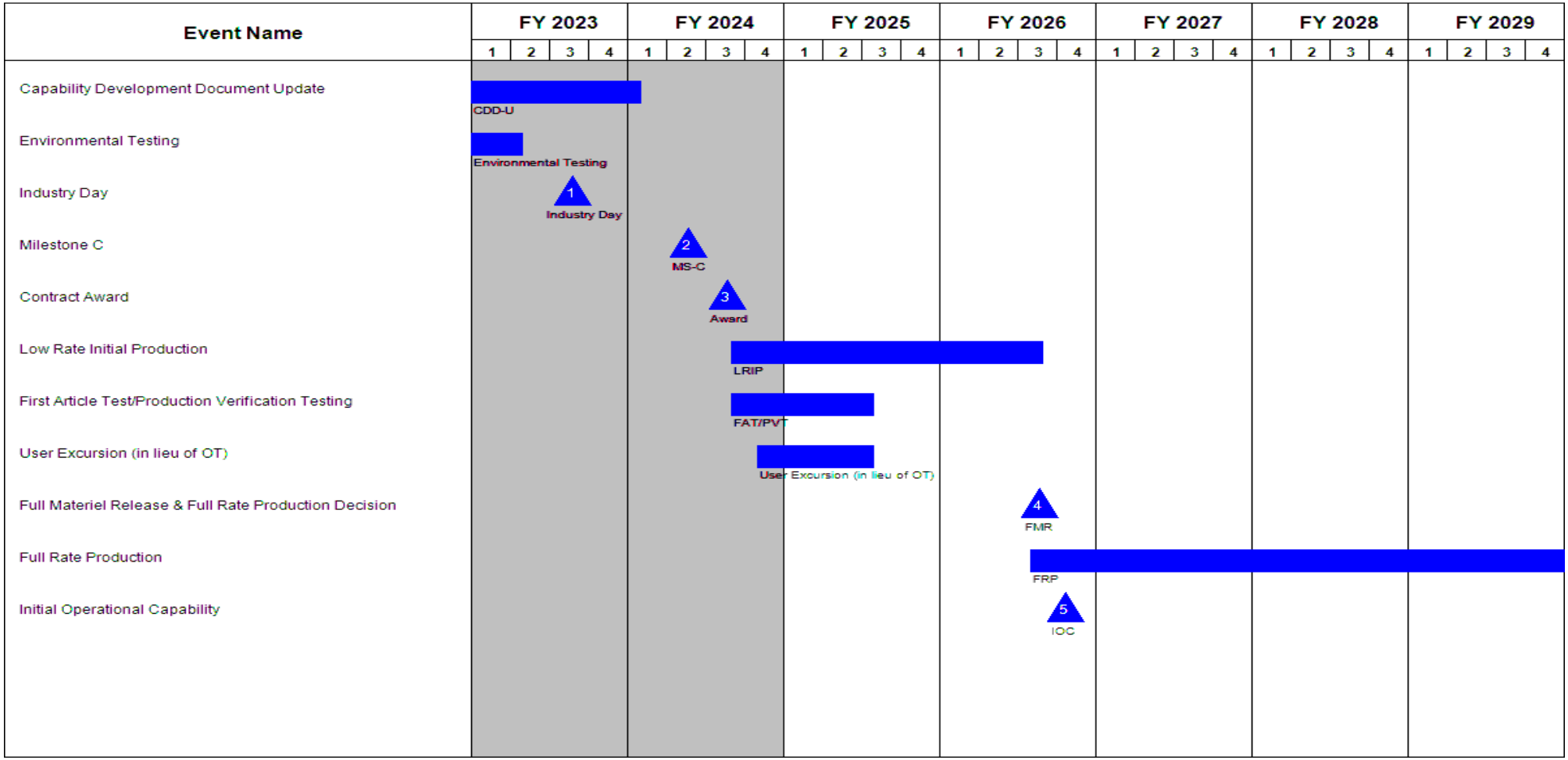


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP2 / *Shoulder-Launched Munitions*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Individual Assault Munition (IAM) Milestone B	3	2020	3	2020
Engineering and Manufacturing Development Contract	4	2020	3	2022
Live Test Firing	4	2021	3	2022
User Jury (Soldier Touch Point)	4	2021	1	2022
Capability Development Document Update	4	2022	1	2024
Environmental Testing	4	2022	1	2023
Industry Day	3	2023	3	2023
Milestone C	2	2024	2	2024
Contract Award	3	2024	3	2024
Low Rate Initial Production	3	2024	3	2026
First Article Test/Production Verification Testing	3	2024	3	2025
User Excursion (in lieu of OT)	4	2024	3	2025
Full Materiel Release & Full Rate Production Decision	3	2026	3	2026
Full Rate Production	3	2026	1	2033
Initial Operational Capability	4	2026	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP3 / *Reduced Range Ammunition - Small Caliber*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EP3: *Reduced Range Ammunition - Small Caliber*	-	5.024	-	-	-	-	-	-	-	-	0.000	5.024
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The small caliber Reduced Range Ammunition (RRA) Project is a critical technology development in response to the 7.62 millimeter (mm) and .50 caliber Capabilities Development Documents (CDD). The overall objective of RRA is to provide training ammunition suitable for use on military installations with Surface Danger Zone (SDZ) restrictions. The relatively long maximum range of the 7.62mm and .50 caliber service ammunition poses challenges on training ranges in range restricted areas. RRA will mitigate a training gap on installations by providing a materiel solution that meets training needs while shortening and condensing the SDZ. This will allow soldiers to train with 7.62mm and .50 caliber weapons on restricted ranges. The RRA cartridge design will be compatible with all Army 7.62mm and .50 caliber weapons, but specifically optimized to work in the M240 and M2 Machine Guns.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Engineering and Manufacturing Development 7.62mm ***Description:*** EMD Activities for 7.62mm Reduced Range Ammunition.	1.793	-	-
Title: Engineering and Manufacturing Development .50 Caliber ***Description:*** EMD Activities for .50 Cal Reduced Range Ammunition.	3.231	-	-
Accomplishments/Planned Programs Subtotals	5.024	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• F57515: *CTG, 7.62 REDUCED RANGE AMMUNITION*	-	1.000	9.590	-	9.590	9.373	11.119	15.414	13.970	0.000	60.466
• E07307: *CTG, .50CAL REDUCE RANGE AMMUNITION (RRA)*	-	1.000	5.412	-	5.412	34.946	27.841	40.425	40.829	0.000	150.453

Remarks

Procurement of Ammunition, Army F57515 and E07307: These funding lines supports the procurement of Reduced Range Ammunition.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP3 / *Reduced Range Ammunition - Small Caliber*

D. Acquisition Strategy

After 7.62mm Milestone (MS) B in FY 2019, the Government awarded competitive Engineering and Manufacturing Development (EMD) contracts. Upon completing Production Qualification Testing (PQT), the government down-selected to a single contractor to complete EMD. The .50 Caliber program followed a similar strategy. The Government awarded multiple competitive contracts for the .50 Caliber EMD.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP3 / *Reduced Range Ammunition - Small Caliber*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Contract .50 Cal	Option/ CPFF	General Dynamics : St. Petersburg, Florida	2.462	0.615	Jan 2023	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	2.462	0.615		-		-		-		-	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DEVCOM-AC Engineering Support 7.62mm	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	5.263	1.093	Oct 2022	-		-		-		-	Continuing	Continuing	Continuing
DEVCOM-AC Engineering Support .50 Cal	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	3.765	1.100	Oct 2022	-		-		-		-	Continuing	Continuing	Continuing
US Army Research Lab (ARL) 7.62mm	MIPR	US Army Research Lab (ARL) : Aberdeen, Maryland	1.084	0.400	Oct 2022	-		-		-		-	Continuing	Continuing	Continuing
US Army Research Lab (ARL) .50 Cal	MIPR	US Army Research Lab (ARL) : Aberdeen, Maryland	0.900	0.301	Oct 2022	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	11.012	2.894		-		-		-		-	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP3 / *Reduced Range Ammunition - Small Caliber*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Production Qualification Testing (PQT 7.62mm)	MIPR	Aberdeen Test Center : Aberdeen, Maryland	1.450	0.300	Nov 2022	-		-		-		-	Continuing	Continuing	Continuing
User Evaluation .50 Cal	MIPR	Maneuver Battle Labs : Fort Benning, Georgia	1.240	0.415	Dec 2022	-		-		-		-	Continuing	Continuing	Continuing
Production Qualification Testing (PQT) .50 Cal	MIPR	Aberdeen Test Center : Aberdeen, Maryland	1.450	0.800	Nov 2022	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	4.140	1.515		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.614	5.024		-		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP3 / *Reduced Range Ammunition - Small Caliber*

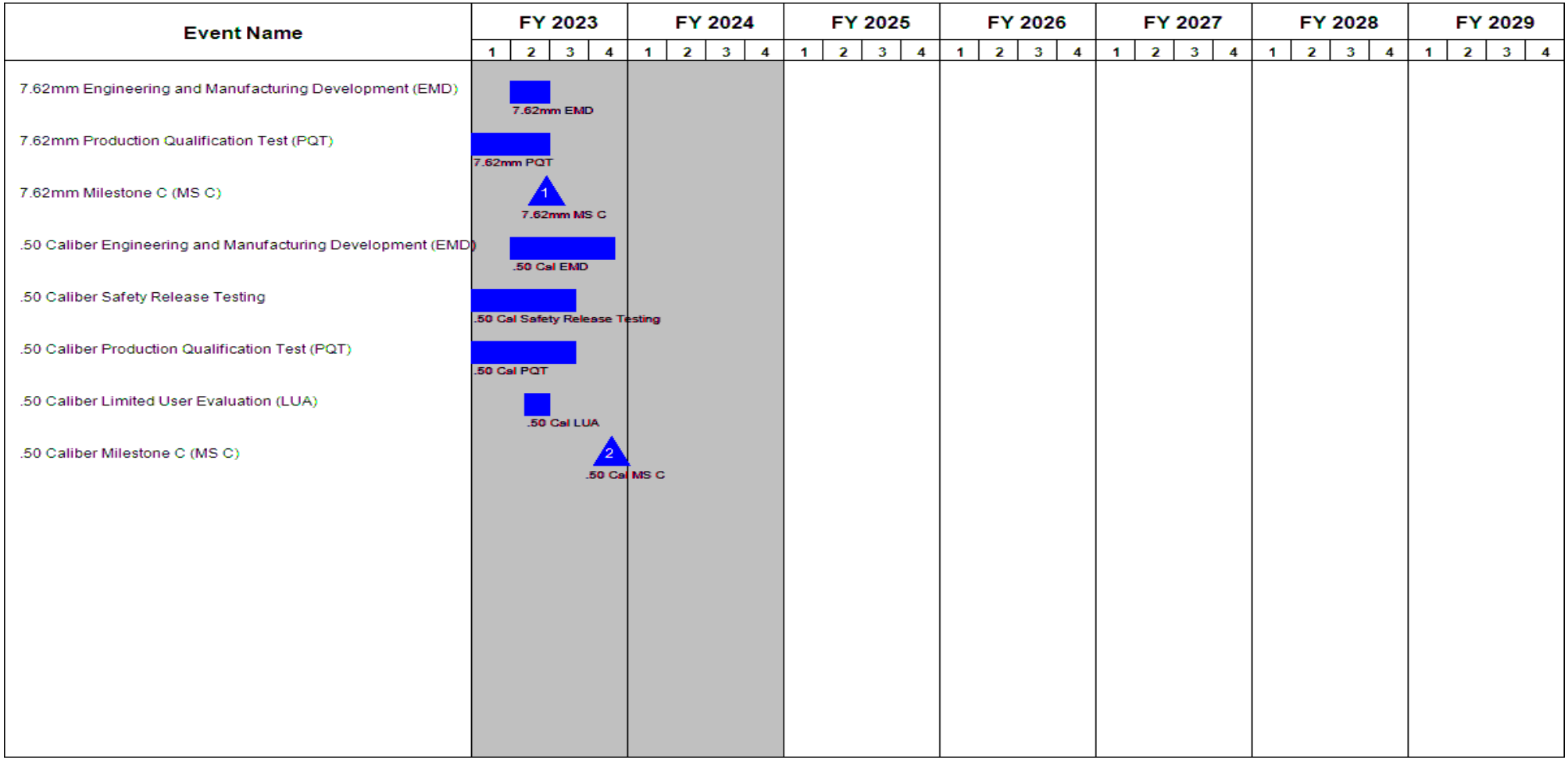


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP3 / *Reduced Range Ammunition - Small Caliber*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
7.62mm Multiple Concept Design Evaluations	1	2017	4	2018
7.62mm Materiel Development Decision (MDD)	4	2017	4	2017
7.62mm Design Verification Test (DVT)	2	2018	3	2018
7.62mm Milestone B (MS B)	1	2019	1	2019
7.62mm Transitions from BA04 EL7 to BA05 EP3	1	2019	1	2019
7.62mm Engineering and Manufacturing Development (EMD)	1	2019	2	2023
7.62mm Preliminary Design Review (PDR)	2	2020	2	2020
7.62mm Pre-Production Qualification Test (PPQT)	3	2021	1	2022
7.62mm Developmental Test and Evaluation (DT&E)	3	2021	1	2022
7.62mm Soldier Touch Point (STP)	4	2021	1	2022
7.62mm Critical Design Review (CDR)	2	2022	2	2022
7.62mm Production Qualification Test (PQT)	4	2022	2	2023
7.62mm Milestone C (MS C)	2	2023	2	2023
.50 Caliber Project Starts on BA04 EL7	1	2018	1	2018
.50 Caliber Multiple Concept Design Evaluations	1	2018	1	2020
.50 Caliber Materiel Development Decision (MDD)	2	2018	2	2018
.50 Caliber Design Verification Test (DVT)	2	2019	3	2019
.50 Caliber Milestone B (MS B)	1	2020	1	2020
.50 Caliber Transitions from BA04 EL7 to BA05 EP3	1	2020	1	2020
.50 Caliber Engineering and Manufacturing Development (EMD)	1	2020	4	2023
.50 Caliber Preliminary Design Review (PDR)	2	2021	2	2021
.50 Caliber Pre-Production Qualification Test (PPQT)	1	2021	3	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP3 / *Reduced Range Ammunition - Small Caliber*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
.50 Caliber Critical Design Review (CDR)	1	2022	1	2022
.50 Caliber Safety Release Testing	4	2022	3	2023
.50 Caliber Production Qualification Test (PQT)	4	2022	3	2023
.50 Caliber Limited User Evaluation (LUA)	2	2023	2	2023
.50 Caliber Milestone C (MS C)	4	2023	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP4 / *One-Way Luminescence for Small Caliber Ammo*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EP4: *One-Way Luminescence for Small Caliber Ammo*	-	7.289	3.093	-	-	-	-	-	-	-	0.000	10.382
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The One Way Luminescence (OWL) project is a critical technology development in response to the 7.62 millimeter (mm) and 5.56mm Families of Ammunition Capabilities Development Documents (CDD) and .50 Caliber Munitions CDD. Current small caliber ammunition tracer rounds are a pyrotechnic tracer mix which allows enemy forces to see the trace round and track its trajectory back to the shooter. The OWL projects objective is to develop and field a full tracer round, replace the current pyrotechnic cartridges with trace cartridges that are only visible to the shooter and soldiers in close proximity, increasing soldier survivability, and increasing lethality by incorporating Enhanced Performance Round (EPR) technology into the new tracer ammunition. 7.62mm and 5.56mm are the immediate focus; later followed by .50 Caliber cartridges and Next Generation Squad Weapons (NGSW) ammunition. This is no FY 2025 request as program transitions from development to production.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: EMD 7.62mm ***Description:*** EMD efforts for the 7.62mm variant. ***FY 2024 Plans:*** Continue EMD and perform preparation activities for Materiel Release (MR). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Program transitions from Development to Production.	1.326	0.614	-
Title: EMD 5.56mm ***Description:*** EMD efforts for the 5.56mm variants. ***FY 2024 Plans:*** Complete EMD efforts, perform PQT, and execute a STP / User Evaluation. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Program transitions from Development to Production.	5.963	2.479	-
Accomplishments/Planned Programs Subtotals	7.289	3.093	-

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP4 / *One-Way Luminescence for Small Caliber Ammo*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

The OWL concept will be developed through Government and Industry prototyping efforts. Technology Readiness Assessments (TRAs) were conducted in FY 2017 and FY 2018 to evaluate the industry and Government concepts in order to proceed with the 7.62mm EMD. The 5.56mm, NGSW, and .50 Caliber cartridges follows the 7.62mm schedule with EMD starting in FY 2021 for the 5.56mm variant after conducting a TRA and achieving Technology Readiness Level 6 (TRL6) in FY 2020. The new tracer cartridges will replace legacy tracers in each of the various small caliber configurations.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP4 / *One-Way Luminescence for Small Caliber Ammo*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OWL Manufacturing Tooling Development (5.56mm)	Option/ CPFF	JAK Tool Engineering Solutions : Cranbury, NJ	1.571	0.195	Jan 2023	-		-		-		-	0.000	1.766	-
EMD PH I Contract (5.56mm)	Option/ CPFF	OLIN Winchester Corporation : Independence, MO	4.885	2.820	Feb 2023	-		-		-		-	0.000	7.705	-
		Subtotal	6.456	3.015		-		-		-		-	0.000	9.471	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DEVCOM-AC Engineering Support 7.62mm	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	4.834	0.500	Oct 2022	0.400	Oct 2023	-		-		-	0.000	5.734	-
DEVCOM-AC Engineering Support 5.56mm	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	2.377	1.800	Oct 2022	1.730	Oct 2023	-		-		-	0.000	5.907	-
		Subtotal	7.211	2.300		2.130		-		-		-	0.000	11.641	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP4 / *One-Way Luminescence for Small Caliber Ammo*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Production Qualification Testing (PQT) 7.62mm	MIPR	Aberdeen Test Center : Aberdeen, MD	-	0.826	Mar 2023	0.214	Oct 2023	-		-		-	0.000	1.040	-
Radar Testing (5.56mm)	MIPR	US Army Research Lab : Aberdeen, MD	0.075	0.195	Oct 2022	-		-		-		-	0.000	0.270	-
Soldier Touch Point 2 (5.56mm)	MIPR	US Army Maneuver Battle Labs : Fort Benning, GA	-	0.150	Dec 2022	-		-		-		-	0.000	0.150	-
Soldier Touch Point 3 (5.56mm)	MIPR	US Army Maneuver Battle Labs : Fort Benning, GA	-	-		0.200	Oct 2023	-		-		-	0.000	0.200	-
Production Qualification Testing (PQT) 5.56mm	MIPR	Aberdeen Test Center : Aberdeen, MD	-	0.778	Apr 2023	0.549	Oct 2023	-		-		-	0.000	1.327	-
Verification Testing 5.56mm	MIPR	Night Vision Labs : Fort Belvoir, VA	-	0.025	Nov 2022	-		-		-		-	0.000	0.025	-
		Subtotal	0.075	1.974		0.963		-		-		-	0.000	3.012	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.742	7.289		3.093		-		-		-	0.000	24.124	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP4 / *One-Way Luminescence for Small Caliber Ammo*

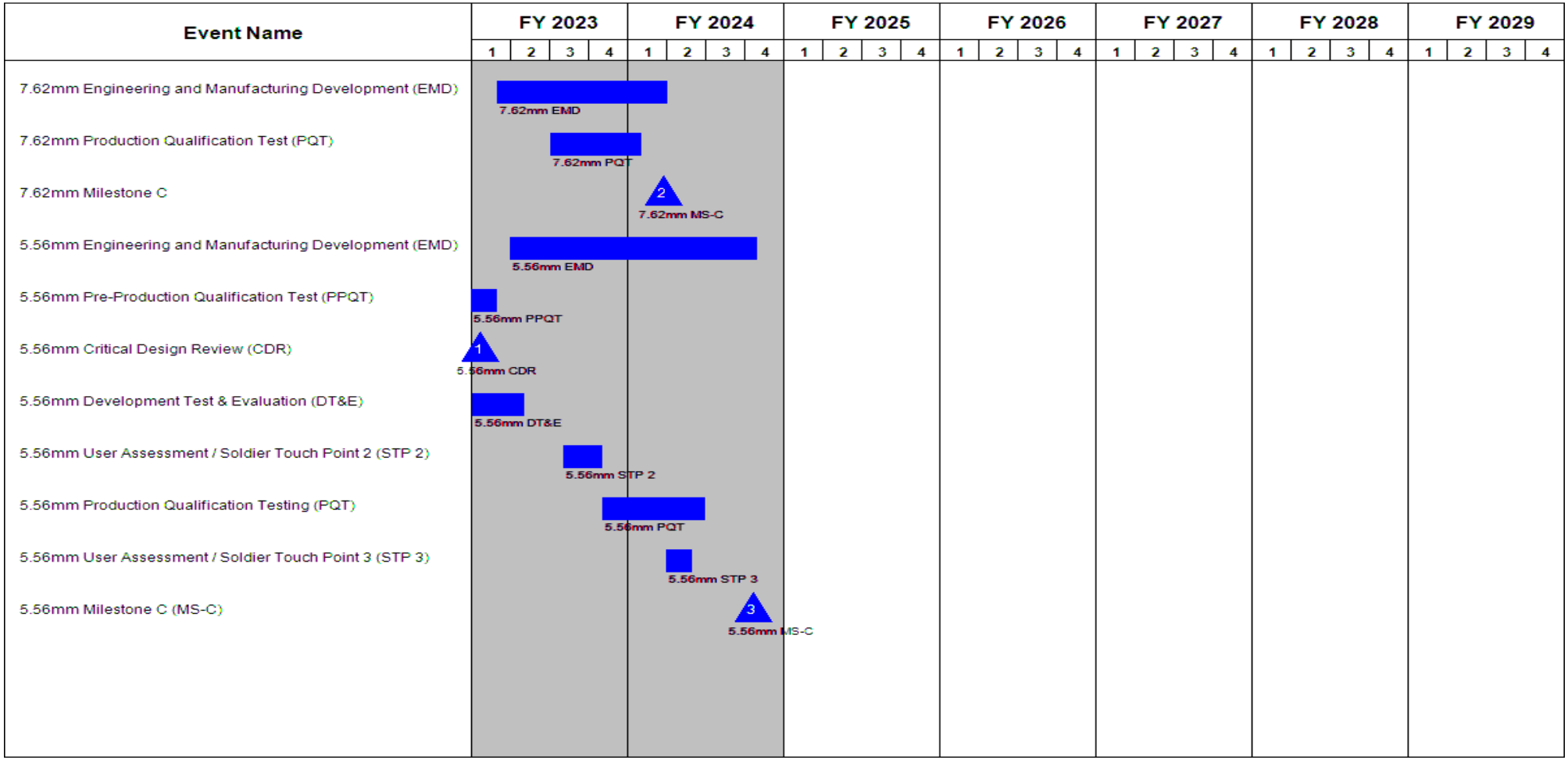


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP4 / *One-Way Luminescence for Small Caliber Ammo*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
7.62mm Materiel Development Decision (MDD)	4	2016	4	2016
7.62mm Multiple Concept Design Evaluation	1	2015	1	2019
7.62mm Milestone B (MS-B)	1	2019	1	2019
7.62mm Transitions from BA04 EB8 to BA05 EP4	1	2019	1	2019
7.62mm Engineering and Manufacturing Development (EMD)	1	2019	1	2024
7.62mm Design Verification Test	2	2019	3	2019
7.62mm Preliminary Design Review (PDR)	3	2019	3	2019
7.62mm Development Test & Evaluation (DT&E)	3	2020	3	2021
7.62mm User Assessment	4	2020	1	2021
7.62mm Pre-Production Qualification Test (PPQT)	4	2020	2	2021
7.62mm Critical Design Review (CDR)	4	2022	4	2022
7.62mm Limited User Evaluation (LUE)	2	2022	3	2022
7.62mm Production Qualification Test (PQT)	3	2023	1	2024
7.62mm Milestone C	1	2024	1	2024
5.56mm Materiel Development Decision (MDD)	3	2018	3	2018
5.56mm Project Starts on BA04 EB8	3	2018	3	2018
5.56mm Multiple Concept Design Evaluation	4	2018	4	2020
5.56mm Cavity Design Test	1	2020	3	2020
5.55 Technology Readiness Level 6 (TRL 6)	4	2020	4	2020
5.56mm Milestone B (MS-B)	1	2021	1	2021
5.56mm Transitions from BA04 EB8 to BA05 EP4	1	2021	1	2021
5.56mm Engineering and Manufacturing Development (EMD)	1	2021	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP4 / *One-Way Luminescence for Small Caliber Ammo*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
5.56mm Design Verification Test	3	2021	4	2021
5.56mm Preliminary Design Review (PDR)	1	2022	1	2022
5.56mm User Assessment / Soldier Touch Point 1 (STP 1)	4	2022	4	2022
5.56mm Pre-Production Qualification Test (PPQT)	4	2022	1	2023
5.56mm Critical Design Review (CDR)	1	2023	1	2023
5.56mm Development Test & Evaluation (DT&E)	1	2023	2	2023
5.56mm User Assessment / Soldier Touch Point 2 (STP 2)	3	2023	4	2023
5.56mm Production Qualification Testing (PQT)	4	2023	2	2024
5.56mm User Assessment / Soldier Touch Point 3 (STP 3)	2	2024	2	2024
5.56mm Milestone C (MS-C)	4	2024	4	2024
Prototype & Concept Evaluation for Other Small Caliber Ammo	1	2020	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP7 / *Aviation Airborne Expendable Countermeasures*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EP7: *Aviation Airborne Expendable Countermeasures*	-	6.131	3.194	5.840	-	5.840	6.021	0.902	-	-	0.000	22.088
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Aviation Airborne Expendable Countermeasures (AAECM) will support Integrated System Design (ISD), System Capability (SC) and Manufacturing Process Demonstrations (MPD) on expendable countermeasure flares and decoys to include the XM215 Infrared (IR) countermeasure Flare and XM20 Radio Frequency (RF) expendables. These expendable countermeasures systems are an essential part of survivability equipment for Army aircraft. Army Research Development Technology & Evaluation (RDT&E) efforts are coordinated with Program Executive Office (PEO) Aviation to address the AAECM capability, a critical enabler for enduring aircraft and the Future Vertical Lift (FVL) - Aircraft Survivability Equipment (ASE) Cross Functional Team (CFT) within Army's Top modernization priorities.

These advanced decoys will address deficiencies in Army aircraft protection and the safety of its aircrews against advanced Man-Portable Air Defense Systems (MANPADS) and Surface-to-Air Missiles (SAM) systems. The project will also support ISD, SC and MPD on new expendable countermeasure munitions that will protect Army aircraft from advanced and proliferated current guided missile threats. Activities include modeling and simulation, flight testing, qualification testing, environmental considerations, safety enhancements, manufacturing enhancements, qualification of other service and foreign munitions that could meet current requirements, product improvements, insertion of new technologies to increase performance, and enhancement of current flare solutions for new and existing aircraft. Systems include impulse cartridges and aircraft expendables (to include RF expendables). FY 2025 will support modeling and simulation for the XM215. For XM20, FY2025 will support developmental testing and Milestone C for the AH64 and CH47 platforms and conduct operational testing on the UH60 platform.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Improvements to Countermeasure Flares	6.131	3.194	5.840
Description: This program will develop XM215 Infrared and XM20 Radio Frequency expendable countermeasures to defeat specific threats of interest and qualify them for Army use. This program will also develop countermeasure patterns/cocktails solutions to integrate these new expendables with legacy countermeasures into Army's rotary wing and fixed wing aircraft.			
FY 2024 Plans: FY 2024 funding will support modeling and simulation, additional procurement of test assets and flight testing for the XM20. Funding will also support XM215 test assets, Production Qualification Testing (PQT), Final Hazards Classification (FHC) and Insensitive Munitions (IM) testing			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP7 / *Aviation Airborne Expendable Countermeasures*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY2025 funding will support XM20 MS C, model and simulation, Developmental Flight Test on AH64/CH47 aircrafts and Initial Operational Test and Evaluation (IOT&E) on UH60 aircraft to support First Unit Equipped. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 funding increase due to XM20 testing requirements.			
Accomplishments/Planned Programs Subtotals	6.131	3.194	5.840

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E49101: *Flare, Aircraft Countermeasure, RF (Passive)*	-	8.083	14.149	-	14.149	-	-	-	-	0.000	22.232
• E49102: *Flare, Aircraft Countermeasure, XM215*	-	-	0.862	-	0.862	0.539	8.594	11.582	17.369	0.000	38.946

Remarks

D. Acquisition Strategy

During the Materiel Solution Analysis (MSA), Milestone A phase, prototypes developed by the US Government (USG) and contractors were tested and evaluated against initial CDD requirements. The contractor developed XM20 design and the USG developed XM215 design were selected to enter into Engineering and Manufacturing Development (EMD), Milestone B phase, to finalize the design based on lessons learned from the MSA flight test and CDD requirements. Test assets are being procure from industry via Other Transaction Authority (OTA) contract mechanism since FY 2021 to support EMD. Final XM20 and XM215 and configurations to support production after MS C will be procured via Full and Open FAR based contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP7 / *Aviation Airborne Expendable Countermeasures*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
XM20 Prototypes	SS/FP	Armtec Defense Technologies : Coachella, CA	-	0.240	Sep 2023	-		-		-		-	0.000	0.240	-
		Subtotal	-	0.240		-		-		-		-	0.000	0.240	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
XM215 Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	5.126	0.727	Mar 2023	-		-		-		-	0.000	5.853	-
XM20 Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	-	0.102	Mar 2023	1.168	Oct 2023	1.100	Oct 2024	-		1.100	Continuing	Continuing	-
		Subtotal	5.126	0.829		1.168		1.100		-		1.100	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
XM20 Operational Flight Testing	MIPR	Various : Various	-	3.428	Aug 2023	1.126	Jun 2024	3.990	May 2025	-		3.990	Continuing	Continuing	-
XM20 Modeling and Simulation	MIPR	Various : Various	0.195	0.930	Dec 2023	0.900	Jan 2024	0.500	Jan 2025	-		0.500	Continuing	Continuing	-
XM215 Modeling and Simulation	MIPR	Naval Air Warfare : China Lake, CA	0.881	-		-		0.250	Jan 2025	-		0.250	0.000	1.131	-
XM215 Flight Test	MIPR	Various : Various	-	0.704	Apr 2023	-		-		-		-	0.000	0.704	-
		Subtotal	1.076	5.062		2.026		4.740		-		4.740	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EP7 / *Aviation Airborne Expendable Countermeasures*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.202	6.131		3.194		5.840		-		5.840	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP7 / *Aviation Airborne Expendable Countermeasures*

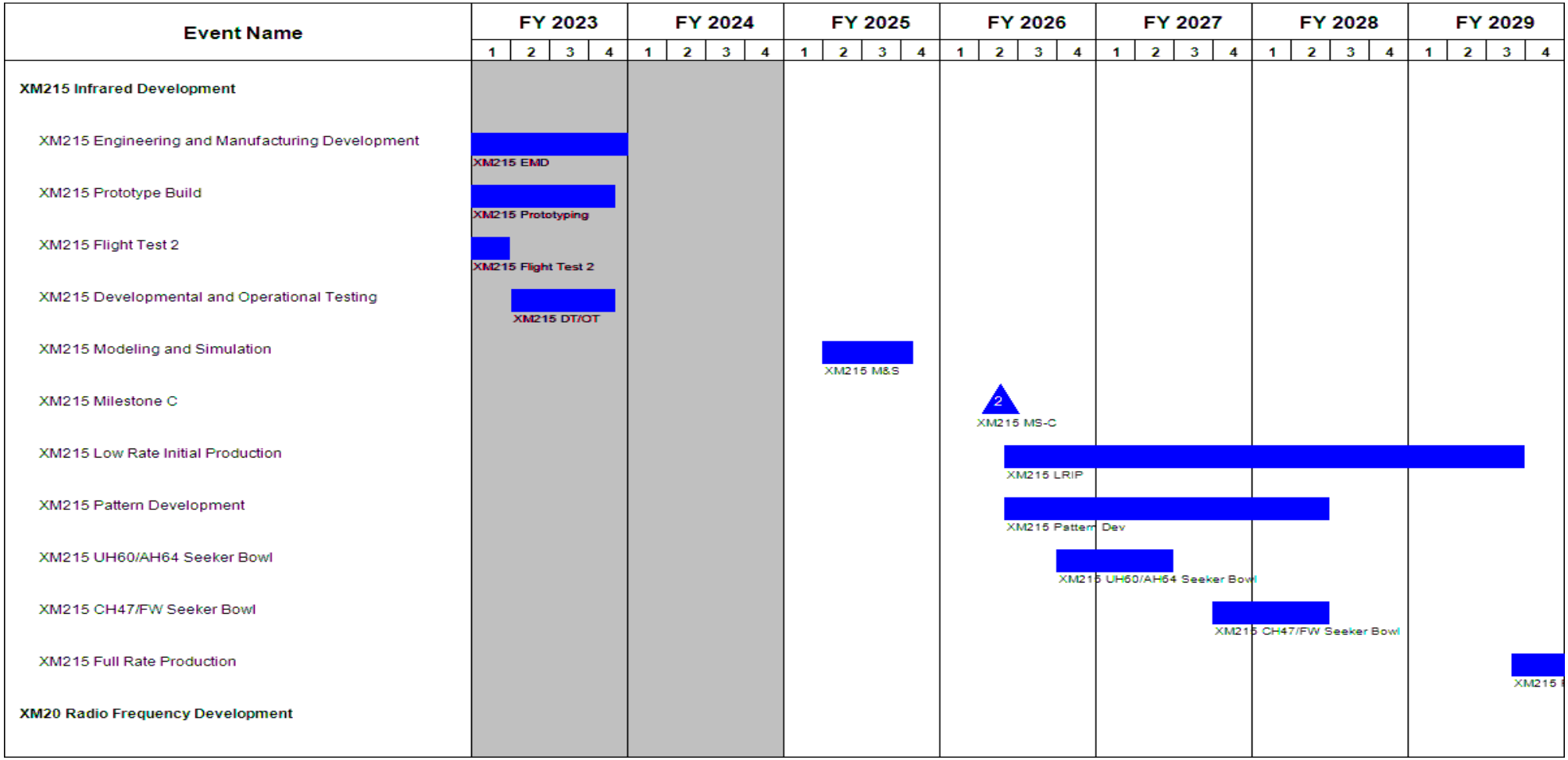
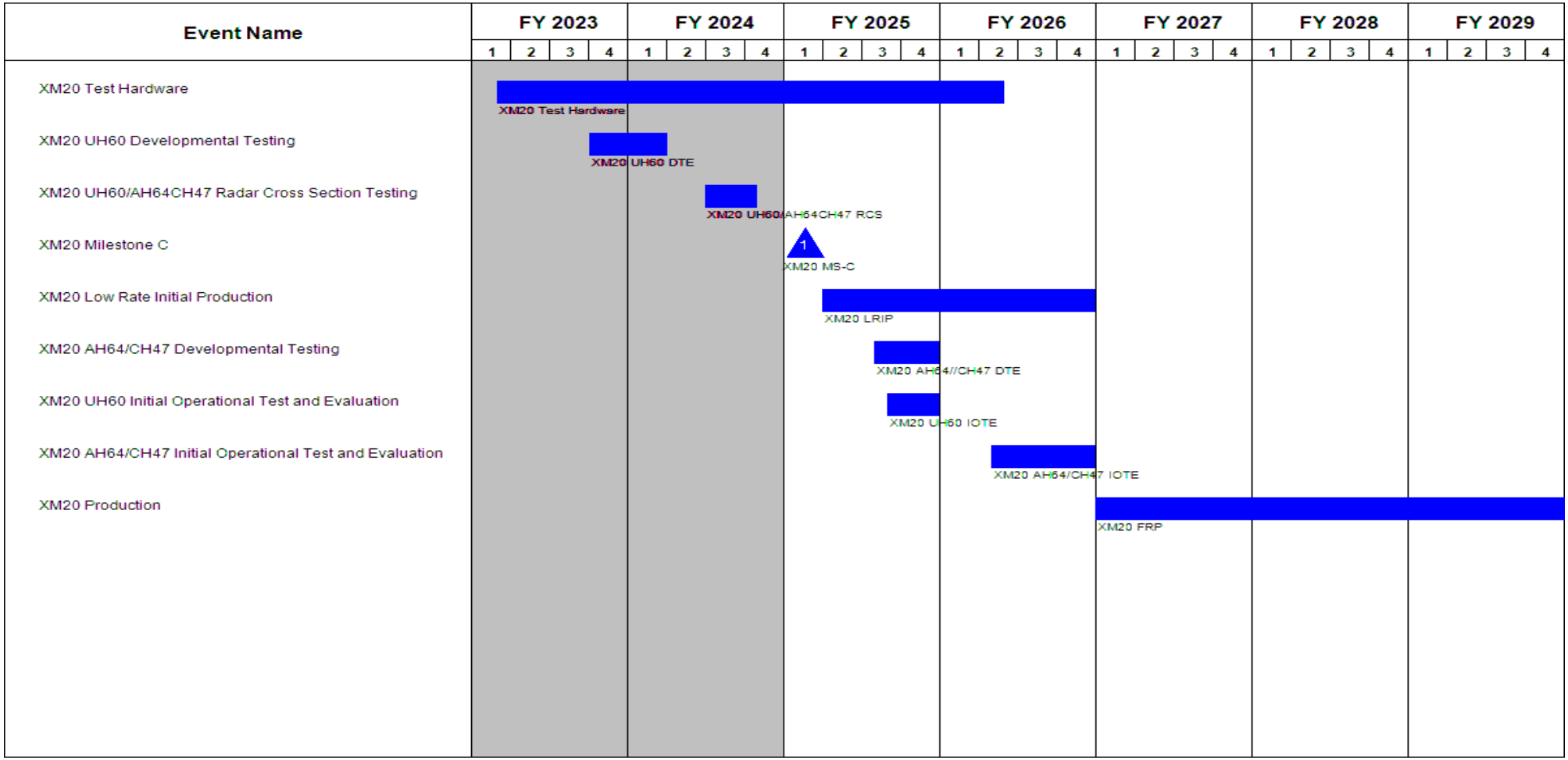


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP7 / *Aviation Airborne Expendable Countermeasures*



Note

Project EB9 / Aviation Airborne Expendable Countermeasures within PE 0603639A / Tank and Medium Caliber Ammunitions transitions to Engineering and Manufacturing Development (EMD) under Project EP7 / Aviation Airborne Expendable Countermeasures within PE 0604802A / Weapons and Munitions - Eng Dev.

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP7 / *Aviation Airborne Expendable Countermeasures*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
XM215 Infrared Development	1	2019	4	2031
XM215 Milestone A	1	2019	1	2019
XM215 Prototyping	1	2019	2	2020
XM215 Down Select	3	2019	3	2019
XM215 Testing Efforts (Stability/Heat/Cold)	3	2019	2	2020
XM215 Flight Testing	1	2020	2	2020
XM215 Milestone B	2	2020	2	2020
XM215 Engineering and Manufacturing Development	2	2020	4	2023
XM215 Design Verification Test	2	2021	3	2021
XM215 Flight Test	2	2021	2	2021
XM215 Prototype Build	3	2021	4	2023
XM215 Flight Test 2	1	2023	1	2023
XM215 Developmental and Operational Testing	2	2023	4	2023
XM215 Modeling and Simulation	2	2025	4	2025
XM215 Milestone C	2	2026	2	2026
XM215 Low Rate Initial Production	2	2026	3	2029
XM215 Pattern Development	2	2026	2	2028
XM215 UH60/AH64 Seeker Bowl	4	2026	2	2027
XM215 CH47/FW Seeker Bowl	4	2027	2	2028
XM215 Full Rate Production	3	2029	3	2033
XM20 Radio Frequency Development	1	2019	4	2031
XM20 Milestone A	1	2019	1	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EP7 / *Aviation Airborne Expendable Countermeasures*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
XM20 Prototype Development	1	2019	4	2019
XM20 Demonstrations	2	2019	3	2019
XM20 Technology Maturation and Risk Reduction	1	2020	2	2021
XM20 Flight Testing	2	2020	2	2020
XM20 Modeling and Simulation	3	2020	4	2020
XM20 Data Analysis	1	2021	2	2021
XM20 Milestone B	2	2021	2	2021
XM20 Development Contract	2	2021	4	2022
XM20 Critical Design Review	2	2022	2	2022
XM20 Developmental Testing	2	2022	4	2022
XM20 Test Hardware	1	2023	2	2026
XM20 UH60 Developmental Testing	4	2023	1	2024
XM20 UH60/AH64CH47 Radar Cross Section Testing	3	2024	4	2024
XM20 Milestone C	1	2025	1	2025
XM20 Low Rate Initial Production	2	2025	4	2026
XM20 AH64/CH47 Developmental Testing	3	2025	4	2025
XM20 UH60 Initial Operational Test and Evaluation	3	2025	4	2025
XM20 AH64/CH47 Initial Operational Test and Evaluation	2	2026	4	2026
XM20 Production	1	2027	4	2031

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EU4 / *40mm HV Improved High Explosive Dual Purpose*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EU4: *40mm HV Improved High Explosive Dual Purpose*	-	1.997	-	1.503	-	1.503	-	-	-	-	0.000	3.500
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Project EU4: 40mm HV Improved High Explosive Dual Purpose FY 2024 is a Skip-Year, FY 2025 funding required to conduct Live Fire Testing.

A. Mission Description and Budget Item Justification

40 millimeter (mm) High Velocity (HV) High Explosive Dual Purpose - Air burst (HEDP-AB) is a new capability identified as a Warfighter counter-defilade requirement in the 40mm High Velocity Improved High Explosive Dual Purpose Cartridge Capability Development Document (CDD) and will provide the Mk19 Mod 3 Grenade Machine Gun (GMG) an airburst capable cartridge with the ability of achieving required lethal effects against enemy targets in the open and in defilade while maintaining the capability to defeat unarmored and lightly armored vehicles. XM1176 HEDP-AB cartridges are manufactured by de-fuzing legacy M430A1 cartridges and installing a new airburst capable fuze onto the M430A1 warhead. In FY 2025 funding will support Live Fire Test and Evaluation (LFT&E) efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Engineering and Manufacturing Development (EMD)	1.997	-	1.503
Description: Award EMD contracts to support Design Engineering Testing (DET) and Developmental Test & Evaluation (DT&E) of the 40mm dual purpose airburst capability. ***FY 2025 Plans:*** FY 2025 funding supports Live fire Test and Evaluation (LFT&E). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 funding increase to conduct Live Fire Testing.			
Accomplishments/Planned Programs Subtotals	1.997	-	1.503

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E70505: *CTG, 40MM, HV HEDP-AB, XM1176*	15.853	-	13.926	-	13.926	3.154	13.132	13.240	13.372	0.000	72.677

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EU4 / *40mm HV Improved High Explosive Dual Purpose*

D. Acquisition Strategy

The 40mm HV HEDP-AB cartridge was developed through a competitive EMD program. Milestone B approval was followed by a competitive award for the EMD phase which included DET 1 and DET 2 and an option for DT&E. One contractor was awarded to develop an air burst capable fuze to be retrofitted onto the currently fielded, High Explosive Dual Purpose cartridges and develop a Programming Unit. Test results will support the documentation for Milestone C. After Milestone C is achieved, a contract option will be awarded for Low Rate Initial Production 1 (LRIP-1) followed by options for Low Rate Initial Production 2 (LRIP-2) and Production Year 1 (PY1).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EU4 / *40mm HV Improved High Explosive Dual Purpose*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Manager Maneuver Ammunition Systems (PM MAS)	MIPR	Picatinny Arsenal : NJ	0.542	0.200	Nov 2022	-		-		-		-	0.000	0.742	-
		Subtotal	0.542	0.200		-		-		-		-	0.000	0.742	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DEVCOM-AC Engineering Support	MIPR	Development Command - Armaments Center (DEVCOM-AC) : Picatinny Arsenal, NJ	9.498	1.224	Nov 2022	-		-		-		-	0.000	10.722	-
		Subtotal	9.498	1.224		-		-		-		-	0.000	10.722	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, Md	-	0.573	Jul 2023	-		1.503	Mar 2025	-		1.503	0.000	2.076	-
		Subtotal	-	0.573		-		1.503		-		1.503	0.000	2.076	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.040	1.997		-		1.503		-		1.503	0.000	13.540	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EU4 / *40mm HV Improved High Explosive Dual Purpose*

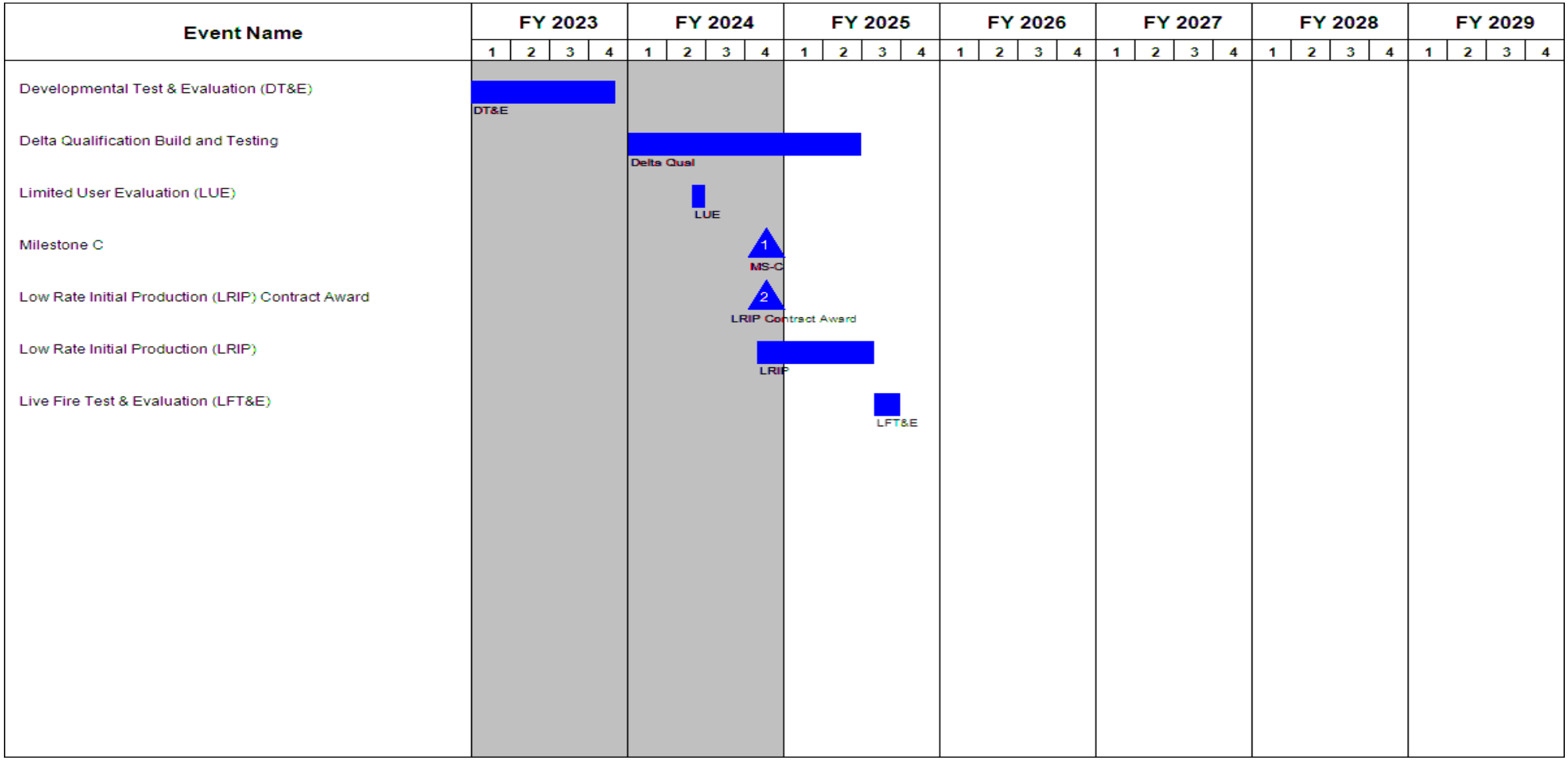


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EU4 / *40mm HV Improved High Explosive Dual Purpose*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Milestone B Support Documents	2	2017	4	2018
Milestone B	4	2018	4	2018
Engineering and Manufacturing Development (EMD)	4	2018	4	2022
Test Readiness Review for Design Engineering Test 1	4	2019	4	2019
Design Engineering Test (DET) 1	1	2020	2	2020
Test Readiness Review for Design Engineering Test 2	2	2020	2	2020
Design Engineering Test (DET) 2	3	2020	4	2020
Developmental Test & Evaluation (DT&E) Contract Award	4	2020	4	2020
Critical Design Review (CDR)	1	2021	1	2021
Developmental Test & Evaluation (DT&E) Build	3	2021	2	2022
Developmental Test & Evaluation (DT&E)	2	2022	4	2023
Delta Qualification Build and Testing	1	2024	2	2025
Limited User Evaluation (LUE)	2	2024	2	2024
Milestone C	4	2024	4	2024
Low Rate Initial Production (LRIP) Contract Award	4	2024	4	2024
Low Rate Initial Production (LRIP)	4	2024	3	2025
Live Fire Test & Evaluation (LFT&E)	3	2025	3	2025

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EU6 / *155mm HE Rocket Assist Project Extended Range*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EU6: *155mm HE Rocket Assist Project Extended Range*	-	13.857	28.772	15.631	-	15.631	2.655	-	-	-	0.000	60.915
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The 155 millimeter (mm) High Explosive (HE) Rocket Assisted Projectile (RAP) supports the Army's Cannon Modernization Strategy which includes Paladin Integrated Management (PIM) Armament Upgrade, Next Generation Cannon, Extended Range Cannon Artillery (ERCA), and all utilized cannons that are 52-calibers or longer. The Project is executing an evolutionary approach leveraging current rocket assisted munitions hardware to meet the extended range and precision objectives. The High Explosive (HE) Rocket Assisted Projectile (RAP) will first deliver a near term solution to increase range from 30km to 40km in current 39 caliber systems. The Next Generation Rocket Assisted Projectile (NGRAP) will continue development of the High Explosive (HE) Rocket Assisted Projectile (RAP) with focus on improved accuracy, lethality, and ranges up to 70km and greater utilizing 52 and 58 caliber weapons. FY 2025 funding supports the Engineering and Manufacturing Development (EMD) activities to build, test, and evaluate a solution that meets the requirements specified in the Next Generation Rocket Assisted Projectile (NGRAP) Capabilities Development Document (CDD).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: 155mm High Explosive Rocket Assisted Projectile (RAP) Extended Range	13.857	28.772	15.631
Description: The High Explosive (HE) Rocket Assisted Projectile (RAP) XM1113 will replace the obsolete M549A1 in 39 caliber weapon systems and increase range from 30km to 40km. The Next Generation Rocket Assisted Projectile (NGRAP), which leverages efforts completed under XM1210, will continue development of High Explosive (HE) Rocket Assisted Projectile (RAP) with focus on improved ranges utilizing 52 and 58 caliber weapons. ***FY 2024 Plans:*** FY 2024 Funding will support XM1210 development and qualification activities for the Full Materiel Release (FMR) configuration. ***FY 2025 Plans:*** FY 2025 Funding will continue to support Next Generation Rocket Assisted Projectile (NGRAP) development and testing activities to verify all weapon, propellant and fuze interoperability requirements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease in FY 2025 funding reflects shift to single common projectile to support the Army's Cannon Modernization Strategy.			
Accomplishments/Planned Programs Subtotals	13.857	28.772	15.631

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EU6 / *155mm HE Rocket Assist Project Extended Range*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E66501: *PROJ, 155mm ARTY HE RAP, XM1113*	135.174	26.688	23.363	-	23.363	43.712	49.474	48.729	49.217	0.000	376.357
• E27121: *PROJ, 155MM ARTY HE RAP, M1210*	-	2.932	3.554	-	3.554	2.199	30.461	31.083	31.736	0.000	101.965

Remarks

Procurement of Ammunition, Army (PAA) budget line items, Standard Study Numbers E66501 and E27121, have been established to resource the procurement of XM1113 and XM1210 quantities.

D. Acquisition Strategy

The Next Generation Rocket Assisted Projectile (NGRAP) utilizes the competitively awarded Department of Defense (DoD) Ordnance Technology Consortium (DOTC) Other Transaction Agreement (OTA) initiative with General Dynamics Ordnance and Tactical Systems (GD-OTS) to continue the High Explosive (HE) Rocket Assisted Projectile (RAP) development efforts. United States Government (USG) will continue to partner with industry to develop a USG owned Technical Data Package (TDP). In addition, OTAs and Government Agreements will continue to expand the supply chain for future competition, eliminate single point failure risks, analyze alternative manufacturing methods, and meet large forecasted production rates. A Federal Acquisition Regulation (FAR) based production contract will be implemented to support NGRAP requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EU6 / *155mm HE Rocket Assist Project Extended Range*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Office of the Project Manager (PM) Combat Ammunition Systems (CAS) : Picatinny Arsenal, NJ	1.720	0.100	Oct 2022	0.100	Oct 2023	0.100	Oct 2024	-		0.100	0.000	2.020	-
		Subtotal	1.720	0.100		0.100		0.100		-		0.100	0.000	2.020	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DOTC - HE RAP/ NGRAP Engineering and Manufacturing Development (EMD)	MIPR	DoD Ordnance Technology Consortium Other Transaction Agreement (DOTC OTA) : Various	92.760	8.305	Nov 2022	24.422	Nov 2023	10.881	Dec 2024	-		10.881	0.000	136.368	-
		Subtotal	92.760	8.305		24.422		10.881		-		10.881	0.000	136.368	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Combat Capabilities Development Command Armaments Center (DEVCOM AC) : Picatinny Arsenal, NJ	11.343	2.561	Nov 2022	2.500	Nov 2023	2.650	Oct 2024	-		2.650	0.000	19.054	-
Fire Control Software Integration	MIPR	U.S. Army Communications-Electronics Command	0.200	-		0.250	Nov 2023	-		-		-	0.000	0.450	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EU6 / *155mm HE Rocket Assist Project Extended Range*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		(CECOM) : Aberdeen, MD													
		Subtotal	11.543	2.561		2.750		2.650		-		2.650	0.000	19.504	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Qualification Testing	MIPR	Army Test and Evaluation Command (ATEC) Yuma Proving Ground (YPG) : Yuma, AZ	11.490	2.891	Jan 2023	1.500	Jan 2024	2.000	Jan 2025	-		2.000	0.000	17.881	-
		Subtotal	11.490	2.891		1.500		2.000		-		2.000	0.000	17.881	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	117.513	13.857		28.772		15.631		-		15.631	0.000	175.773	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EU6 / *155mm HE Rocket Assist Project Extended Range*

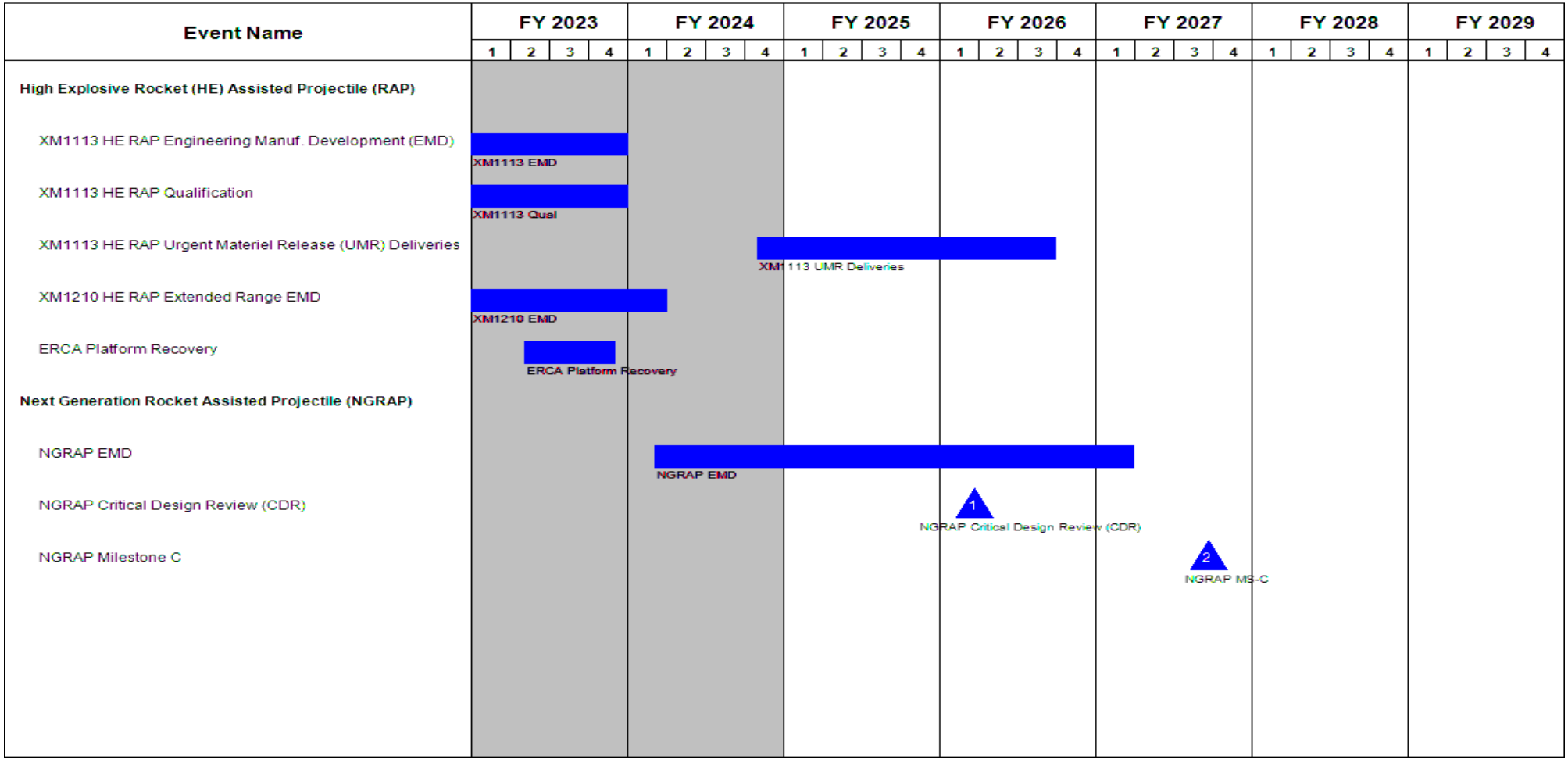


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EU6 / *155mm HE Rocket Assist Project Extended Range*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
High Explosive Rocket (HE) Assisted Projectile (RAP)	1	2019	4	2023
XM1113 HE RAP Engineering Manuf. Development (EMD)	4	2019	4	2023
XM1113 HE RAP Qualification	4	2019	4	2023
XM1113 HE RAP Safety and Robustness Improvement Activities	1	2021	3	2022
XM1113 HE RAP Critical Design Review (CDR)	2	2022	2	2022
XM1113 HE RAP Urgent Materiel Release (UMR) Deliveries	4	2024	3	2026
XM1210 HE RAP Extended Range EMD	2	2020	1	2024
XM1210 HE RAP Development Testing	1	2021	2	2022
XM1210 HE RAP Preliminary Design Review (PDR)	2	2021	2	2021
ERCA Platform Recovery	2	2023	4	2023
Next Generation Rocket Assisted Projectile (NGRAP)	1	2025	4	2027
NGRAP EMD	1	2024	1	2027
NGRAP Critical Design Review (CDR)	1	2026	1	2026
Precision Guidance Aft (PG-Aft) - Congressional Add	1	2020	1	2022
PG-Aft Development & Testing	1	2020	4	2022
NGRAP Milestone C	3	2027	3	2027

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EW1 / *40mm Low Velocity Ammunition*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EW1: *40mm Low Velocity Ammunition*	-	1.970	0.082	0.107	-	0.107	-	-	-	-	0.000	2.159
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The 40 millimeter (mm) Low Velocity High Explosive Air Burst (HEAB) is a new capability identified as a Warfighter counter-defilade requirement in the Capability Development Document (CDD), 40mm Low Velocity (LV) Family of Ammunition Annex. The HEAB tactical cartridge allows the Warfighter to engage targets at increased effective ranges using the 40mm M320 Grenade Launcher. The HEAB cartridge provides the grenadier with a higher probability of achieving a first shot kill against enemy personnel, coupled with the ability to defeat personnel targets in defilade positions. When deployed against point and area targets, the cartridge inflicts incapacitating effects against personnel beyond those offered by the current M433 High Explosive Dual Purpose (HEDP) cartridge. The cartridge provides lethal effects against targets with improved accuracy and greater standoff ranges resulting in increased soldier survivability. Fiscal Year (FY) 2025 funding will be used to support a Soldier Touch Point (STP) for the XM 1166 HEAB.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: 40mm LV HEAB, XM1166	1.970	0.082	0.107
Description: Engineering Manufacturing Development (EMD) of the 40mm LV HEAB munition. ***FY 2024 Plans:*** FY 2024 funds support test reports and close-out activities following Developmental Test and Evaluation (DT&E) and a final STP will be conducted to support FMR. ***FY 2025 Plans:*** Fiscal Year (FY) 2025 funding will be used to support a Soldier Touch Point (STP) for the XM1166 HEAB. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in funding from FY 2024 to FY 2025 reflects shifting of priorities from test reports and close-out activities to execution of a Soldier Touch Point (STP) in Fiscal Year (FY) 2025.			
Accomplishments/Planned Programs Subtotals	1.970	0.082	0.107

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EW1 / *40mm Low Velocity Ammunition*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E71005: *CTG, 40MM, LV HEAB, XM1166*	13.888	2.021	6.934	-	6.934	-	11.083	11.070	11.181	0.000	56.177

Remarks

D. Acquisition Strategy

The HEAB cartridge will be developed through a competitive Engineering and Manufacturing Development (EMD) Program. Potential designs were evaluated as part of the pre-EMD activities using a Cooperative Research and Development Agreement (CRADA) with contractors. For EMD, the Government awarded two contracts utilizing an Other Transaction Agreement (OTA) through Department of Defense (DoD) Ordnance Technology Consortium (DOTC). The EMD phase will consist of a series of Design Engineering Tests (DET) to assess the Contractors' design progress and ability of achieving the program objectives. Any shortcomings and deficiencies will be addressed prior to Developmental Test & Evaluation (DT&E). After DT&E and a successful Milestone C, the Government will award a single contract for Low Rate Initial Production (LRIP) and four production year options utilizing a follow-on Federal Acquisition Regulation (FAR) based contract.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) EW1 / *40mm Low Velocity Ammunition*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Manager Maneuver Ammunition Systems (PM MAS)	Various	Picatinny Arsenal : Picatinny Arsenal, NJ	-	-		0.082	Oct 2023	-		-		-	0.000	0.082	-
		Subtotal	-	-		0.082		-		-		-	0.000	0.082	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LV HEAB XM1166 Developmental Test and Evaluation (DT&E)	MIPR	Aberdeen Test Center (ATC) : Aberdeen, MD	0.707	1.798	Jan 2023	-		-		-		-	0.000	2.505	-
Soldier Touch Points	MIPR	Aberdeen Test Center (ATC) : Aberdeen, MD	0.101	0.172		-		0.107	Mar 2025	-		0.107	0.000	0.380	-
		Subtotal	0.808	1.970		-		0.107		-		0.107	0.000	2.885	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.808	1.970		0.082		0.107		-		0.107	0.000	2.967	N/A

Remarks

Notes:
Low Velocity (LV)
High Explosive Air Burst (HEAB)

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EW1 / *40mm Low Velocity Ammunition*

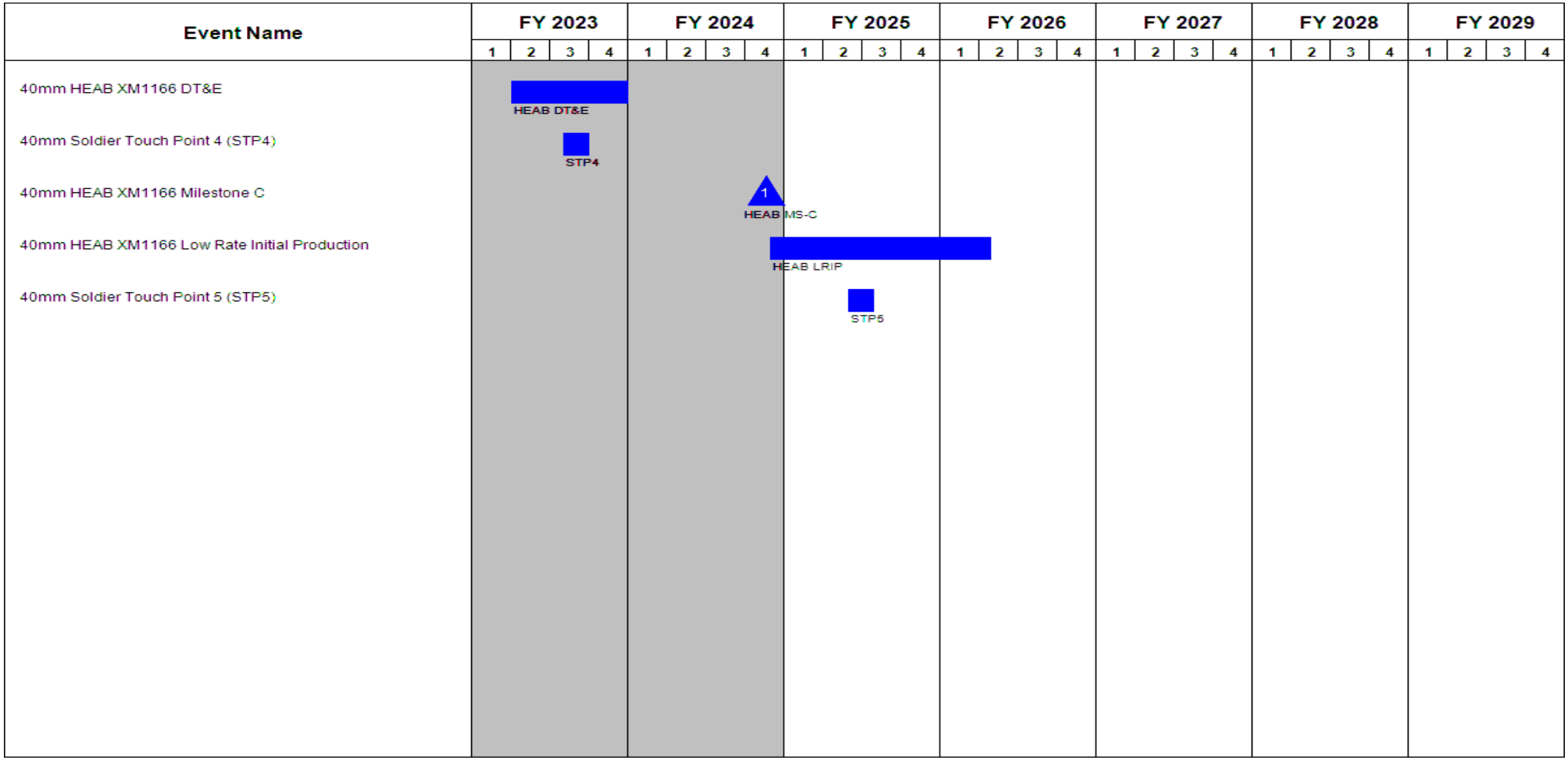


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** EW1 / *40mm Low Velocity Ammunition*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
40mm HEAB XM1166 Cooperative Research & Development Agreement (CRADA) Testing	3	2017	1	2018
40mm HEAB XM1166 Milestone B	4	2018	4	2018
40mm HEAB XM1166 Engineering Manufacturing Development	4	2018	4	2022
40mm HEAB XM1166 Preliminary Design Review	2	2019	2	2019
40mm HEAB XM1166 Design Engineering Test DET 1	1	2020	2	2020
40mm Soldier Touch Point 1 (STP1)	1	2020	2	2020
40mm HEAB XM1166 Design Engineering Test DET 2	4	2020	2	2021
40mm Soldier Touch Point 2 (STP2)	2	2021	2	2021
40mm HEAB XM1166 Critical Design Review	3	2022	3	2022
40mm HEAB XM1166 Design Engineering Test DET 3	3	2021	4	2021
40mm HEAB XM1166 Subsystem Testing	1	2022	3	2022
40mm Soldier Touch Point 3 (STP3)	4	2022	4	2022
40mm HEAB XM1166 DT&E	2	2023	4	2023
40mm Soldier Touch Point 4 (STP4)	3	2023	3	2023
40mm HEAB XM1166 Milestone C	4	2024	4	2024
40mm HEAB XM1166 Low Rate Initial Production	4	2024	2	2026
40mm Soldier Touch Point 5 (STP5)	2	2025	3	2025

Note

millimeter (mm)
Low Velocity (LV)
High Explosive Air Burst (HEAB)

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FA6 / *30mm Lethality*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FA6: *30mm Lethality*	-	13.337	3.014	-	-	-	-	-	-	-	0.000	16.351
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The 30 millimeter (mm) Lethality project funds the development of a suite of 30x173mm caliber cartridges, which includes a XM1182 High Explosive Airburst with Trace (HEAB-T) cartridge for increased anti-personnel effects, XM1170 Armor Piercing Fin Stabilized Discarding Sabot with Trace (APFSDS-T) cartridge for anti-materiel, and ballistically matched training cartridges; XM1173 Target Practice with Trace (TP-T) cartridge and XM1172 Target Practice Discarding Sabot with Trace (TPDS-T) cartridge. The objective is to enhance the operational effectiveness and lethality of the Stryker Infantry Carrier Vehicle (ICV), Next Generation Combat Vehicle (NGCV), and any Army Fighting Vehicles that are equipped with a 30x173mm weapon system. The tactical APFSDS-T cartridge will provide an organic direct fire capability to support infantry at a greater range and will improve lethality when engaging light-to-medium armored vehicles. The HEAB-T cartridge will provide the Warfighter with increased lethality against troops in the open, counter defilade, Anti-Tank Guided Missile (ATGM) teams, and troops behind urban structures. The training cartridges will be ballistically matched to the tactical cartridges, allowing the Warfighter to train in a cost-effective manner. This project is a follow-on of the earlier efforts in support of the United States Army Europe (USAREUR) Operational Needs Statement (ONS) #15-20590 Stryker Increased Lethality for the 2nd Cavalry Regiment (2CR). There is no FY 2025 request as the program transitions to production.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: 30X173mm Armor-Piercing Fin-Stabilized Discarding with Sabot Trace (APFSDS-T) and Target Practice Discarding Sabot with Trace (TPDS-T) ***Description:*** Qualify 30x173mm armor piercing tactical and training cartridges for use on Stryker ICV, NGCV or other Army Future Fighting Vehicles. ***FY 2024 Plans:*** FY 2024 primary activities will include Live Fire Test & Evaluation (LFT&E). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Program transitions to production in FY 2025.	8.627	1.124	-
Title: 30x173mm HEAB-T and TP-T ***Description:*** Develop and qualify a 30x173mm airburst cartridge and trainer for use on Stryker Infantry Combat Vehicles (ICV), Next Generation Combat Vehicles (NGCV), or other Army Future Fighting Vehicles. ***FY 2024 Plans:***	4.710	1.890	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FA6 / *30mm Lethality*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 primary activities will include Live Fire Test & Evaluation (LFT&E) and Initial Operational Test & Evaluation (IOT&E). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Program transitions to production in FY 2025.			
Accomplishments/Planned Programs Subtotals	13.337	3.014	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E07610: *CTG, 30MM, HEAB-T*	45.059	16.891	25.536	-	25.536	29.796	29.449	29.311	29.898	0.000	205.940
• E07306: *CTG, 30MM TP-T*	39.747	24.582	7.202	-	7.202	8.766	8.365	8.394	8.178	0.000	105.234
• E07406: *CTG, 30mm Hi Expl Incendry-T(HEI-T), Mk238 Series*	2.462	0.406	0.000	-	0.000	-	-	-	0.003	0.000	2.871
• E09191: *CTG, 30MM TPDS-T*	29.836	18.575	9.641	-	9.641	9.714	9.342	9.406	9.550	0.000	96.064
• E09292: *CTG, 30MM APFSDS-T*	0.059	6.919	15.862	-	15.862	20.282	20.223	20.489	20.649	0.000	104.483

Remarks

D. Acquisition Strategy

30X173mm APFSDS-T and TPDS-T: Proposals were requested from Industry to develop a 30x173mm APFSDS-T anti-materiel tactical cartridge (XM1170) and a 30x173mm TPDS-T ballistically matched training cartridge (XM1172) that will meet Army Performance Specifications and Stryker Lethality Annex Requirements. The Government awarded two contracts utilizing an Other Transaction Agreement (OTA) through Department of Defense (DoD) Ordnance Technology Consortium (DOTC) to support development, Design Engineering Tests (DET) and down-selected to one contract for Developmental Test & Evaluation (DT&E) in support of Milestone C. The Government will award Federal Acquisition Regulation (FAR)-based contracts for production of each cartridge.

30x173mm HEAB-T and TP-T: In support of the approved 30mm Multi-Function Munition Capability Development Document (CDD), the 30x173mm HEAB-T cartridge (XM1182) and the ballistically matched TP-T cartridge (XM1173) will be developed to meet the requirements. The Government awarded two contracts utilizing an Other Transaction Agreement (OTA) through Department of Defense (DoD) Ordnance Technology Consortium (DOTC) to support development, Design Engineering Tests (DET) and down-selected to one contract for Developmental Test & Evaluation (DT&E) in support of Milestone C. The Government will award a single FAR-based contract for production of the XM1182 HEAB-T and XM1173 TP-T cartridges.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FA6 / *30mm Lethality*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
High Explosive Airburst with Trace (HEAB-T) LFTE Assets	C/FFP	Northrop Grumman Defense Systems (NGDS) : Plymouth, MN	-	2.805	Jun 2024	-		-		-		-	0.000	2.805	-
Armor Piercing Fin Stabilized Discarding Sabot with Trace (APFSDS-T) DTE Asset Rebuild	C/FFP	General Dynamics - Ordnance and Tactical Systems (GD-OTS) : Marion, IL	-	4.990	Nov 2024	-		-		-		-	0.000	4.990	-
		Subtotal	-	7.795		-		-		-		-	0.000	7.795	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Development Command - Armaments Center (DEVCOM AC) : Picatinny Arsenal, NJ	11.719	3.534	Nov 2022	1.550	Nov 2023	-		-		-	0.000	16.803	-
		Subtotal	11.719	3.534		1.550		-		-		-	0.000	16.803	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
APFSDS-T Developmental Test & Evaluation (DTE) Test	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	-	1.299	Apr 2023	0.374	Mar 2024	-		-		-	0.000	1.673	-
HEAB-T Developmental Test & Evaluation (DTE) Test	MIPR	Aberdeen Test Center (ATC) :	-	0.709	May 2023	-		-		-		-	0.000	0.709	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FA6 / *30mm Lethality*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Aberdeen Proving Ground, MD													
HEAB-T Live Fire Test & Evaluation (LFTE) and IOT&E	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	-	-		1.090	Nov 2023	-		-		-	0.000	1.090	-
		Subtotal	-	2.008		1.464		-		-		-	0.000	3.472	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.719	13.337		3.014		-		-		-	0.000	28.070	N/A

Remarks

Design Engineering Tests (DET)
Engineering and Manufacturing Development (EMD)

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FA6 / *30mm Lethality*

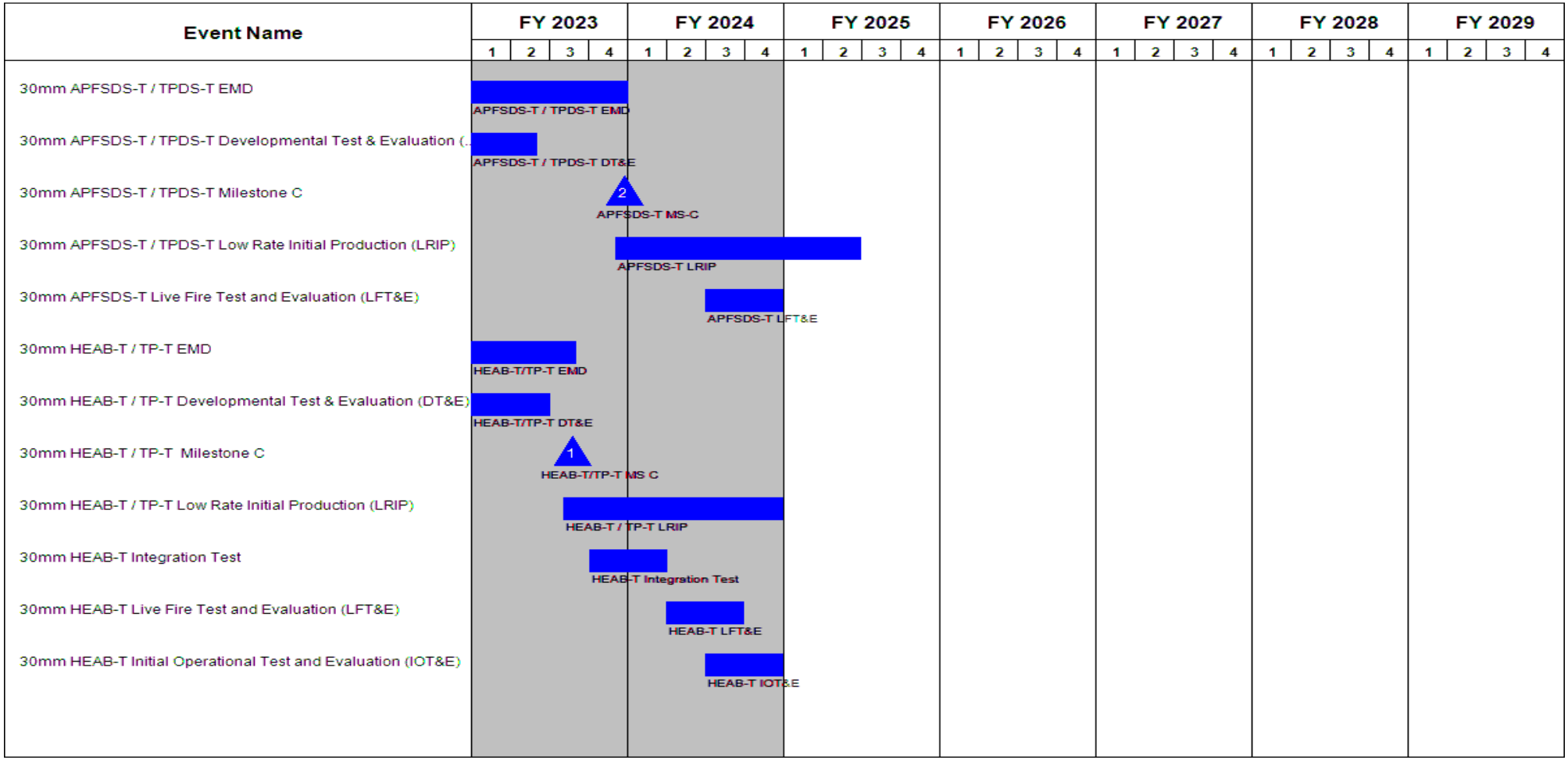


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FA6 / *30mm Lethality*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Materiel Development Decision (MDD)	3	2019	3	2019
30mm APFSDS-T / TPDS-T EMD Contract Award	4	2019	4	2019
30mm APFSDS-T / TPDS-T EMD	4	2019	4	2023
30mm APFSDS-T / TPDS-T DET Build	2	2020	3	2021
30mm APFSDS-T / TPDS-T Design Engineering Test (DET)	4	2021	1	2022
30mm APFSDS-T / TPDS-T Critical Design Review (CDR)	2	2022	2	2022
30mm APFSDS-T / TPDS-T DT&E Hardware Build	2	2022	4	2022
30mm APFSDS-T / TPDS-T Developmental Test & Evaluation (DT&E)	4	2022	2	2023
30mm APFSDS-T / TPDS-T Milestone C	4	2023	4	2023
30mm APFSDS-T / TPDS-T Low Rate Initial Production (LRIP)	4	2023	2	2025
30mm APFSDS-T Live Fire Test and Evaluation (LFT&E)	3	2024	4	2024
30mm HEAB-T TMRR Contract Awards	1	2019	1	2019
30mm HEAB-T Technology Maturation and Risk Reduction (TMRR)	1	2019	1	2020
30mm HEAB-T TMRR Engineering Test 1	3	2019	4	2019
30mm HEAB-T TMRR Engineering Test 2	4	2019	1	2020
30mm HEAB-T / TP-T Milestone B	2	2020	2	2020
30mm HEAB-T / TP-T EMD Contract Award	3	2020	3	2020
30mm HEAB-T / TP-T EMD	3	2020	3	2023
30mm HEAB-T / TP-T DET Build	2	2020	2	2021
30mm HEAB-T / TP-T EMD Design Engineering Test (DET)	2	2021	4	2021
30mm HEAB-T / TP-T Critical Design Review (CDR)	1	2022	1	2022
30mm HEAB-T / TP-T DT&E Build	4	2021	2	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FA6 / *30mm Lethality*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
30mm HEAB-T / TP-T Developmental Test & Evaluation (DT&E)	2	2022	2	2023
30mm HEAB-T / TP-T Milestone C	3	2023	3	2023
30mm HEAB-T / TP-T Low Rate Initial Production (LRIP)	3	2023	4	2024
30mm HEAB-T Integration Test	4	2023	1	2024
30mm HEAB-T Live Fire Test and Evaluation (LFT&E)	2	2024	3	2024
30mm HEAB-T Initial Operational Test and Evaluation (IOT&E)	3	2024	4	2024

Note

Engineering Manufacturing Development (EMD)
Armor Piercing Fin Stabilized Discarding Sabot with Trace (APFSDS-T)
Target Practice Discarding Sabot with Trace (TPDS-T)
High Explosive Airburst with Trace (HEAB-T)
Target-Practice with Trace (TP-T)
Technology Maturation and Risk Reduction (TMRR)

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FJ4 / *Cannon-Delivered Area Effects Munitions (C-DAEM)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FJ4: *Cannon-Delivered Area Effects Munitions (C-DAEM)*	-	89.029	85.071	93.267	-	93.267	89.588	83.855	85.579	87.840	0.000	614.229
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Cannon-Delivered Area Effects Munitions (C-DAEM) Project will provide United States (U.S.) ground forces with the capability to engage area personnel through armored targets, while denying threat forces full operational freedom within the targeted area. An Analysis of Alternatives (AoA) was completed in January 2018 to inform Army acquisition and investment decisions regarding replacement of the current stockpile of 155 millimeter (mm) Dual Purpose Improved Conventional Munitions (DPICM) with Department of Defense (DoD) policy compliant munitions and address anti-armor and extended range capability requirements. The Army validated two materiel solutions for C-DAEM to be pursued in parallel to support the Army's modernization priorities; C-DAEM Armor and C-DAEM DPICM Replacement. C-DAEM Armor will destroy moved and moving self-propelled howitzers, infantry fighting vehicles and tanks. C-DAEM DPICM Replacement will destroy personnel through soft-skinned targets. Fiscal Year (FY) 2025 funding will continue to support C-DAEM Armor development and testing activities as well as engineering efforts required to integrate the Military-Code (M-Code) Global Positioning System (GPS) Receiver into the selected C-DAEM Armor objective materiel solution(s).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: C-DAEM Armor ***Description:*** C-DAEM Armor will destroy moved and moving self-propelled howitzers, infantry fighting vehicles and tanks. ***FY 2024 Plans:*** FY 2024 funding will continue to support C-DAEM Armor development and testing activities as well as engineering efforts required to integrate the M-Code Global Positioning System (GPS) Receiver into the selected C-DAEM Armor objective materiel solution(s). ***FY 2025 Plans:*** FY 2025 funding will continue to support C-DAEM Armor development and testing activities as well as engineering efforts required to integrate the M-Code Global Positioning System (GPS) Receiver into the selected C-DAEM Armor objective materiel solution(s). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in funding in FY 2025 due to an increase in testing costs for C-DAEM Armor.	84.885	85.071	93.267
Title: C-DAEM DPICM Replacement ***Description:*** C-DAEM DPICM Replacement will destroy personnel through soft-skinned targets.	4.144	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FJ4 / *Cannon-Delivered Area Effects Munitions (C-DAEM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Accomplishments/Planned Programs Subtotals	89.029	85.071	93.267

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• F90112: *PROJ, ARTY, 155MM C-DAEM ARMOR*	-	57.488	11.318	-	11.318	105.210	111.848	145.715	181.550	0.000	613.129
• E68604: *PROJ, ARTY, 155MM C-DAEM INCREMENT II*	-	2.500	22.228	-	22.228	40.746	64.602	49.633	50.129	0.000	229.838

Remarks

A Procurement of Ammunition, Army (PAA) funding line for C-DAEM Armor, Standard Study Number (SSN), F90112, PROJ, ARTY, 155MM C-DAEM ARMOR, has been established.
A PAA funding line for C-DAEM DPICM Replacement, SSN E68604, PROJ, ARTY, 155MM C-DAEM INCREMENT II, has been established.

D. Acquisition Strategy

The C-DAEM Program of Record is employing an evolutionary acquisition approach to efficiently address anti-armor, extended range capability requirements and deliver DoD unexploded ordnance (UXO) policy compliant munitions.

The Analysis of Alternatives (AoA) completed on 31 January 2018 qualified a significant enhancement of operational fires effectiveness, efficiency, and maneuver support when cannon artillery was equipped with a dedicated extended range anti-armor projectile. The U.S. Government reduced risk by executing prototype testing and evaluation efforts, while utilizing the AoA results to shape the selection criteria. C-DAEM Armor used the selection criteria to sponsor competitive demonstrations for C-DAEM Armor to streamline the acquisition process. The U.S. Government has selected the most promising candidate that will address medium to heavy armored targets in accordance with the validated Capabilities Development Document (CDD) with an opportunity to field an Early Operational Capability (EOC). C-DAEM Armor is utilizing competitively awarded Defense Ordnance Technology Consortium (DOTC) Other Transaction Agreements (OTA) to further support development and testing of the selected C-DAEM Armor solution in accordance with the decisions granted at the most recent Army Requirements Oversight Council (AROC) in August 2022. C-DAEM Armor is utilizing competitively awarded DOTC OTAs to complete development and qualification activities, including the M-Code Global Positioning System (GPS) Receiver integration efforts, in support of Milestone C for Low Rate Initial Production (LRIP) and Full Rate Production (FRP).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FJ4 / *Cannon-Delivered Area Effects Munitions (C-DAEM)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Office of the Project Manager Combat Ammunition Systems (PM CAS) : Picatinny Arsenal, NJ	0.477	0.475	Oct 2022	0.400	Oct 2023	0.480	Oct 2024	-		0.480	0.000	1.832	-
		Subtotal	0.477	0.475		0.400		0.480		-		0.480	0.000	1.832	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DOTC - Armor Engineering and Manufacturing Development (EMD)	MIPR	DoD Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	63.835	74.193	Nov 2022	70.955	Nov 2023	74.387	Nov 2024	-		74.387	0.000	283.370	-
DOTC - Armor M-Code GPS Receiver Integration	MIPR	DoD Ordnance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	7.780	4.010	Nov 2022	3.500	Nov 2023	3.000	Nov 2024	-		3.000	0.000	18.290	-
		Subtotal	71.615	78.203		74.455		77.387		-		77.387	0.000	301.660	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	Combat Capabilities Development Command Armaments Center (DEVCOM AC) : Picatinny Arsenal, NJ	9.766	7.520	Nov 2022	6.716	Nov 2023	7.900	Oct 2024	-		7.900	0.000	31.902	-
		Subtotal	9.766	7.520		6.716		7.900		-		7.900	0.000	31.902	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FJ4 / *Cannon-Delivered Area Effects Munitions (C-DAEM)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Armor Testing	MIPR	Army Test & Evaluation Command (ATEC) : Yuma, AZ	-	-		3.500	Mar 2024	7.500	Mar 2025	-		7.500	0.000	11.000	-
DPICM Replacement Testing	MIPR	Army Test & Evaluation Command (ATEC) : Yuma, AZ	3.670	2.831	Sep 2023	-		-		-		-	0.000	6.501	-
		Subtotal	3.670	2.831		3.500		7.500		-		7.500	0.000	17.501	N/A

Remarks

Increase in FY 2025 testing costs to support performance verification testing requirements

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	85.528	89.029		85.071		93.267		-		93.267	0.000	352.895	N/A

Remarks

C-DAEM Armor will destroy moved and moving self-propelled howitzers, infantry fighting vehicles and tanks. C-DAEM Dual Purpose Improved Conventional Munition (DPICM) Replacement will destroy personnel to soft-skinned vehicles. C-DAEM Armor and DPICM Replacement are being pursued in parallel to support the Army's modernization priorities.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FJ4 / *Cannon-Delivered Area Effects Munitions (C-DAEM)*

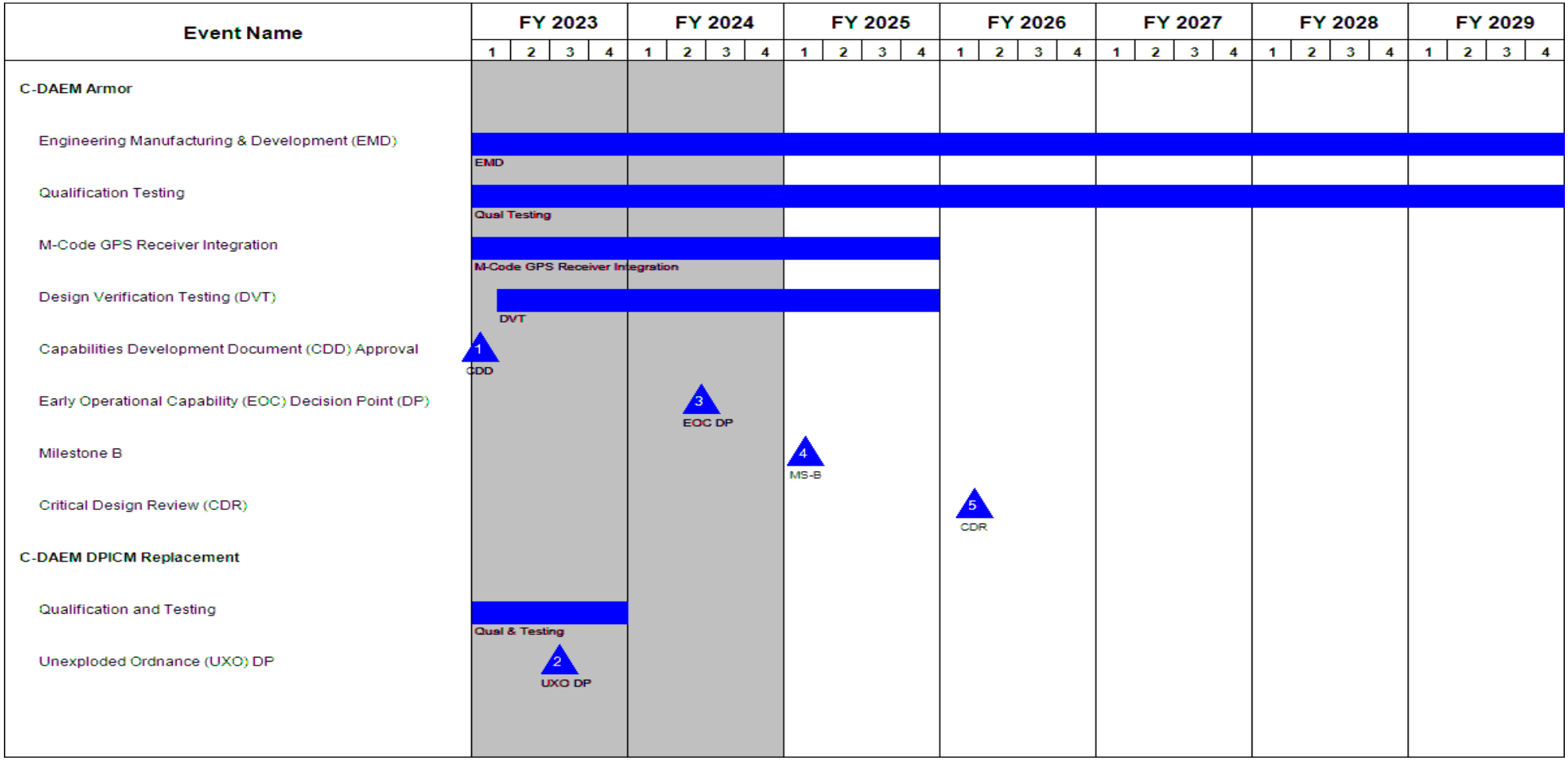


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FJ4 / *Cannon-Delivered Area Effects Munitions (C-DAEM)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
C-DAEM Armor	1	2022	4	2026
Technology Maturation and Risk Reduction (TMRR)	1	2020	4	2021
In Process Review (IPR) #1	1	2021	1	2021
IPR #2	2	2021	2	2021
Acquisition Decision Memorandum (ADM) #1	1	2022	1	2022
Engineering Manufacturing & Development (EMD)	1	2022	3	2030
Qualification Testing	1	2021	3	2030
M-Code GPS Receiver Integration	1	2022	4	2025
Design Verification Testing (DVT)	1	2022	4	2025
Integrated Baseline Review (IBR)	3	2022	3	2022
ADM #2	3	2022	3	2022
Preliminary Design Review (PDR)	4	2022	4	2022
Army Requirements Oversight Council (AROC) Decision	4	2022	4	2022
Capabilities Development Document (CDD) Approval	1	2023	1	2023
Early Operational Capability (EOC) Decision Point (DP)	2	2024	2	2024
Milestone B	1	2025	1	2025
Critical Design Review (CDR)	1	2026	1	2026
Milestone C	3	2030	3	2030
Initial Operational Test & Evaluation (IOT&E)	3	2031	3	2031
C-DAEM DPICM Replacement	1	2021	4	2023
Qualification and Testing	1	2021	4	2023
Unexploded Ordnance (UXO) DP	3	2023	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FJ4 / *Cannon-Delivered Area Effects Munitions (C-DAEM)*

Note

C-DAEM Armor will destroy moved and moving self-propelled howitzers, infantry fighting vehicles and tanks. CDR scheduled for 1Q FY26, IOT&E scheduled for 3Q FY31

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FL4: *Small Caliber Ammo for Next Gen Squad Weapons*	-	32.625	11.809	11.955	-	11.955	11.968	12.097	12.232	12.354	0.000	105.040
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

The total cost of the Small Caliber Ammo for Next Gen Squad Weapons Middle Tier of Acquisition effort is $156.7M million RDTE from FY2020 to FY2028 and $12.3M in FY2029.

A. Mission Description and Budget Item Justification

The Small Caliber Ammo for Next Gen Squad Weapons project is a critical technology development in response to the Soldier Lethality Cross Functional Team (SL CFT) Initial Capability Document (ICD) for the ammunition required to support the rapid prototyping, development, and fielding of the Next Generation Squad Weapons (NGSW) under the Middle Tier of Acquisition (MTA) authority for rapid prototyping/rapid fielding. The objective is to develop and Full Materiel Release (FMR) the new ammunition in parallel with the NGSW rifle and automatic rifle. The NGSW ammunition is split into multiple ammunition variants, the General Purpose (GP), the Special Purpose (SP), the Reduced Range Ammunition (RRA), Tracer Ammunition, Blank Ammunition, the Close Combat Mission Capability Kit (CCMCK) training ammunition, Drill Dummy Inert (DDI) cartridge, and High-Pressure Test (HPT) cartridge. Fiscal Year (FY) 2025 funding supports design optimization efforts for the SP, RRA, Blank, DDI, and HPT variants. FY 2025 funds also support Live-Fire Testing and Evaluation (LFT&E) activities on the GP, SP, and Tracer variants. FY 2025 funds support developmental testing on the CCMCK, Blank, DDI, and HPT variants. FY 2025 funds support Materiel Release efforts on the GP, SP, and variants. And, FY 2025 supports continuing the refinement, development, and maturation of the CCMCK, Blank, DDI, and HPT cartridges.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Rapid Prototyping GP	5.915	1.507	0.300
Description: Develop, demonstrate, and qualify new ammunition for the NGSW systems. ***FY 2024 Plans:*** Perform Urgent Materiel Release (UMR) preparation activities, initiate LFT&E, and commence design optimization effort. ***FY 2025 Plans:*** Perform LFT&E close-out activities in preparation for Full Materiel Release (FMR). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Program transitions from development into production.			
Title: Rapid Prototyping SP	7.300	4.052	3.500
Description: Develop, demonstrate, and qualify new ammunition to defeat hard targets for the NGSW systems.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: Conduct qualification testing, Soldier Touch Point (STP) / User Evaluation, and perform Urgent Materiel Release (UMR) preparation activities. ***FY 2025 Plans:*** Perform Urgent Materiel Release (UMR) preparation activities, initiate LFT&E, and commence design optimization effort. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease reflects program status nearing FMR.			
Title: Rapid Prototyping Reduced Range Ammunition (RRA) for NGSW ***Description:*** Develop and qualify RRA for the NGSW that will satisfy the requirement to provide training ammunition suitable for use on military installations with Surface Danger Zone (SDZ) restrictions. Two RRA variants will be developed under this effort - the NGSW RRA and the NGSW Reduced Range (RR) Tracer. ***FY 2024 Plans:*** Conduct a Soldier Touch Point (STP) / User evaluation, complete PQT, and perform Urgent Materiel Release (UMR) preparation activities. ***FY 2025 Plans:*** Commence design optimization effort and perform developmental tests. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 decrease reflects program status nearing FMR.	4.210	1.000	0.850
Title: Rapid Prototyping Tracer Ammunition for NGSW ***Description:*** Rapid prototyping effort to develop and field tracer ammunition for the NGSW systems by building and evaluating competing tracer ammunition designs/concepts then down-selecting to a final tracer design. ***FY 2024 Plans:*** Continue rapid prototyping effort, conduct a STP / user evaluation, and conduct PQT and LFT&E. ***FY 2025 Plans:*** Complete LFT&E, complete PQT, and perform activities in preparation for FMR. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	6.500	3.500	2.424

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2025 decrease reflects program status nearing FMR.			
Title: Rapid Prototyping CCMCK Training Ammo ***Description:*** Rapid prototyping effort to develop training ammunition for the NGSW systems by building and evaluating competing CCMCK training ammunition designs/concepts then down-selecting to a final design. ***FY 2024 Plans:*** Continue rapid prototyping effort to develop CCMCK training ammunition for the NGSW, building and evaluate CCMCK training ammunition designs/concepts, mature/refine selected design/designs in preparation for developmental testing. ***FY 2025 Plans:*** Perform prototype build and conduct developmental tests. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increase reflects shift from rapid prototyping effort to develop CCMCK training ammunition to prototype build and conduct developmental tests.	0.150	0.500	3.501
Title: Rapid Prototyping Blank, DDI and HPT Cartridges ***Description:*** Rapid prototyping effort to develop and field Blank, DDI and HPT cartridges for the NGSW weapon systems. ***FY 2024 Plans:*** Continue rapid prototyping effort to mature the Blank, DDI, and HPT cartridges/designs. Perform UMR preparation activities and commence design optimization efforts. ***FY 2025 Plans:*** Perform design optimization activities and conduct developmental tests. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY2025 reflects required testing efforts.	0.550	1.250	1.380
Accomplishments/Planned Programs Subtotals	24.625	11.809	11.955

	FY 2023	FY 2024
Congressional Add: Small Caliber Ammunition Component Manufacturing ***FY 2023 Accomplishments:*** Executed efforts to develop tooling and flexible manufacturing processes to enhance the production of critical components used in small caliber ammunition.	8.000	-
Congressional Adds Subtotals	8.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E06002: *NEXT GENERATION COMBAT ROUND*	52.623	35.896	38.140	-	38.140	70.227	70.219	70.218	70.922	Continuing	Continuing
• E06014: *NEXT GENERATION REDUCED RANGE ROUND*	22.543	107.341	112.406	-	112.406	117.732	117.732	167.832	169.509	0.000	815.095
• E06015: *NEXT GENERATION SQUAD WEAPON SPECIAL PURPOSE ROUND*	13.858	14.488	21.550	-	21.550	34.065	34.064	34.065	34.406	Continuing	Continuing
• E60011: *NEXT GENERATION BLANK ROUND*	7.472	33.519	33.793	-	33.793	64.205	64.205	64.205	64.847	Continuing	Continuing

Remarks

Procurement of Ammunition, Army E06002, E06014, E06015, and E60011: These funding lines supports the procurement of ammunition for the NGSW.

D. Acquisition Strategy

The NGSW ammunition program will utilize the Middle Tier of Acquisition (MTA) authority for rapid prototyping/rapid fielding to develop ammunition concepts/designs for the GP variant and the SP variant. The project will utilize Government developed projectile designs that will be delivered to development contractors as Government Furnished Material (GFM). The Government selected three contractors for the weapon system development and down-selected to a single contractor in FY 2022, prior to production contract award; with a planned Urgent Materiel Release (UMR) in FY 2024 and FMR in FY 2025. Development effort for the Reduced Range and Tracer ammunition follows a similar strategy beginning in FY 2021. Follow-on development efforts for additional NGSW ammunition variants including blank, CCMCK ammunition, DDI cartridge, and HPT cartridge commenced in FY 2022.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
General Purpose Projectile Development	Various	Various : Various	-	1.568	Dec 2022	-		-		-		-	Continuing	Continuing	Continuing
General Purpose Optimization	TBD	To Be Determined : To Be Determined	-	-		0.500	Feb 2024	-		-		-	Continuing	Continuing	Continuing
Projectile and Ammo Development Contract Special Purpose	Option/ CPFF	OLIN Winchester Corporation (LCAAP) : Independence, Missouri	9.241	0.615	Jul 2023	-		-		-		-	Continuing	Continuing	Continuing
Prototype Manufacturing Special Purpose	Various	Various : Various	4.141	3.166	Jan 2023	-		-		-		-	0.000	7.307	-
Tracer Ammunition Prototype Manufacturing	Option/ FFP	OLIN Winchester Corporation (LCAAP) : Independence, Missouri	3.975	3.995	Mar 2023	-		-		-		-	0.000	7.970	-
Reduced Range Ammunition Prototype Contract 2	Option/ FFP	OLIN Winchester Corporation : Independence, Missouri	1.574	0.103	Jul 2023	-		-		-		-	Continuing	Continuing	Continuing
Reduced Range Ammo Development	Option/ CPFF	Concurrent Technologies Corporation (CTC) : Johnstown, Pennsylvania	0.816	0.984	Nov 2022	-		-		-		-	Continuing	Continuing	Continuing
Reduced Range Ammo Weapon Integration	Option/ FFP	Sig Sauer : Newington, New Hampshire	2.484	0.250	May 2023	-		-		-		-	Continuing	Continuing	Continuing
CCMCK Training Ammo Development Contracts	TBD	To Be Determined : To Be Determined	-	-		0.250	Feb 2024	1.750	Feb 2025	-		1.750	0.000	2.000	-
Blank, DDI and HPT Development Contracts	TBD	To Be Determined : To Be Determined	-	0.250	May 2023	-		-		-		-	Continuing	Continuing	Continuing
Blank, DDI and HPT Optimization Contracts	TBD	To Be Determined : To Be Determined	-	-		0.650	Mar 2024	0.500	Feb 2025	-		0.500	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Small Caliber Components Manufacturing	Various	Various : Various	-	8.000	Sep 2023	-		-		-		-	0.000	8.000	-
		Subtotal	22.231	18.931		1.400		2.250		-		2.250	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Projectile Development and Support General Purpose	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	7.095	2.530	Nov 2022	0.507	Oct 2023	0.300	Oct 2024	-		0.300	0.000	10.432	-
Projectile Development and Support General Purpose	MIPR	Army Research Lab (ARL) : Aberdeen, Maryland	1.903	0.750	Feb 2023	-		-		-		-	Continuing	Continuing	Continuing
Projectile Development and Support Special Purpose	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	6.322	1.836	Nov 2022	1.602	Oct 2023	1.500	Oct 2024	-		1.500	Continuing	Continuing	Continuing
Special Purpose Support ARL	MIPR	Army Research Lab (ARL) : Aberdeen, Maryland	1.500	0.750	Feb 2023	0.900	Oct 2023	-		-		-	0.000	3.150	-
Reduced Range Ammunition Prototype and Support	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	2.666	1.623	Nov 2022	0.400	Oct 2023	0.850	Oct 2024	-		0.850	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Reduced Range Ammunition Support ARL	MIPR	Army Research Lab (ARL) : Aberdeen, Maryland	-	0.750		0.250	Oct 2023	-		-		-	Continuing	Continuing	Continuing
Tracer Ammunition Development and Support	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	0.350	1.755	Nov 2022	0.600	Oct 2023	0.924	Oct 2024	-		0.924	Continuing	Continuing	Continuing
Tracer Ammunition Support ARL	MIPR	Army Research Lab (ARL) : Aberdeen, Maryland	-	0.750	Feb 2023	0.750	Jan 2024	-		-		-	Continuing	Continuing	Continuing
CCMCK Training Development and Support	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	0.150	0.150	Nov 2022	0.150	Oct 2023	0.701	Oct 2024	-		0.701	Continuing	Continuing	Continuing
CCMCK Training Ammo Development and Support	MIPR	Army Research Lab (ARL) : Aberdeen, Maryland	-	-		0.100	Dec 2023	0.300	Dec 2024	-		0.300	Continuing	Continuing	Continuing
Blank, DDI and HPT Development and Support	MIPR	Development Command Armaments Center (DEVCOM-AC) : Picatinny Arsenal, New Jersey	0.200	0.300	Nov 2022	0.200	Oct 2023	0.480	Oct 2024	-		0.480	Continuing	Continuing	Continuing
		Subtotal	20.186	11.194		5.459		5.055		-		5.055	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
U.S. Army Aberdeen Test Center (ATC) General Purpose	MIPR	Aberdeen Proving Ground : Aberdeen, Maryland	0.900	1.550	Apr 2023	-		-		-		-	Continuing	Continuing	Continuing
General Purpose User Assessment	MIPR	Maneuver Battle Labs : Fort Benning, Georgia	-	0.450	Apr 2023	-		-		-		-	0.000	0.450	-
General Purpose Live-Fire Testing	MIPR	U.S. Army Aberdeen Test Center (ATC) : Aberdeen, Maryland	-	-		0.500	Mar 2024	-		-		-	Continuing	Continuing	Continuing
U.S. Army Aberdeen Test Center (ATC) Special Purpose	MIPR	Aberdeen Proving Ground : Aberdeen, Maryland	0.500	-		1.000	Oct 2023	-		-		-	0.000	1.500	-
Special Purpose User Assessment	MIPR	Maneuver Battle Labs : Fort Benning, Georgia	-	-		0.550	Oct 2023	-		-		-	Continuing	Continuing	Continuing
Reduced Range Ammunition Prototype Testing	MIPR	U.S. Army Aberdeen Test Center (ATC) : Aberdeen, Maryland	0.500	0.500	Mar 2023	-		-		-		-	Continuing	Continuing	Continuing
Reduced Range Ammo User Assessment	MIPR	Maneuver Battle Labs : Fort Benning, Georgia	-	-		0.350	Oct 2023	-		-		-	0.000	0.350	-
Tracer Live-Fire Testing	MIPR	U.S. Army Aberdeen Test Center (ATC) : Aberdeen, Maryland	-	-		1.200	Oct 2023	0.750	Oct 2024	-		0.750	Continuing	Continuing	Continuing
Tracer Production Qualification Tests	TBD	To Be Determined : To Be Determined	-	-		0.700	Oct 2023	0.500	Oct 2024	-		0.500	Continuing	Continuing	Continuing
User Assessment Tracer Ammunition	MIPR	Maneuver Battle Labs : Fort Benning, Georgia	0.083	-		0.250	Oct 2023	0.250	Oct 2024	-		0.250	0.000	0.583	-
Blank, DDI, HPT Developmental Tests	TBD	To Be Determined : To Be Determined	-	-		0.400	Oct 2023	0.400	Oct 2024	-		0.400	Continuing	Continuing	Continuing
Special Purpose Live-Fire Testing	MIPR	U.S. Army Aberdeen Test Center (ATC : Aberdeen, Maryland	-	-		-		2.000	Oct 2024	-		2.000	0.000	2.000	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CCMCK Developmental Testing	TBD	To Be Determined : To Be Determined	-	-		-		0.750	Oct 2024	-		0.750	0.000	0.750	-
		Subtotal	1.983	2.500		4.950		4.650		-		4.650	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.400	32.625		11.809		11.955		-		11.955	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

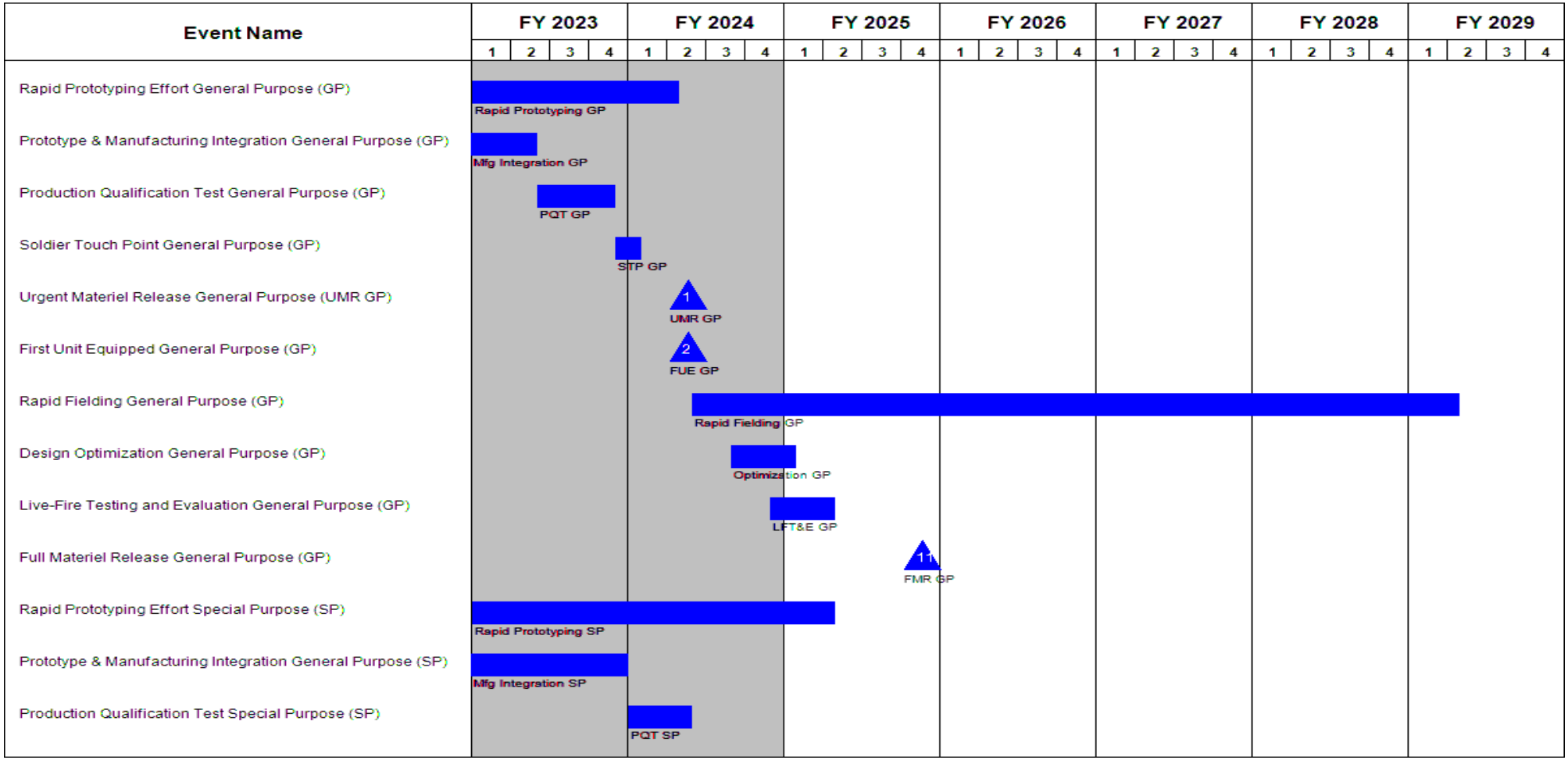


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

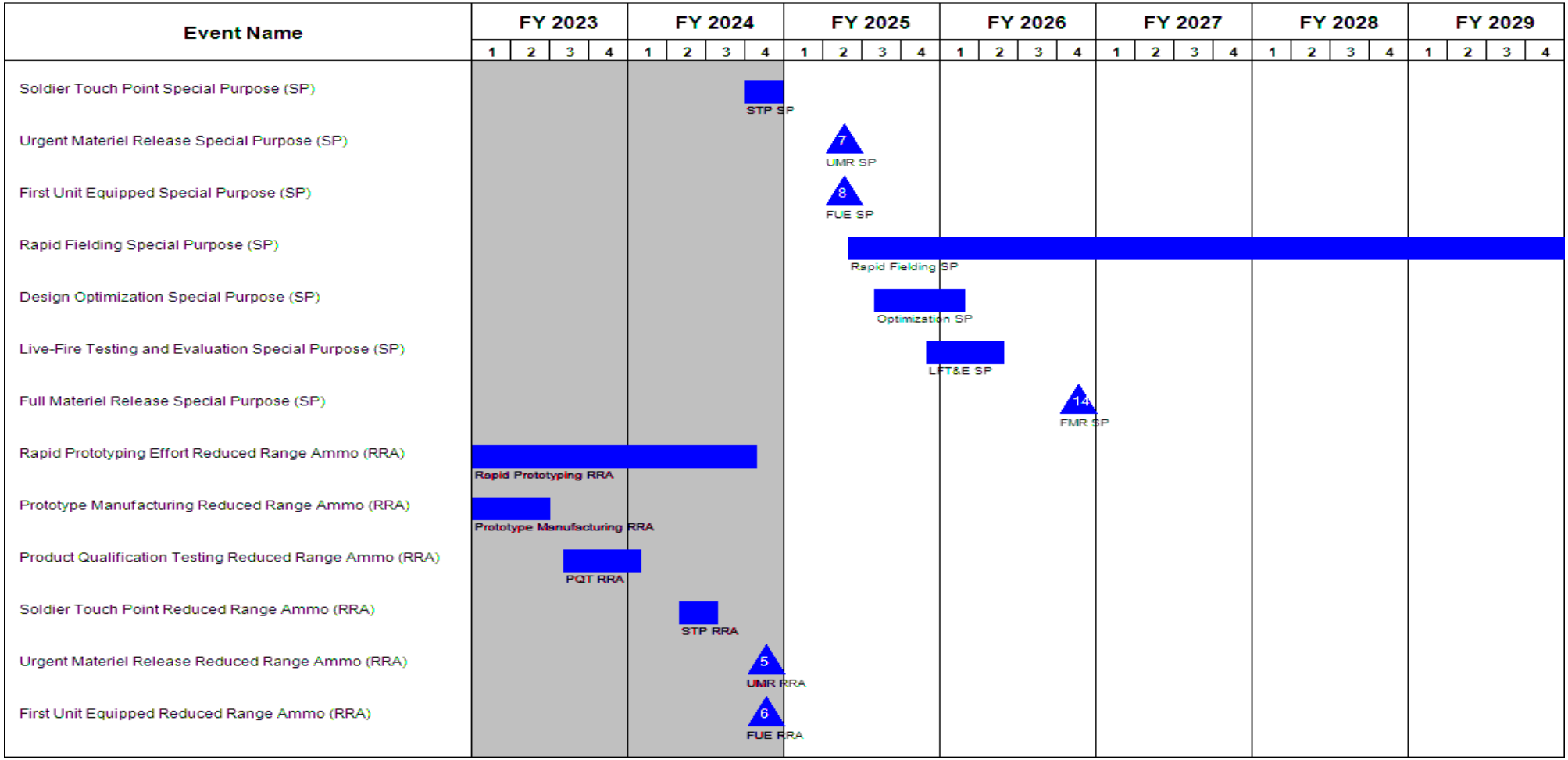


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

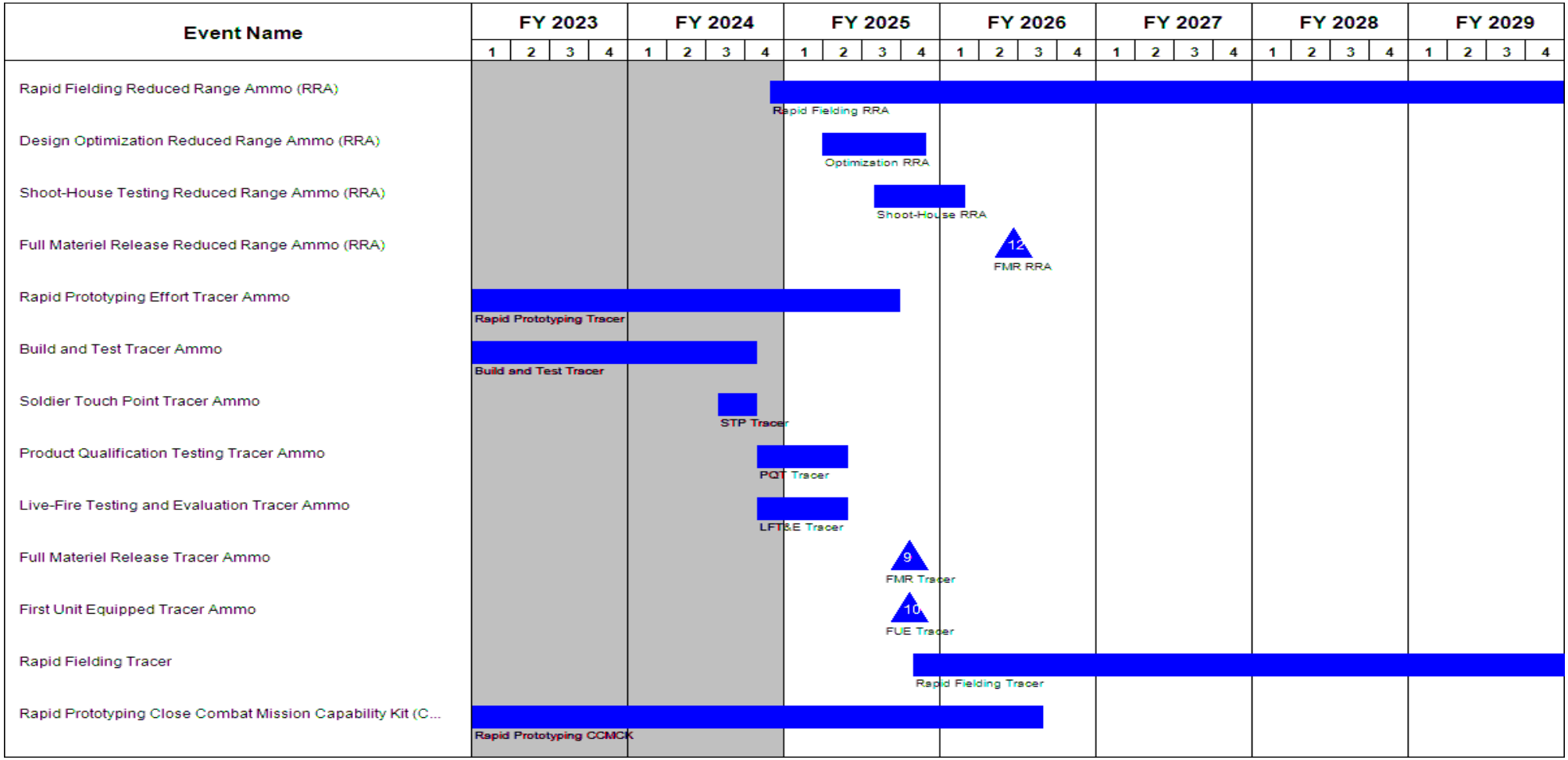


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

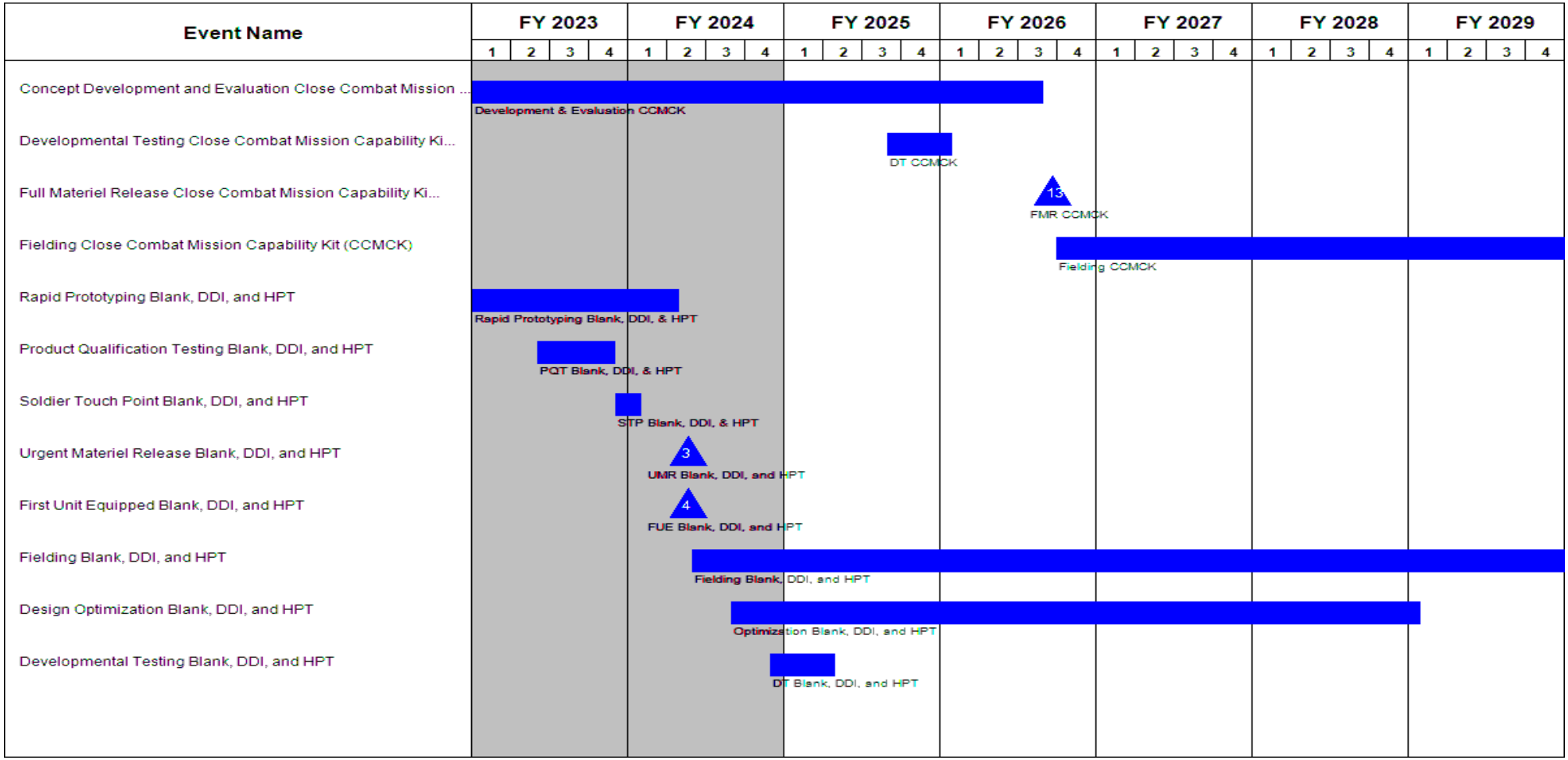


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Rapid Prototyping Effort General Purpose (GP)	1	2019	2	2024
Prototype & Manufacturing Integration General Purpose (GP)	4	2021	2	2023
Production Qualification Test General Purpose (GP)	2	2023	4	2023
Soldier Touch Point General Purpose (GP)	4	2023	1	2024
Urgent Materiel Release General Purpose (UMR GP)	2	2024	2	2024
First Unit Equipped General Purpose (GP)	2	2024	2	2024
Rapid Fielding General Purpose (GP)	2	2024	2	2029
Design Optimization General Purpose (GP)	3	2024	1	2025
Live-Fire Testing and Evaluation General Purpose (GP)	4	2024	2	2025
Full Materiel Release General Purpose (GP)	4	2025	4	2025
Rapid Prototyping Effort Special Purpose (SP)	1	2019	2	2025
Prototype & Manufacturing Integration General Purpose (SP)	4	2021	4	2023
Production Qualification Test Special Purpose (SP)	1	2024	2	2024
Soldier Touch Point Special Purpose (SP)	4	2024	4	2024
Urgent Materiel Release Special Purpose (SP)	2	2025	2	2025
First Unit Equipped Special Purpose (SP)	2	2025	2	2025
Rapid Fielding Special Purpose (SP)	2	2025	2	2030
Design Optimization Special Purpose (SP)	3	2025	1	2026
Live-Fire Testing and Evaluation Special Purpose (SP)	4	2025	2	2026
Full Materiel Release Special Purpose (SP)	4	2026	4	2026
Rapid Prototyping Effort Reduced Range Ammo (RRA)	1	2021	4	2024
Prototype Manufacturing Reduced Range Ammo (RRA)	1	2021	2	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Product Qualification Testing Reduced Range Ammo (RRA)	3	2023	1	2024
Soldier Touch Point Reduced Range Ammo (RRA)	2	2024	3	2024
Urgent Materiel Release Reduced Range Ammo (RRA)	4	2024	4	2024
First Unit Equipped Reduced Range Ammo (RRA)	4	2024	4	2024
Rapid Fielding Reduced Range Ammo (RRA)	4	2024	4	2029
Design Optimization Reduced Range Ammo (RRA)	2	2025	4	2025
Shoot-House Testing Reduced Range Ammo (RRA)	3	2025	1	2026
Full Materiel Release Reduced Range Ammo (RRA)	2	2026	2	2026
Rapid Prototyping Effort Tracer Ammo	1	2022	3	2025
Build and Test Tracer Ammo	1	2022	4	2024
Soldier Touch Point Tracer Ammo	3	2024	4	2024
Product Qualification Testing Tracer Ammo	4	2024	2	2025
Live-Fire Testing and Evaluation Tracer Ammo	4	2024	2	2025
Full Materiel Release Tracer Ammo	4	2025	4	2025
First Unit Equipped Tracer Ammo	4	2025	4	2025
Rapid Fielding Tracer	4	2025	4	2030
Rapid Prototyping Close Combat Mission Capability Kit (CCMCK)	1	2022	3	2026
Concept Development and Evaluation Close Combat Mission Capability Kit (CCMCK)	1	2022	3	2026
Developmental Testing Close Combat Mission Capability Kit (CCMCK)	3	2025	1	2026
Full Materiel Release Close Combat Mission Capability Kit (CCMCK)	3	2026	3	2026
Fielding Close Combat Mission Capability Kit (CCMCK)	4	2026	4	2031
Rapid Prototyping Blank, DDI, and HPT	1	2022	2	2024
Product Qualification Testing Blank, DDI, and HPT	2	2023	4	2023
Soldier Touch Point Blank, DDI, and HPT	4	2023	1	2024
Urgent Materiel Release Blank, DDI, and HPT	2	2024	2	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** FL4 / *Small Caliber Ammo for Next Gen Squad Weapons*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
First Unit Equipped Blank, DDI, and HPT	2	2024	2	2024
Fielding Blank, DDI, and HPT	2	2024	4	2033
Design Optimization Blank, DDI, and HPT	3	2024	1	2029
Developmental Testing Blank, DDI, and HPT	4	2024	2	2025

Note

Special Purpose (SP)
General Purpose (GP)
Close Combat Mission Capability Kit (CCMCK)
Drill Dummy Inert (DDI)
High Pressure Test (HPT)

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) MS1 / *Battalion Mortar System Modernization*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
MS1: *Battalion Mortar System Modernization*	-	-	-	6.012	-	6.012	-	-	-	-	0.000	6.012
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Battalion Mortar System Modernization is a new start within the Weapons and Munitions - Eng Dev program in FY 2025.

This Project is a New Start in FY 2025.

A. Mission Description and Budget Item Justification

The Battalion Mortar System Modernization Project supports the development and demonstration of modernized Mortar Weapon Systems to support Infantry Brigade Combat Teams (IBCTs) and Armored Brigade Combat Teams (ABCTs). Efforts include development and qualification of said modernized systems and their required components that will increase lethality, survivability, mobility and readiness. FY 2025 funding will enable design and development effort for the weapon and mobility system for next generation 81mm and 120mm mortar weapon systems. The weapon and mobility systems will be qualified and integrated directly onto light tactical vehicles such as the High Mobility Multipurpose Wheeled Vehicle (HMMWV), the Infantry Squad Vehicle (ISV) and/or Joint Lightweight Tactical Vehicle (JLTV). The mobility system will address obsolescence by eliminating the need for a trailer mounted Mortar Stowage Kit (MSK). The modernized system will increase survivability, maneuverability, and provide a tactical advantage to the Warfighter when matched with pacing threat for direct and indirect fire and will provide overmatching capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Mortar Weapon and Mobility System Modernization	-	-	6.012
Description: This effort will modernize the 81 millimeter (mm) and 120 mm weapon and mobility systems to increase range, modularity, system survivability, maneuverability, and provide a tactical advantage to the Warfighter when matched with pacing threat for direct and indirect fire and will provide overmatching capabilities.			
FY 2025 Plans: FY 2025 funding will further the 81mm mortar weapon system development, prototyping and testing for the Infantry Battalion Mortar System (IBMS) to increase range and lethality. FY 2025 funding will also evaluate commercially available mobility systems and engineer their integration directly onto light tactical vehicles such as the High Mobility Multipurpose Wheeled Vehicle (HMMWV), the Infantry Squad Vehicle (ISV) and/or Joint Lightweight Tactical Vehicle (JLTV). Additionally, the funding will progress development efforts to re-design the Mortar Stowage Kit (MSK), a key component of the towed 120 mm mortar weapon			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** MS1 / *Battalion Mortar System Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
system and qualify it to be integrated directly onto a tactical vehicle. This will increase mobility and address obsolescence by eliminating the need for a trailer. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** New Start Project in FY 2025 with no funding in FY 2024.			
Accomplishments/Planned Programs Subtotals	-	-	6.012

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• G02200: *Mortar Systems*	21.946	8.013	8.353	-	8.353	14.229	13.892	13.903	14.044	Continuing	Continuing

Remarks

D. Acquisition Strategy

Other Transaction Authority (OTA) contract vehicle(s) under section 4023 will be utilized to execute the engineering, manufacturing/prototyping and development of the Infantry Battalion Mortar System. Mortar Stowage Kit (MSK) modernization will execute an existing Federal Acquisition Regulation (FAR) Mortar Weapon System contract with Elbit Systems to complete modernization activities and purchase test assets. Weapon design, prototype manufacturing and testing will be government led activities at Picatinny Arsenal in New Jersey, the United States Army Combat Capabilities Development Command (DEVCOM) Armaments Center Benet Labs in Watervliet Arsenal New York, and U.S. Army Test and Evaluation Command (ATEC) in Arizona and Maryland.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) MS1 / *Battalion Mortar System Modernization*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office	Various	Office of the Project Manager (OPM) Combat Ammunition Systems (CAS) : Picatinny Arsenal, NJ	-	-		-		0.100	Oct 2024	-		0.100	0.000	0.100	-
		Subtotal	-	-		-		0.100		-		0.100	0.000	0.100	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mortar Stowage Kit (MSK) Modernization	Reqn	Elbit America : Ft. Worth, TX	-	-		-		1.100	Jan 2025	-		1.100	0.000	1.100	-
Infantry Battalion Mortar System (IBMS) Mobility System	TBD	TBD : TBD	-	-		-		0.500	Dec 2024	-		0.500	0.000	0.500	-
Infantry Battalion Mortar System Forgings	TBD	TBD : TBD	-	-		-		0.500	Dec 2024	-		0.500	0.000	0.500	-
		Subtotal	-	-		-		2.100		-		2.100	0.000	2.100	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MSK Modernization Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ and Watervliet Arsenal, NJ	-	-		-		0.803	Oct 2024	-		0.803	0.000	0.803	-
IBMS Engineering Support	MIPR	DEVCOM AC Benet Labs : Picatinny Arsenal, NJ	-	-		-		1.003	Dec 2024	-		1.003	0.000	1.003	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) MS1 / *Battalion Mortar System Modernization*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		1.806		-		1.806	0.000	1.806	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MSK Modernization Testing	MIPR	ATEC Aberdeen Proving Grounds : Aberdeen, MD	-	-		-		1.003	Mar 2025	-		1.003	0.000	1.003	-
Infantry Battalion Mortar System Testing	MIPR	ATEC : Yuma Proving Ground, Aberdeen Proving Ground	-	-		-		1.003	Jun 2025	-		1.003	0.000	1.003	-
		Subtotal	-	-		-		2.006		-		2.006	0.000	2.006	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		6.012		-		6.012	0.000	6.012	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** MS1 / *Battalion Mortar System Modernization*

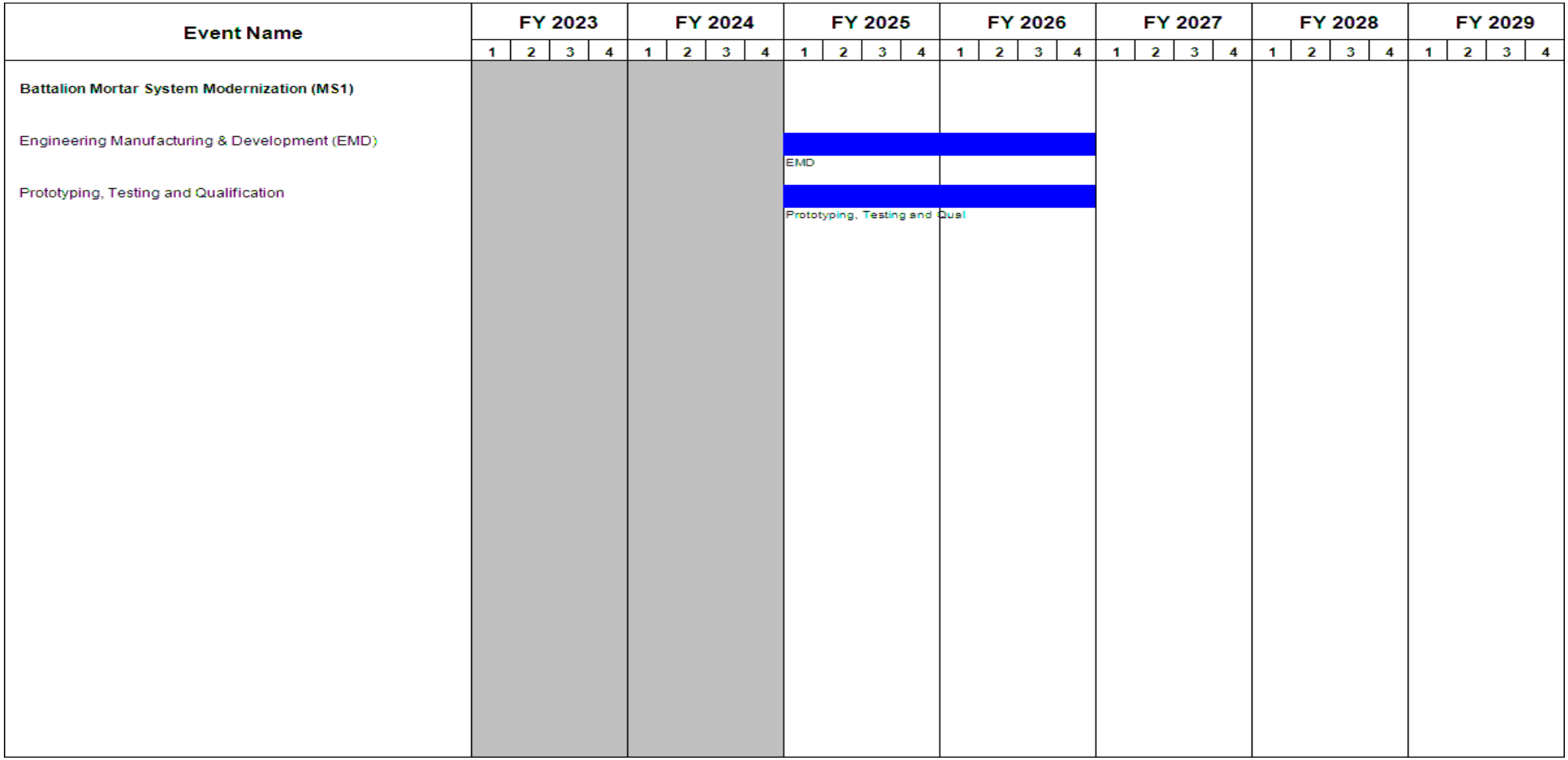


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** MS1 / *Battalion Mortar System Modernization*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Battalion Mortar System Modernization (MS1)	1	2025	1	2025
Engineering Manufacturing & Development (EMD)	1	2025	4	2026
Prototyping, Testing and Qualification	1	2025	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) S36 / *Precision Guidance Kit*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
S36: *Precision Guidance Kit*	-	53.749	33.564	55.637	-	55.637	53.186	47.062	22.317	3.465	0.000	268.980
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Precision Guidance Kit (PGK) Project supports development efforts that will qualify state of the art technologies for a course correcting fuze that provides precision accuracy at extended ranges for current and future 155-millimeter (mm) High Explosive (HE) projectiles by eliminating a portion of the inherent errors associated with ballistic firing solutions, which effectively reduces the number of projectiles required to execute fire missions. The precision course correcting fuze will support projectile operation in Global Positioning System (GPS) degraded environments in support of the Army's Cannon Modernization Strategy. All 39-caliber weapon systems and modernized Self-Propelled Howitzer (SPH) weapon systems with cannon lengths greater than or equal to 52-caliber and new long-range projectiles require the precision course correcting fuze to meet lethality requirements. FY 2025 funding will continue to support the fabrication of precision course correcting fuze hardware, safety and development testing, and further refines the Artillery fuze design.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Long Range-Precision Guidance Kit (LR-PGK) Development	28.749	33.564	55.637
Description: This development effort will qualify state of the art technologies for operation in GPS degraded environments as well as ensure compatibility with 39-caliber weapon systems and all Self-Propelled Howitzer weapon systems with cannon lengths greater than or equal to 52-caliber and projectiles in support of the Army's Cannon Modernization Strategy. ***FY 2024 Plans:*** FY 2024 funding will continue to support the fabrication of LR-PGK hardware, safety and development testing, and accomplishes a Preliminary Design Review (PDR). ***FY 2025 Plans:*** FY 2025 funding will continue to support the fabrication of precision course correcting fuze hardware, safety and development testing, and further refines the Artillery fuze design. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in funding in FY 2025 due to increase in contract costs associated with precision course correcting fuze development efforts.			
Accomplishments/Planned Programs Subtotals	28.749	33.564	55.637

	FY 2023	FY 2024
Congressional Add: Anti-Jam Precision Guidance Kit	25.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** S36 / *Precision Guidance Kit*

	FY 2023	FY 2024
FY 2023 Accomplishments: FY 2023 Congressional Add supported Precision Guidance Kit Extended Range (PGK-ER) development efforts that provide a risk mitigation alternative to support the Extended Range Cannon Artillery (ERCA) System of Systems Operational Assessment and demonstrate its anti-jam capability with the 58 caliber ERCA Self-Propelled Howitzer (SPH) system.		
Congressional Adds Subtotals	25.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• E99250: *FUZE,155mm ARTY Precision Guidance Kit (PGK)*	69.208	26.016	66.533	-	66.533	1.192	1.191	1.210	1.221	0.000	166.571
• E99251: *LONG-RANGE PRECISION GUIDANCE KIT (LR-PGK)*	-	8.248	0.000	-	0.000	64.904	97.881	99.383	100.377	0.000	370.793

Remarks

Procurement of Ammunition, Army (PAA) funding for Precision Guidance Kit (PGK), Standard Study Number (SSN) E99250, and Long Range-Precision Guidance Kit (LR-PGK), SSN E99251, have been established to deliver precision course correcting fuzes for 39-caliber weapon systems and all Self-Propelled Howitzer weapon systems with cannon lengths greater than or equal to 52-caliber.

D. Acquisition Strategy

The precision course correcting fuze development efforts are focused on addressing performance in Global Positioning System (GPS) degraded environments to include anti-jam capability as well as ensuring compatibility with the Army's 39-caliber weapon systems and new long range 155mm cannon and projectiles. The contracting strategy includes competitive DoD Ordnance Technology Consortium (DOTC) and Cornerstone Other Transaction Agreement (OTA) concept development efforts. This development program has the objective to develop and safety qualify a modernized configuration to support the 39-caliber weapon systems and all Self-Propelled Howitzer weapon systems with cannon lengths greater than or equal to 52-caliber. The Full Materiel Release (FMR) qualification effort will begin in FY 2028 to support Milestone C in FY 2029. The program will transition to a Federal Acquisition Regulation (FAR) based production contract to support deliveries. Subsequent to Milestone C, the program will transition to a FAR based contract for Low Rate Initial Production (LRIP) and Full Rate Production (FRP) to support the delivery of the FMR configuration quantities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) S36 / *Precision Guidance Kit*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office	Various	Office of the Project Manager (PM) Combat Ammunition Systems (CAS) : Picatinny Arsenal, NJ	14.118	0.100	Oct 2022	0.100	Oct 2023	0.100	Oct 2024	-		0.100	0.000	14.418	14.067
		Subtotal	14.118	0.100		0.100		0.100		-		0.100	0.000	14.418	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Manufacturing Development (EMD)	MIPR	DOD Ordnance Consortium (DOTC) / Multiple : Various	67.596	25.025	Feb 2023	25.713	Nov 2023	48.537	Nov 2024	-		48.537	0.000	166.871	33.046
Cornerstone Hardware - Congressional Add	MIPR	Cornerstone OTA / Multiple : Various	-	22.213	May 2023	-		-		-		-	0.000	22.213	-
Developmental Hardware	Reqn	American Ordnance, LLC : Middletown, IA	0.115	-		-		-		-		-	0.000	0.115	-
Software Engineering	Reqn	Leidos, Inc. : Reston, VA	1.399	-		-		-		-		-	0.000	1.399	-
		Subtotal	69.110	47.238		25.713		48.537		-		48.537	0.000	190.598	N/A

Remarks

Additional funding required in FY 2025 for contractor hardware fabrication in support of Guided Flight Testing and Anti-Jam Testing.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	MIPR	Combat Capabilities Development Command Armaments Center	50.230	2.708	Nov 2022	4.651	Oct 2023	3.500	Oct 2024	-		3.500	0.000	61.089	41.412

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) S36 / *Precision Guidance Kit*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		(DEVCOM AC) : Picatinny Arsenal, NJ													
Engineering Support - Congressional Add	MIPR	Combat Capabilities Development Command Armaments Center (DEVCOM AC) : Picatinny Arsenal, NJ	-	1.032	Jun 2023	-		-		-		-	0.000	1.032	-
		Subtotal	50.230	3.740		4.651		3.500		-		3.500	0.000	62.121	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Development Testing	MIPR	Army Test and Evaluation Command (ATEC) Yuma Proving Ground (YPG) : Yuma, AZ	12.095	0.916	Jun 2023	3.100	Nov 2023	3.500	Nov 2024	-		3.500	0.000	19.611	10.442
Testing - Congressional Add	MIPR	Army Test and Evaluation Command (ATEC) Yuma Proving Ground (YPG) : Yuma, AZ	-	1.755	Jan 2024	-		-		-		-	0.000	1.755	-
		Subtotal	12.095	2.671		3.100		3.500		-		3.500	0.000	21.366	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	145.553	53.749		33.564		55.637		-		55.637	0.000	288.503	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604802A / *Weapons and Munitions - Eng Dev*	Project (Number/Name) S36 / *Precision Guidance Kit*	

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Defense Ordnance Technology Consortium (DOTC)
Engineering and Manufacturing Development (EMD)
Army Test and Evaluation Command (ATEC)

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** S36 / *Precision Guidance Kit*

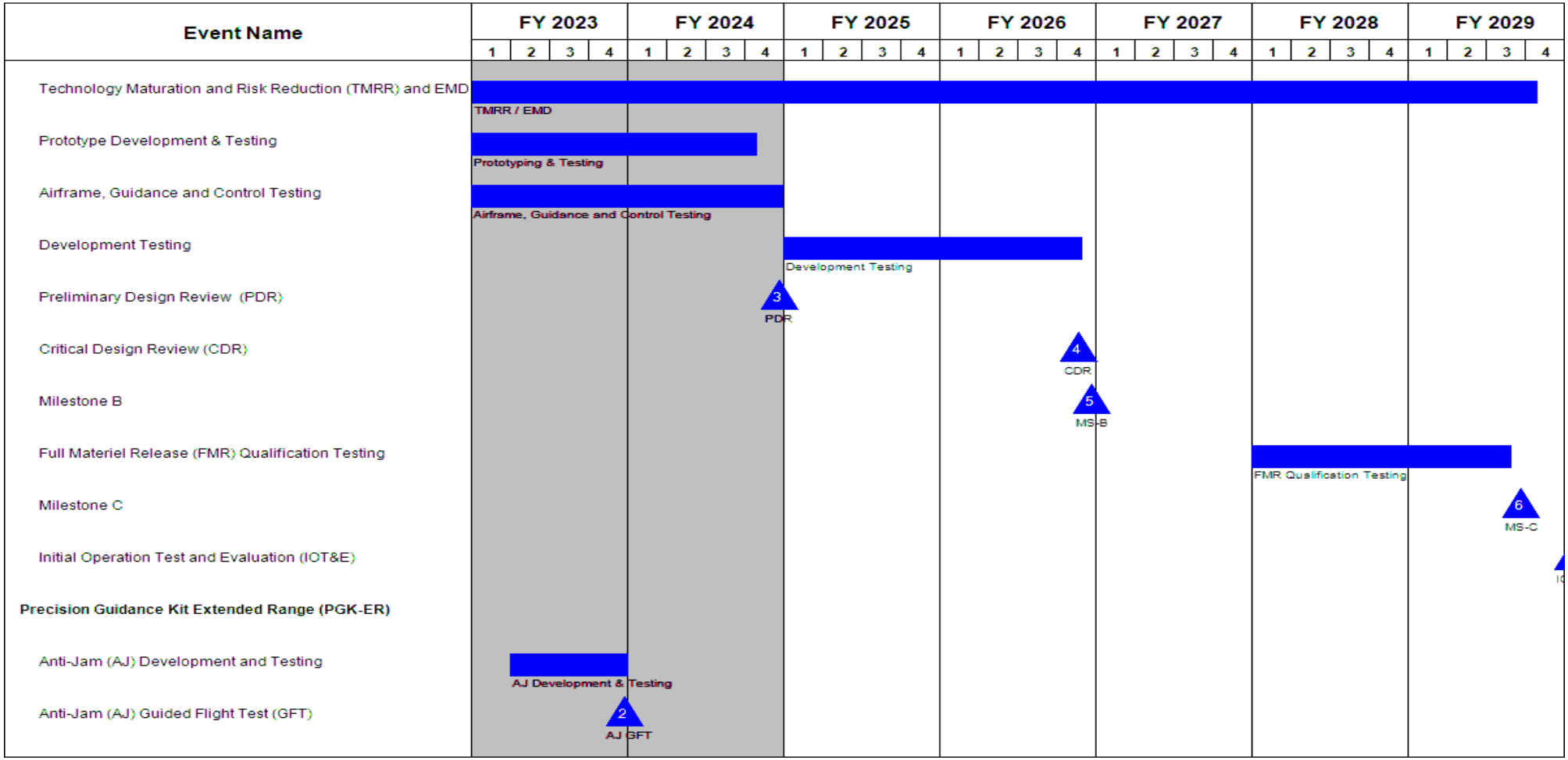


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604802A / *Weapons and Munitions - Eng Dev*	**Project (Number/Name)** S36 / *Precision Guidance Kit*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Long Range Precision Guidance Kit (LR-PGK)	1	2022	1	2022
Technology Maturation and Risk Reduction (TMRR) and EMD	1	2019	4	2029
Prototype Development & Testing	2	2020	4	2024
Airframe, Guidance and Control Testing	3	2021	4	2024
Development Testing	1	2025	4	2026
Preliminary Design Review (PDR)	4	2024	4	2024
Critical Design Review (CDR)	4	2026	4	2026
Milestone B	4	2026	4	2026
Full Materiel Release (FMR) Qualification Testing	1	2028	3	2029
Milestone C	3	2029	3	2029
Initial Operation Test and Evaluation (IOT&E)	1	2030	1	2030
Precision Guidance Kit Extended Range (PGK-ER)	1	2023	1	2023
Anti-Jam (AJ) Development and Testing	1	2023	4	2023
Anti-Jam (AJ) Guided Flight Test (GFT)	4	2023	4	2023

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	74.150	37.420	41.829	-	41.829	20.677	24.415	13.633	9.962	0.000	222.086
194: *Engine Driven Gen Ed*	-	24.475	12.806	11.865	-	11.865	6.995	3.132	3.207	3.239	0.000	65.719
EJ9: *Maneuver Support Vessel (MSV)*	-	9.383	7.827	15.030	-	15.030	-	-	-	-	0.000	32.240
FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*	-	5.000	-	-	-	-	-	-	-	-	0.000	5.000
H02: *Tactical Bridging - Engineering Development*	-	8.217	-	-	-	-	-	6.112	3.757	-	0.000	18.086
L39: *Field Sustainment Support Ed*	-	1.780	4.824	8.884	-	8.884	11.331	9.288	3.066	3.096	0.000	42.269
L41: *Water And Petroleum Distribution - Ed*	-	7.632	7.543	2.618	-	2.618	-	-	-	-	0.000	17.793
L46: *Maintenance Support Equipment*	-	0.937	1.306	-	-	-	-	3.507	1.202	1.202	0.000	8.154
L47: *Improved Environmental Control Units Ed*	-	1.473	1.102	1.171	-	1.171	1.171	1.183	1.196	1.208	0.000	8.504
VR7: *Combat Service Support Systems*	-	15.253	2.012	2.261	-	2.261	1.180	1.193	1.205	1.217	0.000	24.321

A. Mission Description and Budget Item Justification

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

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604804A *I Logistics and Engineer Equipment - Eng Dev*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	75.669	37.420	21.475	-	21.475
Current President's Budget	74.150	37.420	41.829	-	41.829
Total Adjustments	-1.519	0.000	20.354	-	20.354
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.001	-			
• SBIR/STTR Transfer	-1.520	-			
• Adjustments to Budget Years	-	-	20.354	-	20.354

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 194: *Engine Driven Gen Ed*		
Congressional Add: *Lightweight Portable Power*	10.000	-
Congressional Add Subtotals for Project: 194	10.000	-
Project: FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*		
Congressional Add: *Mobile Camouflage Systems (MCS)*	5.000	-
Congressional Add Subtotals for Project: FG4	5.000	-
Project: VR7: *Combat Service Support Systems*		
Congressional Add: *ASF-RWS P3 Expandable- Panelized and Collapsible Shelter (E-PACS)*	12.000	-
Congressional Add Subtotals for Project: VR7	12.000	-
Congressional Add Totals for all Projects	27.000	-

Change Summary Explanation

Increase in FY25 supports the requirements development process for Maneuver Support Vessel Heavy (MSV(H)) for analysis and concept design to address approved requirements as well as the start of the JPADS V4 EMD effort.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) 194 / *Engine Driven Gen Ed*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
194: *Engine Driven Gen Ed*	-	24.475	12.806	11.865	-	11.865	6.995	3.132	3.207	3.239	0.000	65.719
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler for multiple Army Modernization Priorities by providing adaptable and efficient electrical power sources for network modernization, lethality, long range precision fires, and, air & missile defense. The main efforts are integrating standardized power solutions supporting specific programs and modernizations within the CPI2 command post, Soldier power battery charging, and precision fires and air & missile defense systems.

This project supports the Tactical Electric Power (TEP) programs (2kW-800kW Generators and Associated Equip) which is established to develop a modernized, standard family of Mobile Electric Power (MEP) systems to include MEP Generating Sources (MEPGS), MEP Distribution Systems (MEPDS), MEP Storage Systems (MEPSS) and MEP Management Systems (MEPMS) for all Services throughout the Department of Defense IAW DoDI 4120.11. Building on the device/component evaluations conducted in PE 0603804A project G11, this project supports the system development and demonstration of a series of innovative mobile electric power systems that are essential to the development and eventual fielding of modernized MEPGS, MEPMS, MEPSS and MEPDS. This project also supports Army modernization priorities, specifically Combat Support/Combat Service Support (CS/CSS) demands in Network / Command, Control, Communications & Intelligence (C3I), Soldier Lethality, Air & Missile Defense and Long Range Precision Fires, field hospital power, and reduces sustainment requirements.

Power Distribution Illumination Systems Electrical (PDISE) provides reliable, modular designed power distribution equipment that is critical to deploying power networks. PDISE Expansion will add power distribution greater than 60kW and a universal controller that can connect multiple power sources. The Prime Power Distribution Systems (PPDS) effort will fulfill prime power (medium voltage, 4160 Volts Alternating Current (VAC)) distribution shortfalls to support 249th Engineer Battalion (Prime Power) and Force Provider Expeditionary (FPE) requirements. PPDS will provide modernized power distribution capabilities for the U.S. Army Deployable Power Generation and Distribution System (DPGDS), the FPE Prime Power Connection Kit (PPCK), and the U.S. Air Force Basic Expeditionary Airfield Resources (BEAR) power systems. The PPDS will incorporate advanced capabilities and include three primary components: an improved Primary Switching Center (iPSC), secondly, an improved Secondary Distribution Center (iSDC), and last, a Tactical Prime Power Transformer (TPPT). The Universal Power Gateway (comprised of a Universal Power Electronic Secondary Controller and advanced energy storage) will enable a seamless alternating current/direct current (AC/DC) power grid to connect multiple sources (generator, energy storage, vehicle power, renewable), giving the warfighter maximum operational flexibility, greater operational reliability, and reduced logistics footprint.

STEP is a modernization program for existing legacy small power generation systems, that will provide expeditionary, durable and reliable tactical electric power capabilities less than 5kW, to support operations in the austere environments of today's battlefield. The STEP program is a critical enabler to the Army modernization priorities under Army Futures Command Soldier Lethality Cross Functional Team (CFT) and Network CFT. It will provide battery charging power sources for Soldier borne sensors, lasers and optics.

The Hybrid AMMPS Power Source (HAPS), renamed from Integrated Fire Control Network (IFCN) in FY 2024, activities include the development and integration a 10kW bi-directional power converter to include the integration of 6T format Lithium Ion (Li-Ion) batteries on a IFCN platform system.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

The U.S Army field hospital configurations require a modernized power generator and distribution system to support medical operations in large scale ground combat operations (LSGCO). Based on the Army's modernized field hospital and recently fielded next generation computed tomography (CT) systems, the current Modified Table of Organization and Equipment (MTOE) authorization of 100kw Tactical Quiet Generators (TQGs) are insufficient to meet the operational power demands for the 148-bed configuration.

FY 2025 funds will support prototyping and engineering, manufacturing and development efforts for the STEP 3kW and PDISE Expansion power distribution solution.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Power Distribution Illumination Systems Electrical (PDISE) expansion	2.500	0.127	2.000
Description: Prepare PDISE Expansion - Prime effort by awarding the Prime Power Distribution Systems (PPDS) contract, developing first article build/test (FAT) components and start developmental testing inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC), and Tactical Prime Power Transformer (TPPT). The PPDS enables distribution of power from prime power sources which use medium voltages or higher. The system will transform medium or higher voltages down to standard 120/208 V, 3-phase power. Elements of the PPDS will enhance the existing PSC and SDC by incorporating advanced capabilities to accept either 4160 Volts Alternating Current (VAC) primary input power from a USA Deployable Power Generation and Distribution System (DPGDS) or a USAF Basic Expeditionary Airfield Resources (BEAR) power source or 13.8kVAC from contracted and commercial power sources or host nation/existing distribution systems. Prime Power Connection Kit (PPCK) effort renamed to Prime Power Distribution Systems (PPDS) in FY24.			
FY 2024 Plans: PPCK First Article Test build.			
FY 2025 Plans: Prime effort would be continuing the Prime Power Distribution Systems (PPDS), developing first article build/test (FAT) components and start developmental testing inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC), and Tactical Prime Power Transformer (TPPT).			
FY 2024 to FY 2025 Increase/Decrease Statement: The increase in FY2025 is to accomplish PPDS First Article Test at Aberdeen Test Center (ATC).			
Title: Field Hospital Microgrid Systems	-	0.500	-
Description: The effort will develop and integrate a 120kw microgrid power system onto a 5-ton trailer platform. This modernization effort will provide the necessary power requirements to meet all the medical healthcare operations of the newly modernized 148-bed field hospital.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY24 funds will support the platform engineering design and integration effort, engineering and logistics documentation, developmental testing activities, transportability testing, safety assessment, and operational assessment. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Reduction accounts for the efforts (e.g. documentation, testing) supporting the medical Microgrid System will be completed in FY 2024.			
Title: STEP ***Description:*** The Small Tactical Electrical Power (STEP) is a modernization program for existing legacy 2kW and 3kW systems, that will provide small tactical electric power capabilities less than 5-Kilowatts (<5kW), and is durable and reliable, in order to operate in the austere environments of today's battlefield. The STEP program will consist of two major lines of effort providing three distinct power generating and power storage capabilities. These systems will be approached along lines of effort that associate with each system; STEP Lightweight (STEP-LW) and STEP 3kW will provide power generation and the STEP Hybrid Augmentation Systems (STEP HAS) will be an add-on for both systems that will provide energy storage. The STEP program is a critical enabler to the Army modernization priorities under Army Futures Command Soldier Lethality Cross Function Team (CFT) and Network CFT. It will be power sources for Soldier borne sensors, lasers and optics. ***FY 2024 Plans:*** FY24 funds will support the continuation of the STEP 3kW. ***FY 2025 Plans:*** FY25 funds support the continuation of the STEP 3kW development contract. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease in funds due to prototype design completion and build initiation in FY24.	10.939	11.100	9.865
Title: IFCN Effort ***Description:*** The effort will develop and integrate an advanced hybrid power solution for the AMMPS generators to initially support operation of the Integrated Fire Control Network (IFCN) Relay. Primary effort will include development and integration of a 10kW bi-directional power converter, integration of 6T format Lithium Ion (Li-Ion) batteries and development of a hybrid power architecture design that will provide IFCN a full range of AC and DC power. The bi-directional power converter will supply AC and DC power, provide AC transfer switch functions and charge Li-Ion batteries. IFCN effort renamed to Hybrid AMMPS Power Source (HAPS) in FY24. ***FY 2024 Plans:***	1.036	1.079	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY24 funds will continue to support prototype development and complete testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** This RDTE effort will be complete in FY 2024.			
Accomplishments/Planned Programs Subtotals	14.475	12.806	11.865

	FY 2023	FY 2024
Congressional Add: Lightweight Portable Power	10.000	-
FY 2023 Accomplishments: FY23 Congressional funds to be executed on the prototyping and test and evaluation of lightweight, portable power systems.		
Congressional Adds Subtotals	10.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• G11: *Adv Elec Energy Con Ad*	15.000	-	0.000	-	0.000	-	-	-	-	0.000	15.000
• MA9800: *Generators And Associated Equip*	112.689	78.364	81.540	-	81.540	83.041	96.266	95.808	96.091	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Small Tactical Electric Power (STEP) program is a modernization program that will provide a family of systems of improved mobile Tactical Electric Power (TEP) sources and will replace the legacy 2kilowatt (kW) Military Tactical Generator (MTG) and the 3kW Tactical Quiet Generator (TQG). STEP models will be lightweight, modular, reliable, and more logistically supportable power sources than their predecessors for the Department of Defense's (DoD) 21st Century digitized forces.

The acquisition for STEP will incorporate Joint service requirements to reduce cost, maximize interoperability and increase performance over existing generator systems. STEP will implement separate lines of effort. Due to the recent change to requirements based on the Feb 23 approval of the STEP Capability Development Document (CDD), phasing of the lines of effort have changed. The STEP 3kW entered development in 2QFY23. The STEP LW prototype testing in FY22 determined that the current solution was not viable for long-term sustainment. However, opportunities for engineering, manufacturing, and development exist and the STEP LW may enter the acquisition lifecycle at MS B in 1QFY27. STEP Hybrid Augmentation Systems (STEP HAS) will begin development in 1QFY28.

PDISE is a family of power distribution and illumination equipment that transmits electrical power from mobile generation equipment to the end users in a field environment. Power Distribution Illumination Systems Electrical (PDISE) provides the linkage between the generators and the Network/C3I, Air & Missile Defense,

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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Long Range Precision Fires, Command Post and Combat Support/Combat Service Support systems, Command Post Integrated Infrastructure (CPI2) and Towable Expeditionary Shelter System (TESS), and AMMPS Microgrid MG-5206 120kW for Army Field Hospitals. PDISE Expansion - Prime is the Prime Power Distribution Systems (PPDS) inclusive of the Improved Primary Switching Center (iPSC), Improved Secondary Distribution Center (iSDC), and Tactical Prime Power Transformer (TPPT). The contracting strategy is a 10-year Firm-Fixed Price (FFP) contract in 3QFY24 that will include a 24-month first article build/test phase and 96-month production options. PPDS will develop a materiel solution to support Army Prime Power for the 249th Engineer Battalion (Prime Power) as well as Force Provider Expeditionary Prime Power Connection Kit (PPCK). contingency-base operations. The contract includes the research, design, manufacturing, and delivery of first articles to support testing scheduled in 3QFY25. First article testing will be completed no later than 2QYF26 with follow-on operational assessment starting in 2QFY26.

The acquisition strategy for the Hybrid AMMPS Power Source (HAPS) includes a 22-month Other Transaction Authority (OTA), Firmed-Fixed Price (FFP) developmental contract that will develop a prototype bi-directional power converter and prototype Li-Ion six terminal (6T) format battery module that will support a wide application of requirements. The objective of this effort is to develop and conduct testing activities on a prototype power converter that will accept alternating current (AC) input power from the Advanced Medium Mobile Power Source (AMMPS) 10 kilowatt (kW), 5kW and other Department of Defense (DoD) generator sets and direct current (DC) input from sources that include but are not limited to DoD batteries, NATO slave ports, and other commonly used DoD 28 Volt Direct Current (VDC) power sources.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PDISE Expansion (PPDS)	Various	PM E2S2 : Ft. Belvoir	1.275	-		-		0.350	Jan 2025	-		0.350	Continuing	Continuing	Continuing
STEP	MIPR	DEVCOM RTI : PM E2S2 Ft. Belvior	3.204	1.960	Jan 2023	0.656	Jan 2024	0.860	Jan 2025	-		0.860	0.000	6.680	-
HAPS (AMMPS)	C/FFP	PM E2S2 Ft. Belvoir : PM E2S2 Ft. Belvoir	-	0.168	Apr 2023	-		-		-		-	0.000	0.168	-
		Subtotal	4.479	2.128		0.656		1.210		-		1.210	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
STEP	C/FFP	Prototyping and engineering, manufacturing and development efforts : HDT Global, AL; MLS, CA; and P2MS, MO	5.600	8.133	Jun 2023	10.092	Mar 2024	2.800	Jan 2025	-		2.800	0.000	26.625	-
PDISE Expansion (PPDS)	TBD	Prototyping and engineering, manufacturing and development efforts : TBD	-	0.042	Dec 2023	0.127	Apr 2024	0.350	Feb 2025	-		0.350	0.000	0.519	-
Field Hospital Microgrid Integration	MIPR	DEVCOM RTI : Ft. Belvoir	-	-		0.500	Jun 2024	-		-		-	0.000	0.500	-
Lightweight Portable Power	TBD	Enginuity Power Systems (MI, VA) : West Virginia University (WV)	-	10.000	Jul 2023	-		-		-		-	0.000	10.000	-
HAPS (AMMPS)	C/FFP	PM E2S2 Ft. Belvoir : PM E2S2 Ft. Belvoir	-	0.775	Apr 2023	-		-		-		-	0.000	0.775	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) 194 / *Engine Driven Gen Ed*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	5.600	18.950		10.719		3.150		-		3.150	0.000	38.419	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HAPS (AMMPS)	C/FFP	PM E2S2 Ft. Belvoir : PM E2S2 Ft. Belvoir	0.686	0.112	Jun 2023	1.079	Oct 2023	-		-		-	0.000	1.877	-
STEP	C/FFP	Various : PM E2S2 Ft. Belvoir	0.706	-		0.210	Jan 2024	0.500	Jan 2025	-		0.500	0.000	1.416	-
PDISE Expansion	Various	PM E2S2 : Ft. Belvoir	-	-		-		0.300	Jan 2025	-		0.300	0.000	0.300	-
		Subtotal	1.392	0.112		1.289		0.800		-		0.800	0.000	3.593	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
STEP	MIPR	ATC : Aberdeen, MD	-	0.855	Jul 2023	0.142	Jan 2024	5.705	Jan 2025	-		5.705	0.000	6.702	-
HAPS (AMMPS)	C/FFP	ATC : Aberdeen, MD	-	2.430	Aug 2023	-		-		-		-	0.000	2.430	-
PDISE Expansion (PPDS)	TBD	ATC : ATC	-	-		-		1.000	Apr 2025	-		1.000	0.000	1.000	-
		Subtotal	-	3.285		0.142		6.705		-		6.705	0.000	10.132	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.471	24.475		12.806		11.865		-		11.865	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

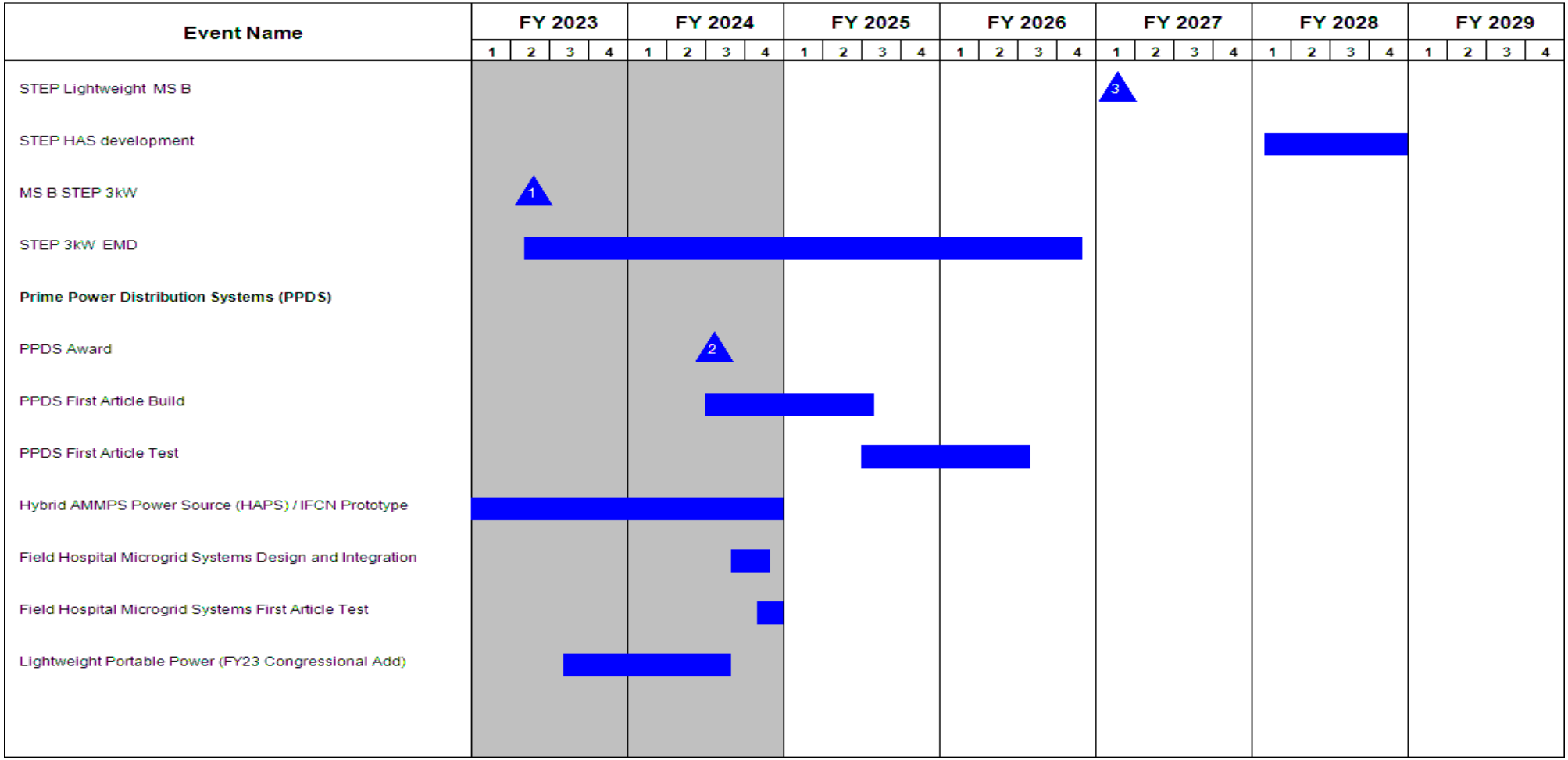

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** 194 / *Engine Driven Gen Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
STEP Lightweight MS B	1	2027	1	2027
STEP HAS development	1	2028	4	2028
MS B STEP 3kW	2	2023	2	2023
STEP 3kW EMD	2	2023	4	2026
Prime Power Distribution Systems (PPDS)	3	2021	4	2029
PPDS Award	3	2024	3	2024
PPDS First Article Build	3	2024	3	2025
PPDS First Article Test	3	2025	3	2026
Hybrid AMMPS Power Source (HAPS) / IFCN Prototype	2	2021	4	2024
Field Hospital Microgrid Systems Design and Integration	3	2024	4	2024
Field Hospital Microgrid Systems First Article Test	4	2024	4	2024
Lightweight Portable Power (FY23 Congressional Add)	3	2023	3	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) EJ9 / *Maneuver Support Vessel (MSV)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EJ9: *Maneuver Support Vessel (MSV)*	-	9.383	7.827	15.030	-	15.030	-	-	-	-	0.000	32.240
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project line supports the family of Maneuver Support Vessels (MSV) which enable Dynamic Force Repositioning (DFR) by providing the Combatant, Multi-Domain Operations (MDO) and Joint All Domain Operations (JADO) Commanders with the ability to access multiple entry points via littorals and inland waterways (waterborne corridor) IOT sustain forces within an anti-access/area denial (A2/AD) bubble. The family of MSV include the Maneuver Support Vessel (Light), Maneuver Support Vessel (Heavy), and other systems and enablers which support INDOPACOM operational plans and Army Title 10 requirements to prepare for land combat and provide watercraft support in a theater of operations in support of Geographic Combatant Commands (GCC). MSV connectors will provide Surge, Precision and Dispersed Logistics to move and maneuver tailored forces, combat ready troops, platforms, equipment, and supply bulk fuel and water across the full spectrum of operations. MSV connectors mitigate A2/AD threats by providing access to shallow coastal waters, rivers, in narrow inland waterways in support of dispersed force elements in austere environments and where mature ports or road networks are unavailable.

The MSV(L) provides upgraded capabilities such as higher operational speed, reduced draft and increased payload to support expeditionary movement and maneuver of tailored forces and combat power to mitigate the Anti-Access/Area Denial (A2/AD) operational environment. Capable of delivering a combat configured Abrams, Stryker or Bradley Fighting Vehicles along with critical sustainment missions including delivery of food, water, fuel, and ammunition. MSV(L) is the first new development program which will displace the Army's aging Landing Craft Mechanized-8 (LCM-8) class of vessels. The LCM-8 does not have the speed, functional draft (shallow water capability), interoperability, or maneuver capability to move today's Army Maneuver Platforms.

The MSV(L) prototype will undergo contractor and government testing in FY23-25. Following prototype testing the prototype vessel may be used as a test bench for future modifications and or a training asset.

The MSV(H) represents a new development of maritime transport, adding new capabilities to meet the joint formation's future operational and tactical movement and maneuver requirements. MSV(H) is in line with future joint and Army Operational Concepts stating that Army forces must conduct expeditionary movement over strategic distances and transition rapidly to cross-domain maneuver of sufficient scale and duration to accomplish operational objectives. This heavy lift capability enables intra-theater movement and maneuver of combat loaded, ready-to-fight forces (personnel, equipment, and supplies) in support of CCMDs. MSV(H) is interoperable with future joint sea basing concepts and designed with the right range, speed, and cargo capacity to employ combat power to multiple dispersed locations and project sustainment from intermediate staging bases or the sea base. The strategically dispersed and forward deployed MSV(H) fleet enables rapid and responsive theater employment of combat loaded, ready-to-fight forces (personnel, equipment, and accompanying supplies) in support of CCMDs, employ them at the point of need, provide tactical maneuver support during operations, and sustain them over the duration of operations. MSV(H) capabilities are a critical enabler in combatting A2/AD environment threats made more difficult by operating in the littoral operating space physically defined by natural choke points along rivers, in shallows, jutting peninsulas, offshore islands, bays, estuaries, coastlines and vessel-congested shipping areas.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

The family of MSV will also include interim capabilities and enablers to facilitate the range of pulsed operations in the littorals. FY25 RDTE dollars in the amount of $15.030 million support the family of Maneuver Support Vessels requirements development process and MSV(L) testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Program Management / Systems Engineering	0.695	0.723	1.800
Description: PM/Matrix Support includes PM and systems engineering oversight required to manage the program and provide contractor oversight. ***FY 2024 Plans:*** Funds matrix support, travel, and general oversight efforts. ***FY 2025 Plans:*** Funds matrix support, travel, and general oversight efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY 2025 increase is due to additional support needed for studies to inform requirements development of the MSV(H) Program			
Title: Maneuver Support Vessel Affordability and Feasibility Studies	1.688	1.457	2.730
Description: Conduct Affordability and Feasibility Studies for future watercraft modernization. ***FY 2024 Plans:*** Conduct analysis development to complete affordability and feasibility studies. ***FY 2025 Plans:*** Increase in affordability and feasibility studies. ie Signatures Knowledge Studies ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 increase to provide for additional feasibility and affordability studies for family of MSV			
Title: MSV(H) Requirements Development	-	5.647	5.500
Description: Collaborative effort with Industry and Government analyzing trade space to inform A-CDD desired characteristics ***FY 2024 Plans:*** Funding supports MSV(H) requirements development process with analysis of A-CDD desired characteristics. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding to support additional family of MSV requirements development process with analysis of A-CDD desired characteristics and accompanying tradeoff analysis. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 decrease to support additional family of MSV requirements development process with analysis of A-CDD desired characteristics and accompanying tradeoff analysis to reduce development risk.			
Title: MSV(L) EMD Closeout ***Description:*** MSV(L) Request for Equitable Adjustments	7.000	-	-
Title: MSV Testing ***Description:*** Testing for family of Maneuver Support Vessels (MSV). ***FY 2025 Plans:*** Funds testing of MSV(L) prototype vessel. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2025 increase to support testing of MSV(L) prototype vessel.	-	-	5.000
Accomplishments/Planned Programs Subtotals	9.383	7.827	15.030

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• R03050: *Maneuver Support Vessel (Light) (MSV-L)*	97.676	149.449	66.634	-	66.634	68.438	69.156	74.958	75.309	0.000	601.620

Remarks

Significant Accomplishments:
-MSV(L) Prototype Launch and Extended Acceptance Trials
-MSV(L) Milestone C Documentation generated and submitted into staffing.
-MSV(H) A-CDD AROC Approval

D. Acquisition Strategy

The single, full- scale MSV(L) prototype will undergo contractor and government testing in FY23 through FY25. Following prototype testing the prototype vessel may be used as a test bench for future modifications and or a training asset.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

Family of MSV: Affordability and Feasibility studies will be performed to inform acquisition strategies and requirements. Competitive design efforts will result in digital prototypes which will further inform acquisition strategies and requirements. Family of MSV acquisition strategies maximize competition at every phase of design, prototyping, and test to yield the most affordable and achievable position for the Army in the program's production phase.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) EJ9 / *Maneuver Support Vessel (MSV)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Trade Studies and Business Analysis	TBD	Various : Various	0.717	1.688	May 2023	1.457	Nov 2023	2.730	Nov 2024	-		2.730	Continuing	Continuing	-
MSV Requirements Development	TBD	TBD : TBD	-	-		5.647	Feb 2024	5.500	Feb 2025	-		5.500	0.000	11.147	-
MSV(L) EMD Closeout	SS/ FPEPA	Vigor LLC : Portland Oregon	80.977	7.000	Mar 2023	-		-		-		-	0.000	87.977	-
		Subtotal	81.694	8.688		7.104		8.230		-		8.230	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Salaries for Matrix Personnel Army Watercraft, GVSC, ILSC PSID and ACC-Wrn.	MIPR	Detroit Arsenal : Warren, MI 48397-5000	21.720	0.695	Jan 2023	0.723	Dec 2023	1.800	Dec 2024	-		1.800	0.000	24.938	-
		Subtotal	21.720	0.695		0.723		1.800		-		1.800	0.000	24.938	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MSV Testing Requirements	MIPR	Various : Various	-	-		-		5.000	Nov 2024	-		5.000	0.000	5.000	-
		Subtotal	-	-		-		5.000		-		5.000	0.000	5.000	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	103.414	9.383		7.827		15.030		-		15.030	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

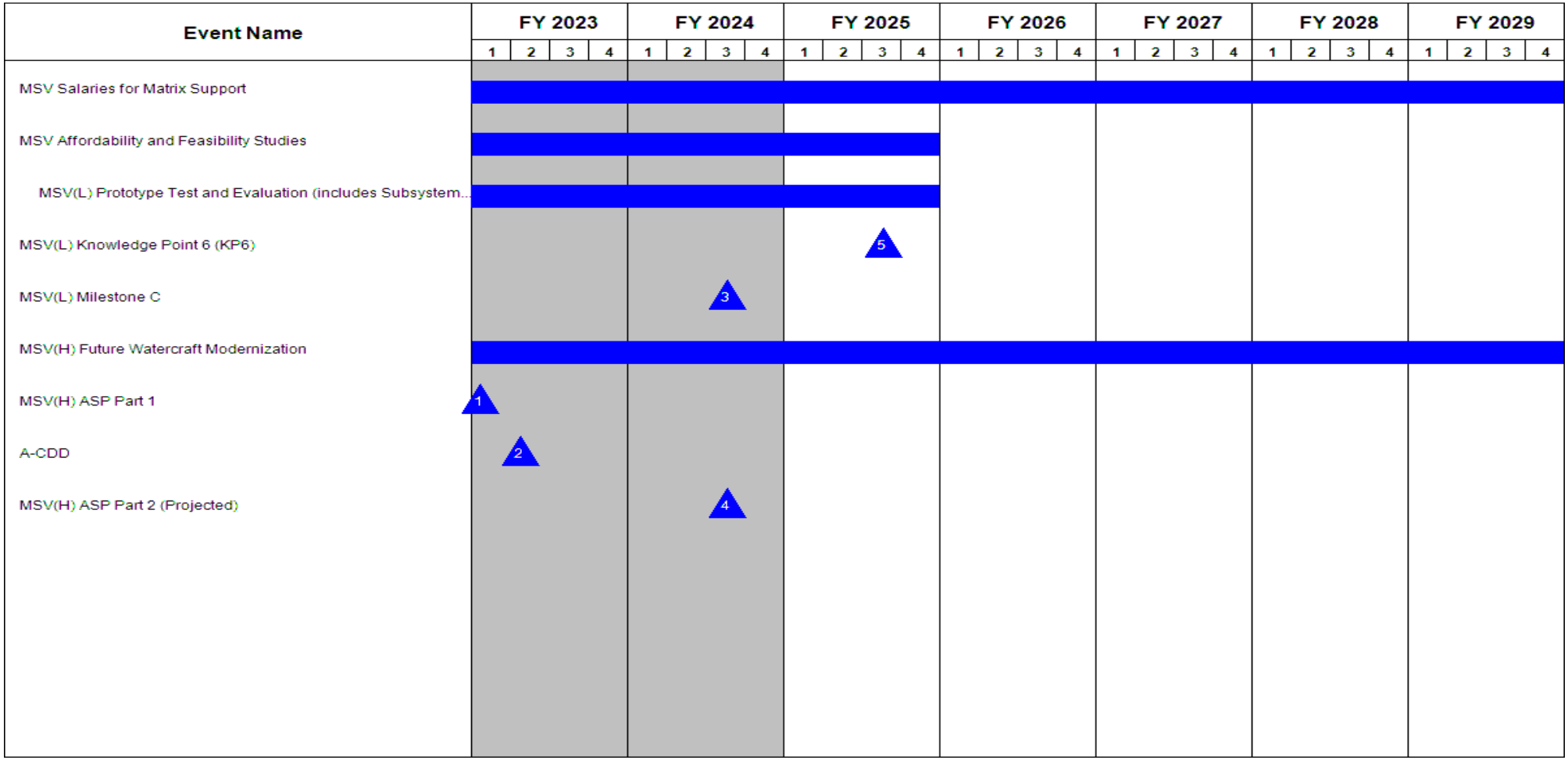

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** EJ9 / *Maneuver Support Vessel (MSV)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MSV Salaries for Matrix Support	4	2016	4	2029
MSV(L) Contractor System Integration Laboratory (CSIL)	4	2018	2	2022
MSV Affordability and Feasibility Studies	1	2022	4	2025
MSV(L) Prototype Build	4	2019	4	2022
MSV(L) Prototype Test and Evaluation (includes Subsystem tests)	4	2019	4	2025
MSV(L) Knowledge Point 6 (KP6)	3	2025	3	2025
MSV(L) Milestone C	3	2024	3	2024
MSV(H) Future Watercraft Modernization	1	2022	4	2029
MSV(H) ASP Part 1	1	2023	1	2023
A-CDD	2	2023	2	2023
MSV(H) ASP Part 2 (Projected)	3	2024	3	2024

Note

Family of Maneuver Support Vessels includes multiple vessels and enablers which support Army Watercraft Modernization efforts and increase capability of Army Watercraft fleet. FY2025 funds will support MSV(L) testing and development of Family of Maneuver Support Vessels.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
FG4: *Ultra-Lightweight Camouflage Net System (ULCANS)*	-	5.000	-	-	-	-	-	-	-	-	0.000	5.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

ULCANS provides increased survivability against multi-spectral visual, infrared and radar threats, thermal signature suppression and significant thermal/solar reduction capability. ULCANS is capable of use in all types of weather and climatic conditions except in heavy snow and winds. ULCANS variants are integrated systems that are very lightweight, easily deployable, versatile, user friendly and tailored to the equipment meeting the requirements of operations for combat systems, command and control equipment, logistic support sites, tactical facilities, and fixed facilities. RDT&E funding for ULCANS Increment I program supports formal development for necessary technology/signature enhancements of three ULCANS Increment I variants (Woodland, Arctic, Desert/Urban) to replace current legacy ULCANS variants (Woodland and Desert).

Mobile Camouflage System (MCS) provides Full Spectrum Signature Management for Vehicles from ground, aerial, and satellite. MCS enables combat vehicle protection and survivability against current peer and near-peer threats; defeats enemy targeting and surveillance systems through multi-spectral concealment (UV, VIS, NIR, SWIR, Thermal, Radar); enables multi-domain operations in A2/AD environment and provides operational units layered protection and concealment against long-range precision fires, drones, ground, aerial, and satellite threats.

Funding supports modernization of current camouflage net systems by investigating technology insertions that decrease Soldier and ground combat vehicle detection from threat sensors. Funding also supports developing initial prototypes to enable refinement of operational requirements and early user feedback to maintain overmatch signature reduction against future threat sensors from peer competitors.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024
Congressional Add: Mobile Camouflage Systems (MCS)	5.000	-
FY 2023 Accomplishments: FY23 Congressional adds for MCS will be utilized for the research and development of multiple full-scale prototypes for operational platforms. Funding will be utilized for an MCS Development for Bradley Fighting Vehicle. MCS prototypes will be developed for Command Post platforms and tested in operation environments. Multiple test events are scheduled for prototype systems in FY23. Progression of the program and the data collected from R&D and test efforts will be utilized to ensure MCS will move through the entry gate process to become a requirement.		
Congressional Adds Subtotals	5.000	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The acquisition strategy for ULCANS is to accelerate product development and testing to transition into production. ULCANS Snow/Alpine variant was the last remaining variant to achieve FRP/TC-STD and FMR. The FRP/TC-STD/FMR milestone was completed in September 2023, and systems are available for unit procurement. MCS CDD entry gate is scheduled for 2QFY24 and will move through the entry gate and AROC process to become a validated requirement in FY24-25.

PMFSS will coordinate with other PMs to work MCS integration and address their platform's KPP's/KSA's for signature management. PMFSS will continue to develop mature MCS solutions for platform integration. PMFSS has MOU and support agreements with multiple PMs, and MCS endorsement from ELRV, SOCOM FOSOV, ERCA, LRPF, Mission Command Battle Lab, NGCV CFT, and direct alignment to Network CFT LOE 4. PMFSS will continue the efforts to finalize MCS as a formal requirement and a program of record.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCS	TBD	Various : PM FSS : Natick, MA	-	1.118	Oct 2023	-		-		-		-	0.000	1.118	-
		Subtotal	-	1.118		-		-		-		-	0.000	1.118	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCS	TBD	Various : Various	-	1.803	Jul 2023	-		-		-		-	0.000	1.803	-
		Subtotal	-	1.803		-		-		-		-	0.000	1.803	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCS	TBD	Various : Various	-	0.858	Aug 2023	-		-		-		-	0.000	0.858	-
		Subtotal	-	0.858		-		-		-		-	0.000	0.858	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCS	TBD	Various : Various	-	1.221	May 2023	-		-		-		-	0.000	1.221	-
		Subtotal	-	1.221		-		-		-		-	0.000	1.221	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	5.000		-		-		-		-	0.000	5.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*

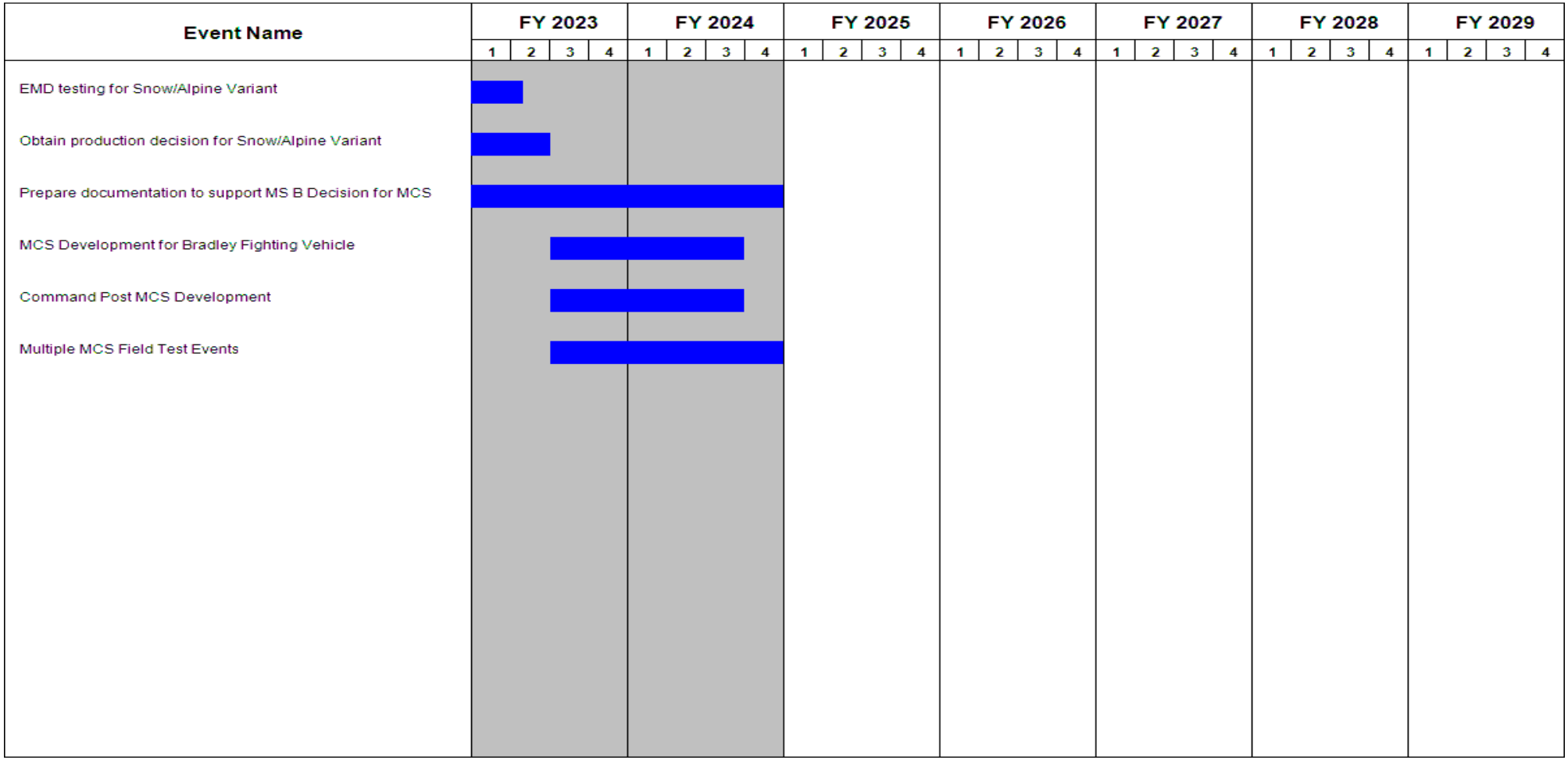

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** FG4 / *Ultra-Lightweight Camouflage Net System (ULCANS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMD testing for Snow/Alpine Variant	3	2020	1	2023
Complete documentation to support production decision for Snow/Alpine Variant	3	2020	4	2022
Obtain production decision for Snow/Alpine Variant	4	2021	2	2023
Prepare documentation to support MS B Decision for MCS	3	2022	4	2024
MCS Development for Bradley Fighting Vehicle	3	2023	3	2024
Command Post MCS Development	3	2023	3	2024
Multiple MCS Field Test Events	3	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
H02: *Tactical Bridging - Engineering Development*	-	8.217	-	-	-	-	-	6.112	3.757	-	0.000	18.086
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

n/a

A. Mission Description and Budget Item Justification

This project supports the engineering, prototyping, testing and manufacturing development of future force bridge systems and support equipment as well as improvements to existing systems within the Bridging Product Management portfolio.

Funding supports developmental and customer testing of the Line of Communication Bridge (LOCB), development, prototyping and testing of the Bridge Supplemental Set (BSS) and Bridge Protection Device (BPD), Bridge Enabler/TRAC Study for the Joint Assault Bridge (JAB), and funds multiple efforts to upgrade and modernize existing systems through the Family of Higher Military Load Classification Bridges (FoHMLC-B) program. Funding also supports the development of new systems and modification of existing systems within the Bridging portfolio to enhance the Army's Engineering capabilities.

H02 / Tactical Bridging - Engineering Development has no budget request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Line of Communication Bridge (LOCB) ***Description:*** Funding requested for development and testing of higher Military Load Classification (MLC) modular Line of Communication Bridging with the mobility to span fixed or float gaps spanning 50 to 800 meters wide. Actions include the purchase of test assets, bridge structural strength analysis, performance assessments, Production Qualification Testing (PQT) and Customer Testing (CT) of the Line of Communication Bridge (LOCB) system.	3.695	-	-
Title: Family of Higher Military Load Classification Bridges (FoHMLC-B) ***Description:*** Funding provided to develop the Family of Higher Military Load Classification Bridges (FoHMLC-B). The FoHMLC-B program will upgrade current bridging systems and develop future bridging systems to support the increased weights of armored combat vehicles crossing Assault Fixed, Assault Float, Tactical Fixed and Tactical Float bridging systems.	4.522	-	-
Accomplishments/Planned Programs Subtotals	8.217	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• G06520: *BRIDGE SUPPLEMENTAL SET*	0.439	4.414	0.000	-	0.000	-	-	-	-	0.000	4.853
• G82404: *LINE OF COMMUNICATION BRIDGE LOCB*	13.785	-	0.000	-	0.000	-	-	-	-	0.000	13.785
• GZ3001: *Joint Assault Bridge*	35.990	159.804	174.779	-	174.779	142.993	168.203	200.946	202.887	0.000	1,085.602
• G84900: *ASSAULT BREACHER VEHICLE (ABV)*	3.852	-	5.681	-	5.681	0.079	3.098	10.223	10.325	0.000	33.258
• M27200: *BRIDGE, FLOAT-RIBBON, PROPULSION*	-	42.559	30.807	-	30.807	-	-	-	-	0.000	73.366

Remarks

D. Acquisition Strategy

The acquisition strategy is for Research, Development, Test & Evaluation efforts to support prototyping, testing and follow-on production efforts for future Bridging systems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering and Program Management	MIPR	Various : Various	4.293	3.295	Feb 2024	-		-		-		-	0.000	7.588	-
		Subtotal	4.293	3.295		-		-		-		-	0.000	7.588	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of High Military Load Class Bridges - HASB MLC120 Prototypes	MIPR	Anniston Army Depot (ANAD) : Anniston, AL	1.443	-		-		-		-		-	0.000	1.443	-
		Subtotal	1.443	-		-		-		-		-	0.000	1.443	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Bridge Test Lab	MIPR	CCDC GVSC - Bridge Test Lab : SANGB, MI	1.043	-		-		-		-		-	0.000	1.043	-
Prototype/EMD Bridge Test Asset Transportation	TBD	TAC Code : TBD	0.266	0.033	Jul 2024	-		-		-		-	0.000	0.299	-
		Subtotal	1.309	0.033		-		-		-		-	0.000	1.342	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Line of Communication Bridge - PQT Transportability Testing	MIPR	Aberdeen Test Center (ATC) :	3.500	2.042	May 2024	-		-		-		-	0.000	5.542	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) H02 / *Tactical Bridging - Engineering Development*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Aberdeen Proving Ground, MD													
Line of Communication Bridge - PQT Durability Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	2.305	1.087	Aug 2023	-		-		-		-	0.000	3.392	-
Line of Communication Bridge - Reliability Spt/ Corrosion Testing	MIPR	CCDC DAC : APG, MD	-	0.120	Jan 2024	-		-		-		-	0.000	0.120	-
Family of High Military Load Class Bridges - IRB Test & Evaluation	MIPR	US Army Corps of Engineers - Engineering Research and Development Center (ERDC) : Vicksburg, MS	1.306	1.340	Nov 2023	-		-		-		-	0.000	2.646	-
JAB - TRAC Study	MIPR	US AFC/TRAC : Fort Leavenworth, KS	-	0.300		-		-		-		-	0.000	0.300	-
		Subtotal	7.111	4.889		-		-		-		-	0.000	12.000	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.156	8.217		-		-		-		-	0.000	22.373	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

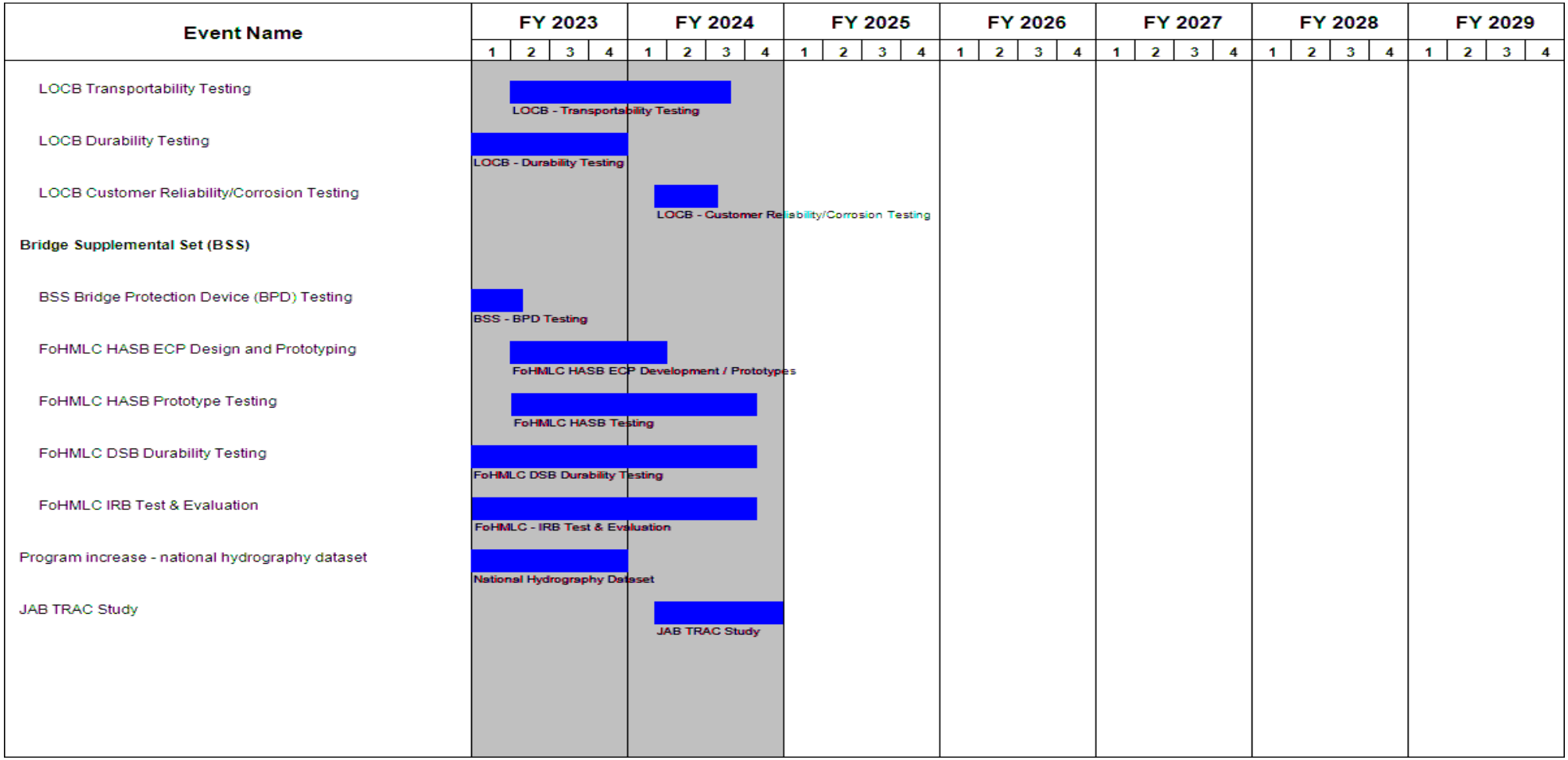

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** H02 / *Tactical Bridging - Engineering Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Program increase - health usage monitoring system	3	2021	4	2022
Automated Bridge Condition Device (ABCD)	3	2021	4	2022
LOCB Transportability Testing	1	2020	3	2024
LOCB Durability Testing	2	2020	4	2023
LOCB Customer Reliability/Corrosion Testing	1	2024	3	2024
Bridge Supplemental Set (BSS)	2	2019	2	2026
BSS Prototyping	3	2020	2	2022
BSS Milestone "C"	3	2021	3	2021
BSS Transportability Testing	1	2022	3	2022
BSS Bridge Protection Device (BPD) Testing	3	2022	1	2023
Family of High Military Load Class - Bridging (FoHMLC-B)	1	2018	2	2022
FoHMLC Abbreviated Capabilities Decision Document	2	2021	2	2021
FoHMLC HASB ECP Design and Prototyping	1	2021	1	2024
FoHMLC HASB Prototype Testing	2	2023	4	2024
FoHMLC DSB Durability Testing	3	2022	4	2024
FoHMLC IRB Test & Evaluation	1	2023	4	2024
Program Support / Scope Development	1	2022	4	2022
Program increase - national hydrography dataset	4	2022	4	2023
JAB TRAC Study	1	2024	4	2024

Note

n/a

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
L39: *Field Sustainment Support Ed*	-	1.780	4.824	8.884	-	8.884	11.331	9.288	3.066	3.096	0.000	42.269
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

Funding supports modernization of current cargo aerial delivery systems by investigating technology insertions that increase accuracy, collision avoidance, in flight communications, and reliability. Funding also supports developing initial prototypes to enable refinement of operational requirements and early user feedback to support future sustainment and operational movement concepts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Rapid Rigging and De-Rigging Airdrop System (RRDAS)	1.780	3.285	3.723
Description: Rapid Rigging and DeRigging Airdrop System (RRDAS) reduces rigging times while also providing the capability to rapidly de-rig loads on the drop zone. This will reduce the lead time to prepare Low Velocity Airdrop Load (LVADS) loads while also increasing the survivability of receiving ground forces by ensuring the airdrop loads (to include weapon systems, prime movers, trailers, etc.) are quickly de-rigged and made operational.			
FY 2024 Plans: Complete operational testing RRDAS-Light. Production and Type Classification Standard decisions for RRDAS-Light (RRDAS-L). MS B for RRDAS Heavy 2Q FY24. Start development of RRDAS-Heavy components.			
FY 2025 Plans: Develop RRDAS Heavy design to reach Critical Design Review. Complete Design Validation Testing and start Developmental Testing. Begin logistics support development for RRDAS Heavy.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY25 increase is to fabricate larger prototypes for RRDAS Heavy development.			
Title: Joint Precision Airdrop System (JPADS) ***Description:*** Joint Precision Air Drop System (JPADS) provides autonomous guidance of payloads dropped from altitudes up to 25,000 feet at increments of 2,000 (2K) and 10,000 (10K) pounds. JPADS allows precise delivery of critical supplies to the Warfighter on the ground while allowing aircraft delivering payloads to fly at significantly safer altitudes. The JPADS 2K V3 Upgrade provides a GPS-denied capability, but the configuration only partially meets the GPS-denied requirement. The next configuration of JPADS must support the full GPS-denied capability, including hardware and software technologies such as night-vision, anti-jam technology, radio-based navigation, low-earth orbit satellites, and M-code. M-code upgrade provides JPADS with the ability to utilize the military's upgrade GPS satellite signals. M-code signal is stronger and harder to jam, which will provide JPADS with a more resilient navigation ability when employed in GPS-denied environments. ***FY 2024 Plans:*** JPADS will start to integrate and test M-code GPS receiver on the JPADS V3 baseline platform. The effort will develop software to read new messages from the receiver and utilize them in navigation. It will also develop a hardware interface kit which mounts to the V3 JPADS and interfaces to the universal communication port. Finally, subsystem and system flight testing will be executed to demonstrate expected performance and reliability. ***FY 2025 Plans:*** Begin EMD phase of JPADS V4 development. Down-select GPS-denied sensors, mature software architecture and finalize hardware interface design. Test early prototype at Position, Navigation, and Timing Assessment Exercise 2025 (PNTAX 25). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The FY25 increase reflects the start of the JPADS V4 EMD effort.	-	1.539	4.000
Title: Sustainment Aerial Delivery Equipment - Sling Load (SADE-SL) ***Description:*** SADE-SL consists of four components (Payload Stabilization, Enhanced Speed Bag, Low-Cost Cargo Net, and Low-Cost Sling Sets) which provide options for the Soldiers to provide distributed supply and sustainment support. The two low-cost components (low-cost slings sets, low-cost cargo nets) reduce the overall cost of sling load equipment and the burden of intra-theatre recovery. The other two components allow for improved flight safety in the form of increased air speed by 10%-20% (Payload Stabilization Device) and decreasing hovering time to 14 seconds from time on target (Enhanced Speed Bags). ***FY 2025 Plans:***	-	-	1.161

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Begin development of the 4 SADE-SL capabilities. This includes getting the vendors under contract and maturing the designs of the Payload Stabilization, Low-Cost Slings, and Low-Cost Cargo Nets, and Enhanced Speed Bag. Additionally, the TMs for these capabilities will be advanced and undergo TM Validation. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase due to initiation of SADE-SL effort in FY 2025.			
Accomplishments/Planned Programs Subtotals	1.780	4.824	8.884

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• MA7806: *Precision Airdrop*	-	6.513	11.096	-	11.096	11.110	11.114	11.131	11.159	0.000	62.123

Remarks

D. Acquisition Strategy

The acquisition strategy for RRDAS is to continue development of the airdrop platform for various lengths and weights, complete developmental and operational testing for lighter payloads and transition to sustainment for production availability for units to requisition. For JPADS the acquisition strategy will be to integrate the M-Code cards into the JPADS avionics module and upgrade the software for cybersecurity, conduct flight testing for JPADS V4 and update drawing package with approved engineering change proposal. For SADE-SL the acquisition strategy is to further develop the design of the four capabilities (Payload Stabilization, Enhanced Speed Bag, Low-Cost Cargo Net, and Low-Cost Sling Sets) and then transitioning into developmental testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	Various	PM FSS : Natick, MA	6.911	0.087	Apr 2023	0.723	Dec 2023	2.000	Dec 2024	-		2.000	0.000	9.721	Continuing
		Subtotal	6.911	0.087		0.723		2.000		-		2.000	0.000	9.721	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPADS	Various	Various : Various	3.055	-		0.821	Oct 2023	2.200	Oct 2024	-		2.200	0.000	6.076	-
RRDAS	Various	Various : Various	2.951	0.693	Apr 2023	1.280	Nov 2023	1.700	Nov 2024	-		1.700	0.000	6.624	-
SADE-SL	TBD	Various : Various	-	-		-		0.554	Dec 2024	-		0.554	0.000	0.554	-
		Subtotal	6.006	0.693		2.101		4.454		-		4.454	0.000	13.254	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPADS	Various	Various : Various	0.256	-		0.100	Dec 2023	0.200	Dec 2024	-		0.200	0.000	0.556	-
RRDAS	Various	Various : Various	-	0.050		0.120	Dec 2023	0.173	Dec 2024	-		0.173	0.000	0.343	-
SADE-SL	TBD	Various : Various	-	-		-		0.107	Dec 2024	-		0.107	0.000	0.107	-
		Subtotal	0.256	0.050		0.220		0.480		-		0.480	0.000	1.006	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JPADS	Various	Various : Various	2.174	-		0.500	Jan 2024	1.000	Apr 2025	-		1.000	0.000	3.674	-
RRDAS	Various	Various : Various	2.718	0.950	Aug 2023	1.280	Mar 2024	0.950	Dec 2024	-		0.950	0.000	5.898	-
		Subtotal	4.892	0.950		1.780		1.950		-		1.950	0.000	9.572	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L39 / *Field Sustainment Support Ed*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.065	1.780		4.824		8.884		-		8.884	0.000	33.553	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

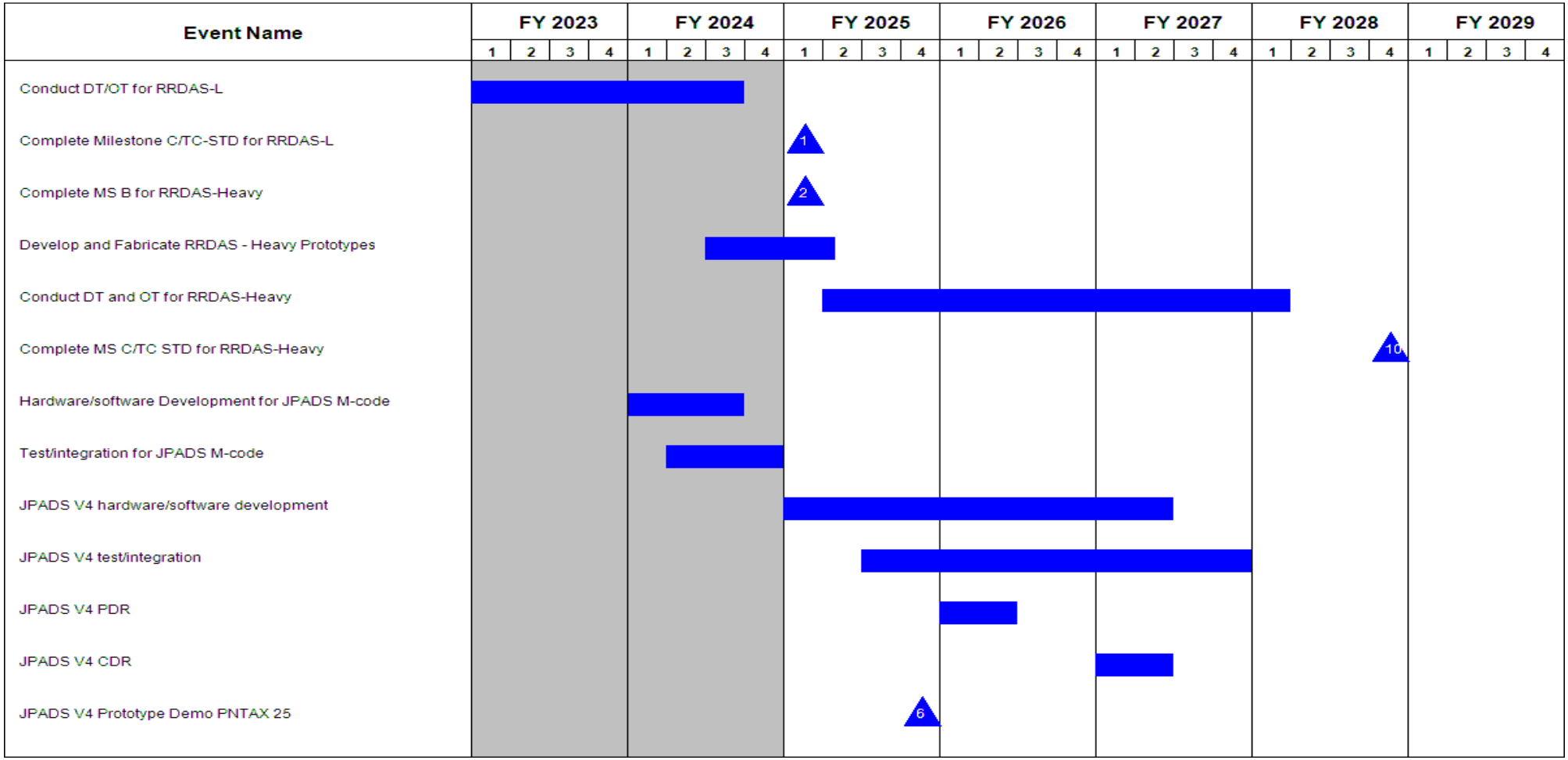

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

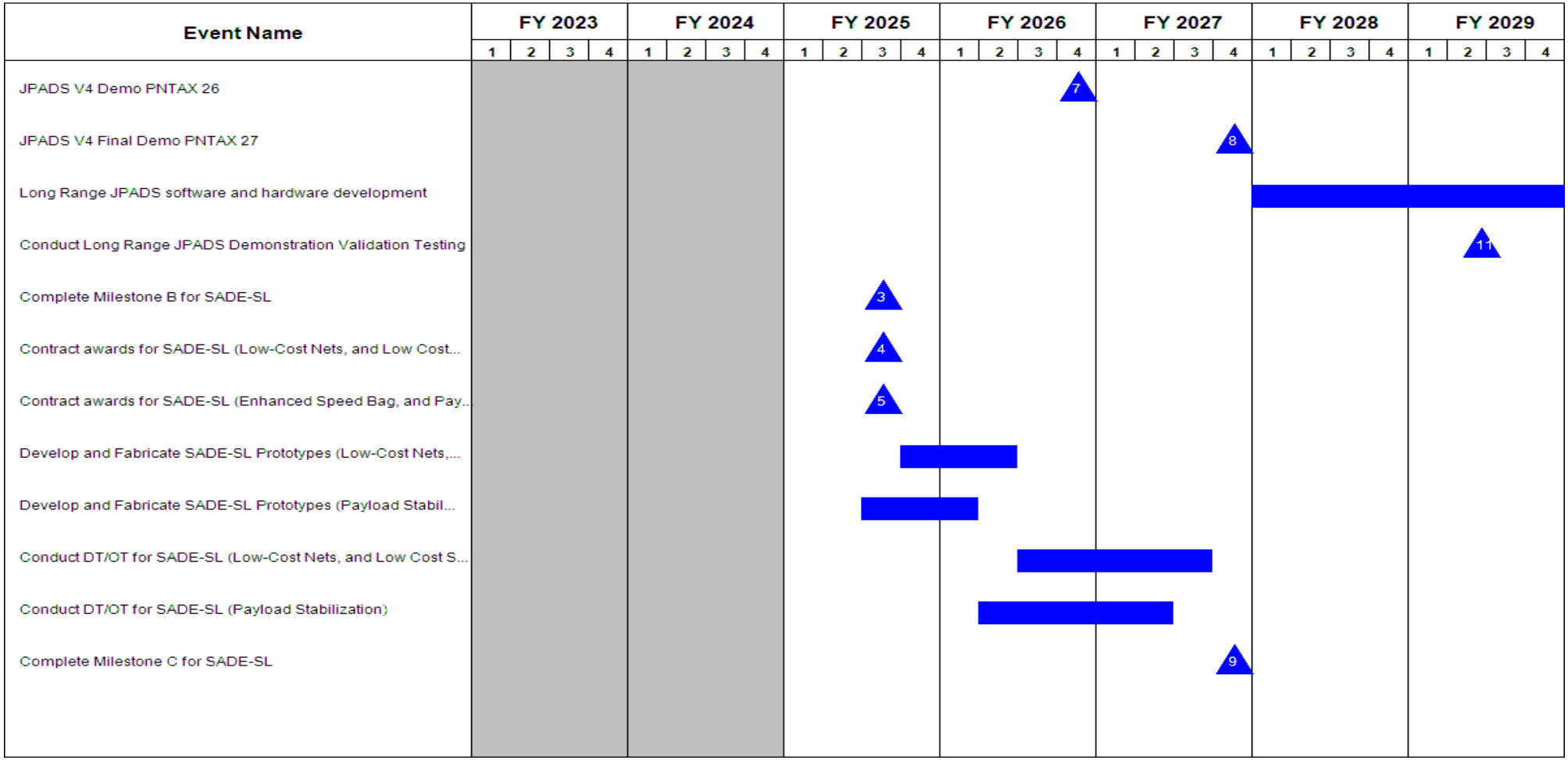

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Conduct DT/OT for RRDAS-L	3	2022	3	2024
Complete Milestone C/TC-STD for RRDAS-L	1	2025	1	2025
Complete MS B for RRDAS-Heavy	1	2025	1	2025
Develop and Fabricate RRDAS - Heavy Prototypes	3	2024	2	2025
Conduct DT and OT for RRDAS-Heavy	2	2025	1	2028
Complete MS C/TC STD for RRDAS-Heavy	4	2028	4	2028
Contract award for JPADS cloud navigation	1	2022	1	2022
Development for JPADS GPS-denied upgrades	1	2022	4	2022
Flight testing for JPADS GPS-denied upgrades	2	2022	4	2022
Hardware/software Development for JPADS M-code	1	2024	3	2024
Test/integration for JPADS M-code	2	2024	4	2024
JPADS V4 hardware/software development	1	2025	2	2027
JPADS V4 test/integration	3	2025	4	2027
JPADS V4 PDR	1	2026	2	2026
JPADS V4 CDR	1	2027	2	2027
JPADS V4 Prototype Demo PNTAX 25	4	2025	4	2025
JPADS V4 Demo PNTAX 26	4	2026	4	2026
JPADS V4 Final Demo PNTAX 27	4	2027	4	2027
Long Range JPADS software and hardware development	1	2028	4	2030
Conduct Long Range JPADS Demonstration Validation Testing	2	2029	2	2029
Complete Milestone B for SADE-SL	3	2025	3	2025
Contract awards for SADE-SL (Low-Cost Nets, and Low Cost Sing Sets)	3	2025	3	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L39 / *Field Sustainment Support Ed*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Contract awards for SADE-SL (Enhanced Speed Bag, and Payload Stabilization)	3	2025	3	2025
Develop and Fabricate SADE-SL Prototypes (Low-Cost Nets, and Low Cost Sing Sets)	4	2025	2	2026
Develop and Fabricate SADE-SL Prototypes (Payload Stabilization)	3	2025	1	2026
Conduct DT/OT for SADE-SL (Low-Cost Nets, and Low Cost Sing Sets)	3	2026	3	2027
Conduct DT/OT for SADE-SL (Payload Stabilization)	2	2026	2	2027
Complete Milestone C for SADE-SL	4	2027	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L41 / *Water And Petroleum Distribution - Ed*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
L41: *Water And Petroleum Distribution - Ed*	-	7.632	7.543	2.618	-	2.618	-	-	-	-	0.000	17.793
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports engineering and manufacturing development efforts as well as the Production Qualification Testing (PQT) and First Article Testing (FAT) efforts to provide all services with ample supply of clean fuel and water, supporting all types of missions. The Army has the mission to supply fuel for all land-based forces, including the Marines and the Air Force, and for supplying bulk drinking water to Soldiers. These programs enable the Army to improve maneuver sustainment operations to meet the demands of Army units and the Future Force. The mission includes receiving and transferring petroleum from trucks, ships, pipelines, and permanent and temporary storage facilities; moving petroleum from storage to and within corps and division areas; fuel quality surveillance testing; and dispensing in support of tactical operations, including rapid refueling of aircraft. This project also supports development and analysis of technologies designed to increase survivability of petroleum and water systems that may operate or be transported in hostile environments. The mission covers water purification and waste water treatment, reutilization, storage, distribution, alternative water source acquisition, disposal, and quality control. These research and development missions support the development and enhancement of rapidly deployed Petroleum and Water equipment, which enables the Army to achieve its vision by providing a highly mobile and self-sustaining systems in hostile joint operations areas. Programs funded on this Project includes: Tactical Fuel Distribution System (TFDS), Bulk Fuel Distribution System (BFDS), Petroleum Expeditionary Analysis Kit (PEAK), Water Bison and Water Bison Light, Water Storage and Distribution System (WSDS) , 3K Tactical Water Purification System (TWPS), Early Entry Fluid Distribution System (E2FDS) and Pipeline Trace Tool - Software Development, Modular Tactical Retail Refueling System (MTRRS), and Load Handling System (LHS) - Compatible Water Tank-rack System (HIPPO), Chemical Biological Radiological Nuclear (CBRN) Water Hauler.

This Project provides for the modernization of current Petroleum and Water System fleets by investigating technology insertions including, but not limited to: condition based maintenance, vetronics, Victory Architecture, autonomous operations and other emerging technologies. Funding also supports developing and testing initial prototypes, and production representative articles to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts. Funding supports non-traditional and middle tier acquisitions to include Other Transaction Authority (OTA) and 804.

FY 2025 Base RDTE $2.618 million provides for Tactical Fuel Distribution System (TFDS) Production Qualification Testing (PQT) closeout and Chemical Biological Radiation Nuclear (CBRN) Water Hauler Production Qualification Testing (PQT). 3k Tactical Water Purification System (3k TWPS) will achieve Milestone 'C', award Low Rate Initial Production (LRIP) hardware and start Production Qualification Testing (PQT). Water Bison will award Low Rate Initial Production (LRIP) hardware and start Production Qualification Testing (PQT) in FY 2025.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Water Bison / Bison Lite	0.139	0.483	1.015

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The Unit Water Trailer (Water Bison) is a replacement for the 400 gallon Water Buffalo. A second variant, the Water Bison Lite, is also required. The Water Bison consists of a baffled, 500 gallon capacity tank and the Water Bison Lite consists of a baffled, 250 gallon capacity tank. They provide the modular force an efficient method of transporting a full day of supply (DOS) of bulk potable water. Both systems include freeze protection that are mounted on a trailer and include all hoses and fittings necessary to dispense water by means of gravity flow. The Water Bison and Water Bison Lite will be used by units at all echelons. The Family of Medium Tactical Vehicles (FMTV) shall be capable of towing this system. ***FY 2024 Plans:*** Bison - System engineering test management ***FY 2025 Plans:*** Funds Bison Production Qualification Testing (PQT) ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase initiation of Production Qualification Testing (PQT)			
Title: Early Entry Fluid Distribution System (E2FDS) ***Description:*** The Early Entry Fluid Distribution System (E2FDS) is a new system that enhances the Inland Petroleum Distribution System (IPDS) pipeline and rapidly establishes new or extends existing pipeline traces. It is a high throughput flexible conduit system for the transport of bulk petroleum or water across the battlefield. It is rapidly-emplaced and capable of a throughput of 850,000 gallons of fuel or 650,000 gallons of raw non-potable water, per a 20 hour operational day through a trace up to 50 miles long. The E2FDS requires little to no engineer support to emplace the conduit or pump stations. Pump stations are fully automated and centrally controlled.	0.287	-	-
Title: Petroleum Expeditionary Analysis Kit (PEAK) ***Description:*** The Petroleum Expeditionary Analysis Kit (PEAK) replaces Aviation Fuels Contamination Test Kit (AFCTK) and provides fuel quality surveillance within all Brigade Combat Teams and Support Brigades. It is a stand-alone system that will rapidly verify petroleum products' suitability for use at point of consumption. The PEAK will evaluate all kerosene-based and diesel fuels used in ground systems and aircraft. It will provide the field with the capability to determine fuel type, grade, and additives. ***FY 2024 Plans:*** PEAK - System engineering test management and travel for FY24 portion of Production Qualification Testing ***FY 2024 to FY 2025 Increase/Decrease Statement:***	0.620	1.069	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease due to completion of Production Qualification Testing (PQT) as program transitions to Full Rate Production (FRP).			
Title: Tactical Fuel Distribution System (TFDS) ***Description:*** The Tactical Fuel Distribution System (TFDS) provides theater bulk petroleum distribution to maximize throughput in order to support early entry, buildup, and onward movement of forces. It replaces the M967 and M969 tanker trailers, which are nearing the end of its useful life. The TFDS consists of a 5,000 gallon armor kit compatible line haul tanker trailer, pulled primarily by the M1088 tractor. It shall be capable of retail fuel distribution and able to travel on unimproved roads and provides support from the Theater Army to Echelons Above Brigade (EAB). ***FY 2024 Plans:*** TFDS - Production Qualification Testing (PQT) / Helicopter Sling Load and Transport Testing ***FY 2025 Plans:*** Final year of engineering support costs for testing closeout. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of majority of PQT testing in FY24.	0.487	3.480	0.210
Title: Load Handling System (LHS) - Compatible Water Tankrack System (HIPPO) ***Description:*** Load Handling System (LHS) - Compatible Water Tank Rack System (HIPPO) replaces the Forward Area Water Point Supply system (FAWPSS) and Semi-Trailer Mounted Fabric Tank (SMFT). It provides capability to receive, store, transport, and distribute bulk and unit retail water to the warfighter. The HIPPO consists of a 2,000 gallon potable water tank in a 20' ISO frame with integrated pump, engine, alternator, hose reel, freeze prevention, and fill stand. The HIPPO is critical for sustaining the soldier and accomplishing combat service support missions at all echelons. Legacy water distribution systems do not provide the mobility required to achieve unit distribution goals for the current and objective force.	1.543	-	-
Title: Bulk Fuel Distribution System (BFDS) ***Description:*** The Bulk Fuel Distribution System (BFDS) provides theater bulk petroleum distribution to maximize throughput to support early entry, buildup, and onward movement of forces. The BFDS consists of a 7,500 gallon line haul tanker trailer, pulled primarily by the M915A3 or later version tractor. The BFDS provides bulk distribution between large fuel storage areas and will include a automated level gauge sensor for mission command reporting and providing asset and in-transit visibility. The BFDS will be used on improved roads.. ***FY 2024 Plans:***	1.335	0.150	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
SEPM for Test Engineer, final PQT report for Full Rate Production Decision. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of Production Qualification Testing (PQT) as program transitions to Full Rate Production (FRP).			
Title: Water and Storage System (WSDS) ***Description:*** Water Storage Distribution System (WSDS) provides the large capacity capability that is tailorable in receiving, storing, and issuing to all bulk water systems in the Army inventory. The WSDS stores and issues potable water in support of individual consumption, medical treatment, Chemical, Biological, Radiological, and Nuclear (CBRN) decontamination. It is used in conjunction with the 1,500 gph Tactical Water Purification System (1.5K TWPS) or the 3,000 gph Reverse Osmosis Water Purification Unit (3K ROWPU). It is the only program of record that is designed to store bulk water in the quantities needed for the Warfighter. The 100,000 gallon WSDS is containerized and will take the place of two 40K systems in the Composite Supply Companies.	1.420	-	-
Title: Modular Fuel System (MFS) Tank Rack Module (TRM) - M107 40gpm Pump Modification Kit ***Description:*** The Modular Fuel System (MFS), Tank Rack Module (TRM) is a 2,500 gallon mobile storage and distribution platform. It is configured in a 20 foot ISO frame and is capable of being transported by a Heavy Expanded Mobility Tactical Truck-Load Handling System (HEMTT-LHS) and the Palletized Load Handling System (PLS). The MFS TRM has a Stand-Alone Retail Capability, utilizing its integrated continuous use electric pump, filter separator and flow meter. It can be operate mounted on the prime mover or trailer or on the ground. There are currently two fielded variants of the TRM (M107 & M107A1). The M107 TRM has a 20 GPM fuel pump as compared to the 40 GPM pump on the M107A1. Modification effort will install the M107A1 pump (and correlating Filter Separator) into the M107 with result in a 100% faster pumping time. ***FY 2024 Plans:*** Fudning for system developmental engineering and test planning/system management, completion of Prototype Testing and contract award for Low Rate Initial Production ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to testing completion.	1.228	0.150	-
Title: 3k Tactical Water Purification Sys. (3k TWPS) ***FY 2024 Plans:***	0.402	0.300	0.510

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
3k TWPS - System engineering management and completion of TDP/P-Spec ***FY 2025 Plans:*** 3k TWPS will achieve Milestone "C" decision and LRIP contract award. RDTE Funding provided for Production Qualification Testing (PQT) ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase to support Production Qualification Testing (PQT), engineering support costs and testing closeout.			
Title: Chemical Biological Radiological Nuclear (CBRN) Water Hauler ***Description:*** The Chemical Biological Radiological Nuclear (CBRN) Water Hauler consists of an 800-gallon capacity tank with integral freeze protection, mounted on the MTV 5 Ton Truck. Decontamination operations require bulk non-potable water in support of the Joint Force per ATP 3-11.32 of up to 450 gallons per vehicle. Decontamination capabilities are critical in Multi-Domain Operations (MDO) because the enemy will utilize multiple layers of Anti-Access and Area Denial (A2AD) capabilities to include CBRN threats to delay and to impose high cost to obstruct strategic objectives. ***FY 2024 Plans:*** Finalize product design/packaging engineering and production of prototype test asset. Production Qualification Testing (PQT) will be funded from FY24 RDTE and will span FY24-25. ***FY 2025 Plans:*** Funds Production Qualification Testing (PQT), engineering support costs and testing closeout. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of activities associated with the Source Selection Board, LRIP hardware and Production Qualification Testing (PQT)	0.171	1.911	0.883
Accomplishments/Planned Programs Subtotals	7.632	7.543	2.618

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• MA6000: *Distribution Systems, Petroleum & Water*	33.844	40.989	57.050	-	57.050	92.695	105.831	107.557	103.401	0.000	541.367
• D02001: *Semitrailers, tankers*	14.869	40.359	59.602	-	59.602	100.964	104.186	114.307	105.329	0.000	539.616
• MA4502: *INSTALLATION OF MODIFICATIONS*	4.999	5.833	8.160	-	8.160	5.575	9.861	9.848	9.903	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• MB6400: *QUALITY SURVEILLANCE EQUIPMENT*	1.045	2.507	2.879	-	2.879	7.487	7.493	7.500	7.575	0.000	36.486

Remarks

D. Acquisition Strategy

Industry days and market research will inform the appropriate Acquisition Strategy for Chemical Biological Radiation Nuclear (CBRN) Water Hauler, Water Bison 500g, Petroleum Expeditionary Analysis Kit (PEAK), Tactical Fuel Distribution System (TFDS), Bulk Fuel Distribution System (BFDS) and Water Storage and Distribution System (WSDS). Conduct developmental and operational testing where applicable for Petroleum Expeditionary Analysis Kit (PEAK), Water Bison 500g, Tactical Fuel Distribution System (TFDS), Petroleum Tankers, and Water Storage and Distribution Systems (WSDS) 40,000 gallon and 100,000 gallon sets. Conduct Source Selection Evaluation Boards (SSEBs) within the Petroleum and Water Systems portfolio. Develop documentation in support of Milestone Decisions. Will award Other Transactional Agreements (OTAs) or traditional Federal Acquisition Regulation (FAR) based contracts based on market research, industry capabilities and program risks.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Matrix Spt / GVSC Engineering Spt	MIPR	Various TACOM : Warren, MI	5.540	1.722	Jan 2023	2.603	Jan 2024	0.995	Jan 2025	-		0.995	0.000	10.860	-
		Subtotal	5.540	1.722		2.603		0.995		-		0.995	0.000	10.860	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN - Design/Packaging Engineering	MIPR	Combat Capabilities Development Command (DEVCOM) Ground Vehicle Systems Center (GVSC) : TACOM Warren, MI	-	0.080	Mar 2023	0.550	Nov 2023	-		-		-	0.000	0.630	-
3K TWPS - Tech Data Package Update	MIPR	GVSC : Warren, MI	-	0.267	Apr 2023	-		-		-		-	0.000	0.267	-
		Subtotal	-	0.347		0.550		-		-		-	0.000	0.897	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Bison - User Jury	MIPR	TBD : TBD	-	-		0.120	Apr 2024	-		-		-	0.000	0.120	-
TFDS - User Jury	MIPR	TBD : TBD	-	-		0.200	Mar 2024	-		-		-	0.000	0.200	-
		Subtotal	-	-		0.320		-		-		-	0.000	0.320	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L41 / *Water And Petroleum Distribution - Ed*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TFDS - Production Qualification / HSL / Transport	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		2.000	Feb 2024	-		-		-	0.000	2.000	-
TFDS - Ballistics Test	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		0.570	Aug 2024	-		-		-	0.000	0.570	-
HIPPO - PQT / FAT / HSL / Transportability Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	1.510	1.498	May 2023	-		-		-		-	0.000	3.008	-
MFS TRM - Mod Kit Prototype Testing	MIPR	Army Test Center : Yuma, AZ	-	0.932	Feb 2023	-		-		-		-	0.000	0.932	-
BFDS - Production Qualification Test	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	1.238	Mar 2023	-		-		-		-	0.000	1.238	-
PEAK - Production Qualification Testing / Cust. Test (LUT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	0.306		0.700	Nov 2023	-		-		-	0.000	1.006	-
WSDS - Production Qualification Testing / Cust. Test (LUT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	1.302	Mar 2023	-		-		-		-	0.000	1.302	-
Bison - Production Qualification Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		0.700	Jun 2025	-		0.700	0.000	0.700	-
CBRN - Production Qualification Testing (PQT)	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		0.800	Aug 2024	0.573	Jun 2025	-		0.573	0.000	1.373	-
E2FDS - GVSC - Software Int Lab	MIPR	GVSC : Warren, MI	-	0.150	Jan 2023	-		-		-		-	0.000	0.150	-
3K TWPS - Production Qualification Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	-		-		0.350	Aug 2025	-		0.350	0.000	0.350	-
E2FDS - Helicopter Sling Load Testing	MIPR	Aberdeen Proving Ground : Aberdeen Proving Ground, MD	-	0.137	May 2023	-		-		-		-	0.000	0.137	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	1.510	5.563		4.070		1.623		-		1.623	0.000	12.766	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.050	7.632		7.543		2.618		-		2.618	0.000	24.843	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

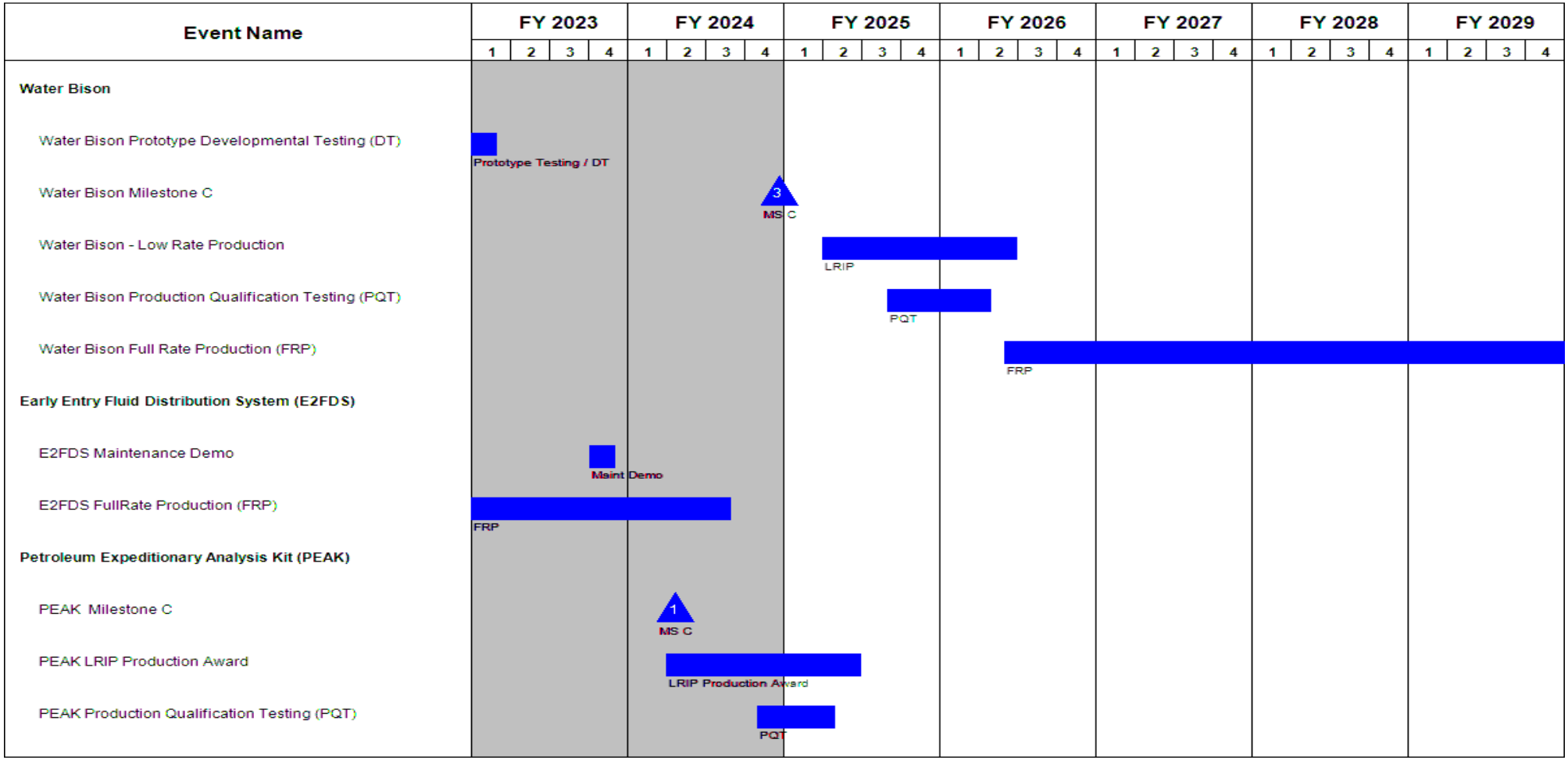


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

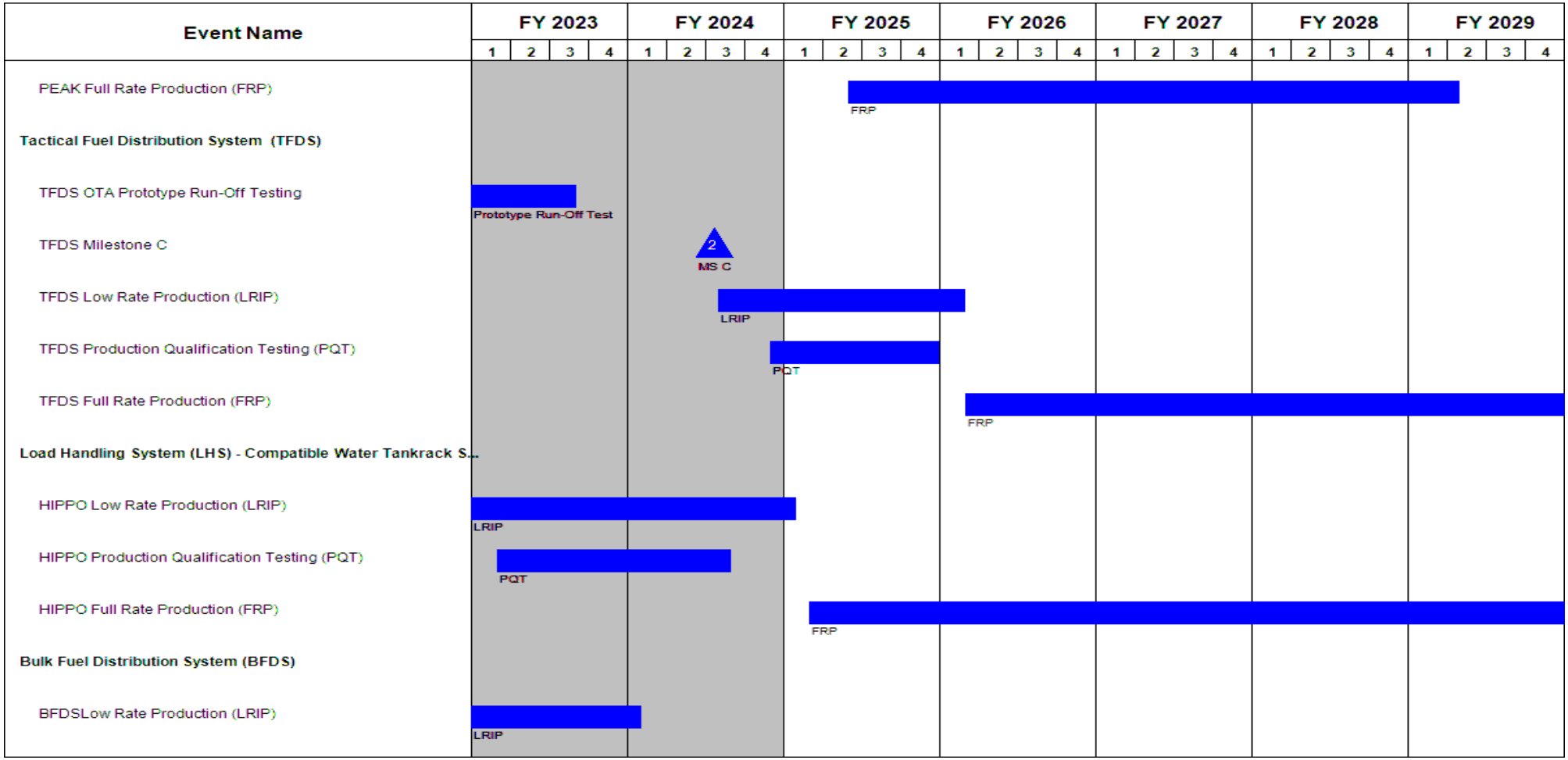


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

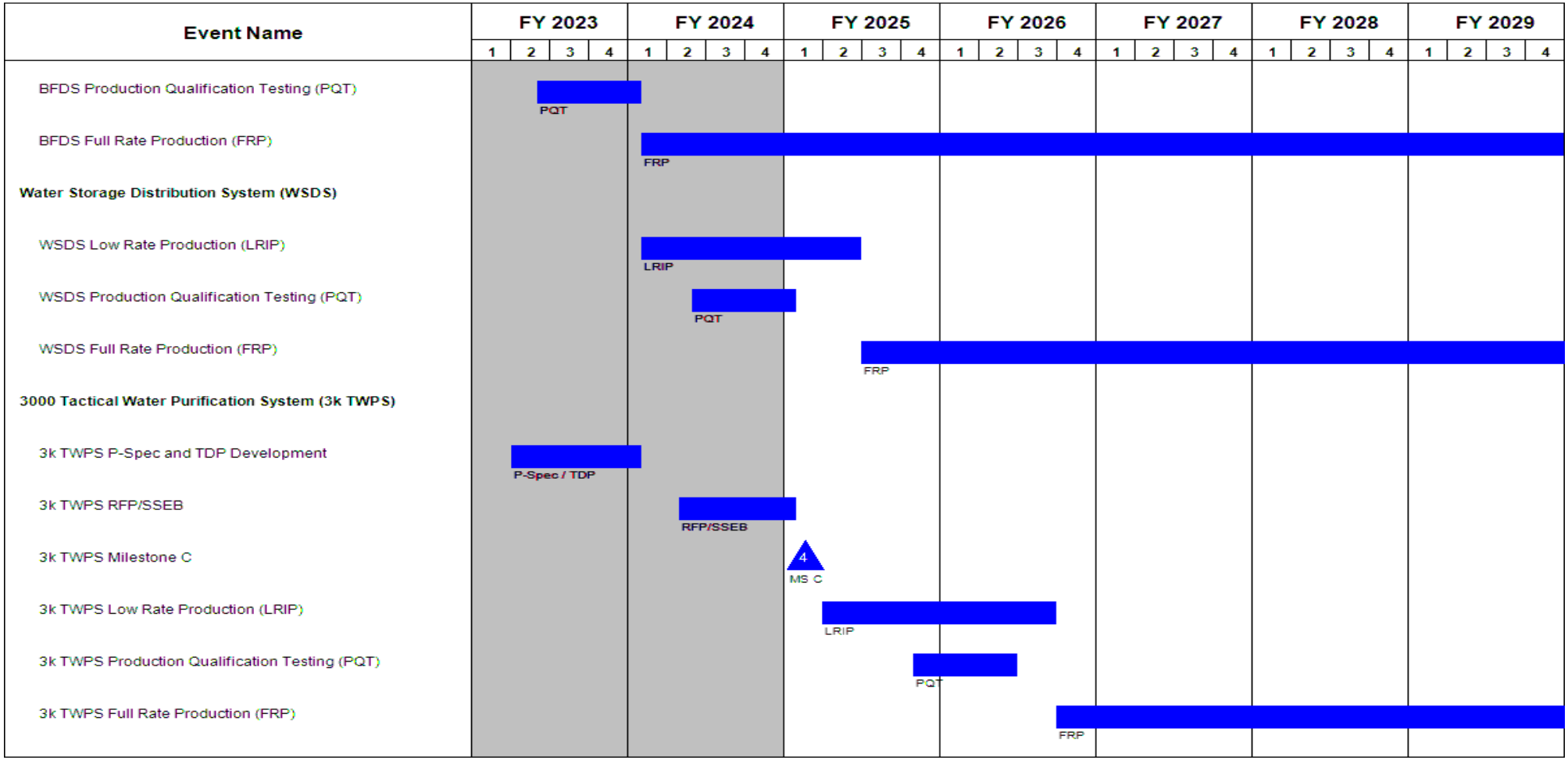
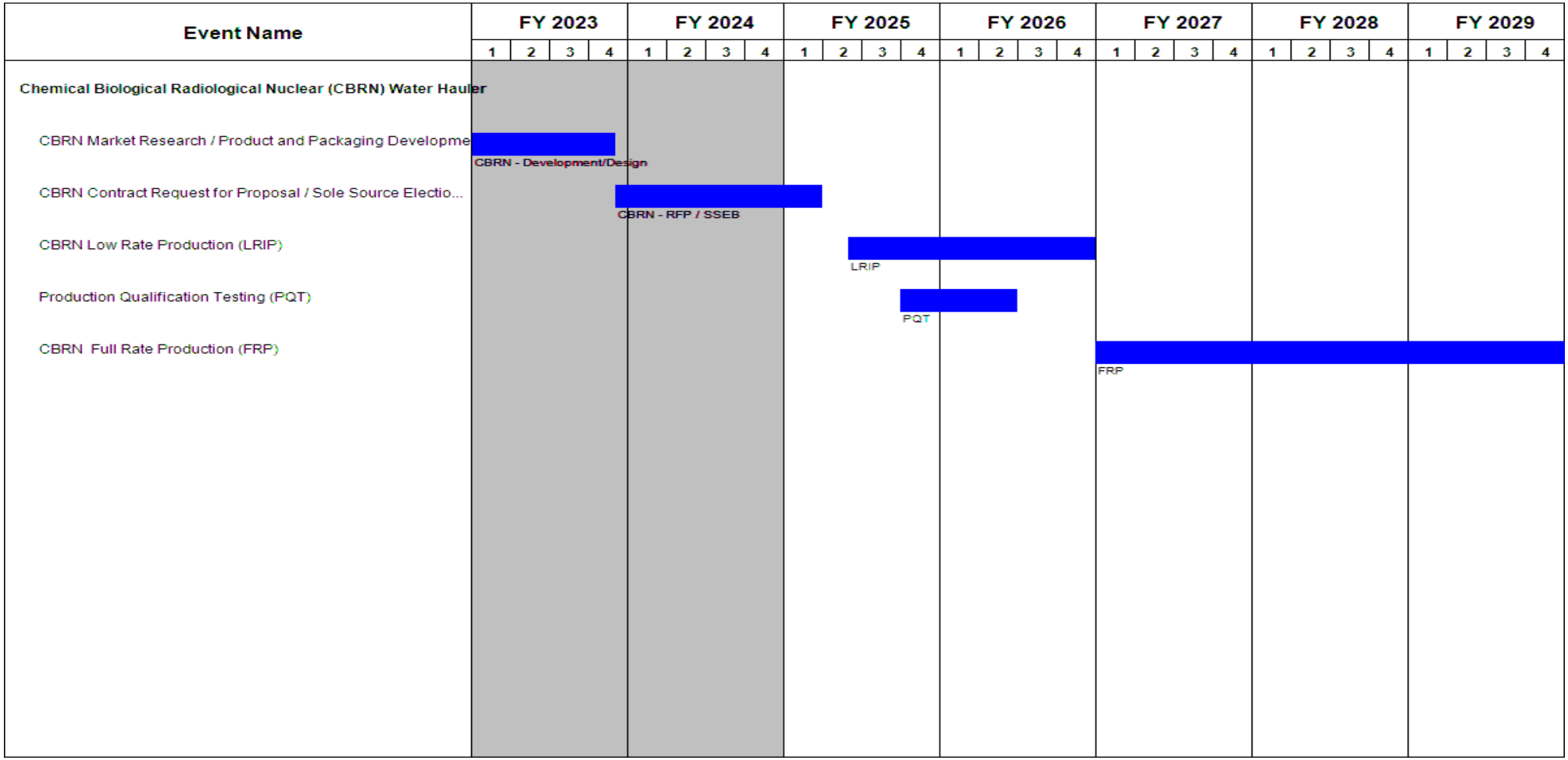


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*



Note

N/A

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Water Bison	1	2022	4	2025
Water Bison Other Transactional Authority Award	1	2022	1	2022
Water Bison Prototype Developmental Testing (DT)	3	2022	1	2023
Water Bison Milestone C	4	2024	4	2024
Water Bison - Low Rate Production	2	2025	2	2026
Water Bison Production Qualification Testing (PQT)	3	2025	2	2026
Water Bison Full Rate Production (FRP)	2	2026	4	2031
Early Entry Fluid Distribution System (E2FDS)	1	2018	4	2023
E2FDS Developmental Testing / Production Qualification Testing (DT/PQT)	1	2021	4	2022
E2FDS Log Demo and Limited User Test (LUT)	2	2022	2	2022
E2FDS Milestone C	3	2022	3	2022
E2FDS Low Rate Production (LRIP)	1	2022	4	2022
E2FDS Maintenance Demo	4	2023	4	2023
E2FDS FullRate Production (FRP)	4	2022	3	2024
Petroleum Expeditionary Analysis Kit (PEAK)	1	2021	3	2023
PEAK Contract Prototype Award (OTA)	1	2022	1	2022
PEAK - Protoype Dev Test - Fly Off Testing	2	2022	4	2022
PEAK Milestone C	2	2024	2	2024
PEAK LRIP Production Award	2	2024	2	2025
PEAK Production Qualification Testing (PQT)	4	2024	2	2025
PEAK Full Rate Production (FRP)	2	2025	2	2029
Tactical Fuel Distribution System (TFDS)	1	2020	1	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
TFDS OTA Award	2	2022	2	2022
TFDS OTA Prototype Run-Off Testing	4	2022	3	2023
TFDS Milestone C	3	2024	3	2024
TFDS Low Rate Production (LRIP)	3	2024	1	2026
TFDS Production Qualification Testing (PQT)	4	2024	4	2025
TFDS Full Rate Production (FRP)	1	2026	3	2035
Load Handling System (LHS) - Compatible Water Tankrack System (HIPPO)	3	2020	4	2025
HIPPO Developmental Test (DT)	4	2020	1	2021
HIPPO Low Rate Production (LRIP)	2	2021	1	2025
HIPPO Production Qualification Testing (PQT)	1	2023	3	2024
HIPPO Full Rate Production (FRP)	1	2025	1	2032
Bulk Fuel Distribution System (BFDS)	1	2020	2	2028
BFDS Other Transaction Authority (OTA) Award	1	2021	1	2021
BFDS (OTA) Testing	4	2021	1	2022
BFDS Milestone C	3	2022	3	2022
BFDSLow Rate Production (LRIP)	3	2022	1	2024
BFDS Production Qualification Testing (PQT)	2	2023	1	2024
BFDS Full Rate Production (FRP)	1	2024	4	2029
Water Storage Distribution System (WSDS)	4	2019	3	2028
WSDS Pump Test Assets Contract Award	1	2022	1	2022
WSDS Milestone C	2	2022	2	2022
WSDS Pump Off Testing	2	2022	3	2022
WSDS Low Rate Production (LRIP)	1	2024	2	2025
WSDS Production Qualification Testing (PQT)	2	2024	1	2025
WSDS Full Rate Production (FRP)	3	2025	3	2032

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L41 / *Water And Petroleum Distribution - Ed*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
3000 Tactical Water Purification System (3k TWPS)	1	2023	2	2030
3k TWPS P-Spec and TDP Development	2	2023	1	2024
3k TWPS RFP/SSEB	2	2024	1	2025
3k TWPS Milestone C	1	2025	1	2025
3k TWPS Low Rate Production (LRIP)	2	2025	3	2026
3k TWPS Production Qualification Testing (PQT)	4	2025	2	2026
3k TWPS Full Rate Production (FRP)	4	2026	1	2038
Chemical Biological Radiological Nuclear (CBRN) Water Hauler	1	2023	2	2031
CBRN Market Research / Product and Packaging Development	1	2023	4	2023
CBRN Contract Request for Proposal / Sole Source Election Board	4	2023	1	2025
CBRN Low Rate Production (LRIP)	2	2025	4	2026
Production Qualification Testing (PQT)	4	2025	2	2026
CBRN Full Rate Production (FRP)	1	2027	2	2031

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*				Project (Number/Name) L46 / *Maintenance Support Equipment*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
L46: *Maintenance Support Equipment*	-	0.937	1.306	-	-	-	-	3.507	1.202	1.202	0.000	8.154
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Mobile Maintenance Equipment provides state of the art, deployable, vehicle-mounted, Soldier portable and containerized shelter tool systems supporting the readiness of the Joint warfighter directly supporting Soldier Lethality, Next Generation Combat Vehicle (NGCV) and Long Range Precision Fires (LRPF), as well as, addressing GAPs 10 and 17. These systems are equipped with industrial quality tools required for Two Level Maintenance that reduce common tool redundancy, provide tool standardization, minimize transportation requirements, reduce logistical footprint, and are backed by a Lifetime Warranty/Replacement Program which reduces sustainment costs. This is accomplished by employing a system of systems approach to maintenance acquisition. The System of Systems approach builds a maintenance capability upon each system, allowing a logical and natural approach to the Army's overall two level maintenance strategy. These inter-connected systems distributed throughout the Army at multiple levels and echelons provide a holistic repair capability in all scenarios and environments. These systems provide the Maintenance and Combat Commanders an unprecedented capability to repair wheeled, tracked, aviation, ground support and weapons systems on site at one location at one time. This approach to maintenance acquisition increases efficiencies and supports the current force while providing modular configurations designed to meet the specific needs of the Army maintainer in today's complex transforming environment.

The need to develop and maintain a System of System maintenance approach is critical for maintaining readiness due to the growing complexity of today's military equipment, operational tempo, modularity, and current and evolving Tactics Techniques and Procedures (TTPs). The individual maintenance systems are comprehensive, interconnected and capable of solving and repairing any maintenance problems. The System of Systems approach does not advocate specific tools, methods or practices; instead it seeks to promote a streamlined comprehensive set of systems for solving maintenance challenges where the interactions of doctrine, technology, time and tactics techniques and procedures are the primary drivers. Funding for projects shall include test article procurement and testing of Soldier portable maintenance Sets, Kits, and Outfits (SKOs), load banks and refrigeration tool kit; investigation of new technologies for next generation mobile maintenance equipment shop sets including the Shop Equipment Welding (SEW) and Shop Equipment Contact Maintenance (SECM); development of additional Standard Automotive Tool Set (SATS) maintenance modules, Armament Repair Shop Set (ARSS), Refrigeration Tool Kit (RTK), Mobile Ammunition Processing Facility (MAPF), Forward Repair System (FRS), Special Tools initiatives, shelter mounted system development; packaging development; and technical support for emerging Joint Capabilities Integration and Development System (JCIDS) materiel requirements documents. Additive Manufacturing increased capabilities to the Metal Working and Machining Shop Set (MWMSS) to include a polymer and metal printing and associated digital library capability. Modernization upgrades increase effectiveness while improving efficiency, reliability and maintainability while supporting emerging Army systems as well as using lower cost set components.

Funding supports modernization of the current Ordnance equipment by investigating technology insertions due to but not limited to obsolescence and technology innovations. Funding also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement concepts.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

L46 / Maintenance Support Equipment has no FY 2025 funding request.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: MWMSS Additive Manufacturing ***Description:*** Develop Additive Manufacturing capability for Army systems, Limited User Experiment and Evaluation. ***FY 2024 Plans:*** Funds will support market research and ongoing limited user experimentation in support of MWMSS AM capabilities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** R&D efforts for the MWMSS Additive Manufacturing will be completed in FY24 and will be in production.	-	0.431	-
Title: Forward Repair System and Standard Automotive Tool Set ***FY 2024 Plans:*** Funds development, TDP updates, test build, test activities, and logistics updates in support of the FRS and SATS. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** No additional FY 2025 funds are required as FRS Technical Data Package updates, test asset build, and testing will utilize FY 2024 RDTE. FRS will commence production in FY 2024.	0.937	0.875	-
Accomplishments/Planned Programs Subtotals	0.937	1.306	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• G05301: *Mobile Maintenance Equipment Systems*	176.545	17.287	26.271	-	26.271	64.919	96.627	115.803	123.719	0.000	621.171
• D16400: *FORWARD REPAIR SYSTEM (FRS)*	-	8.140	12.573	-	12.573	-	-	-	-	0.000	20.713

Remarks

D. Acquisition Strategy

Programs will progress through market research, market samples, Description for Purchase, development, production representative systems and testing. Modernization and Optimization of existing tools and testing of market samples will progress from Engineering and Manufacturing Development (EMD) and transition into production. All efforts will support the two level maintenance concept utilizing commercial technologies and incorporating them into SKOs to support next generation weapon and support systems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L46 / *Maintenance Support Equipment*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Additive Manufacturing Hardware	Various	TBD : TBD	1.098	-		0.331	Jan 2024	-		-		-	0.000	1.429	-
Forward Repair System Development / Prototype	MIPR	CCDC : Rock Island, IL	0.538	0.937		0.625	May 2024	-		-		-	0.000	2.100	-
		Subtotal	1.636	0.937		0.956		-		-		-	0.000	3.529	N/A

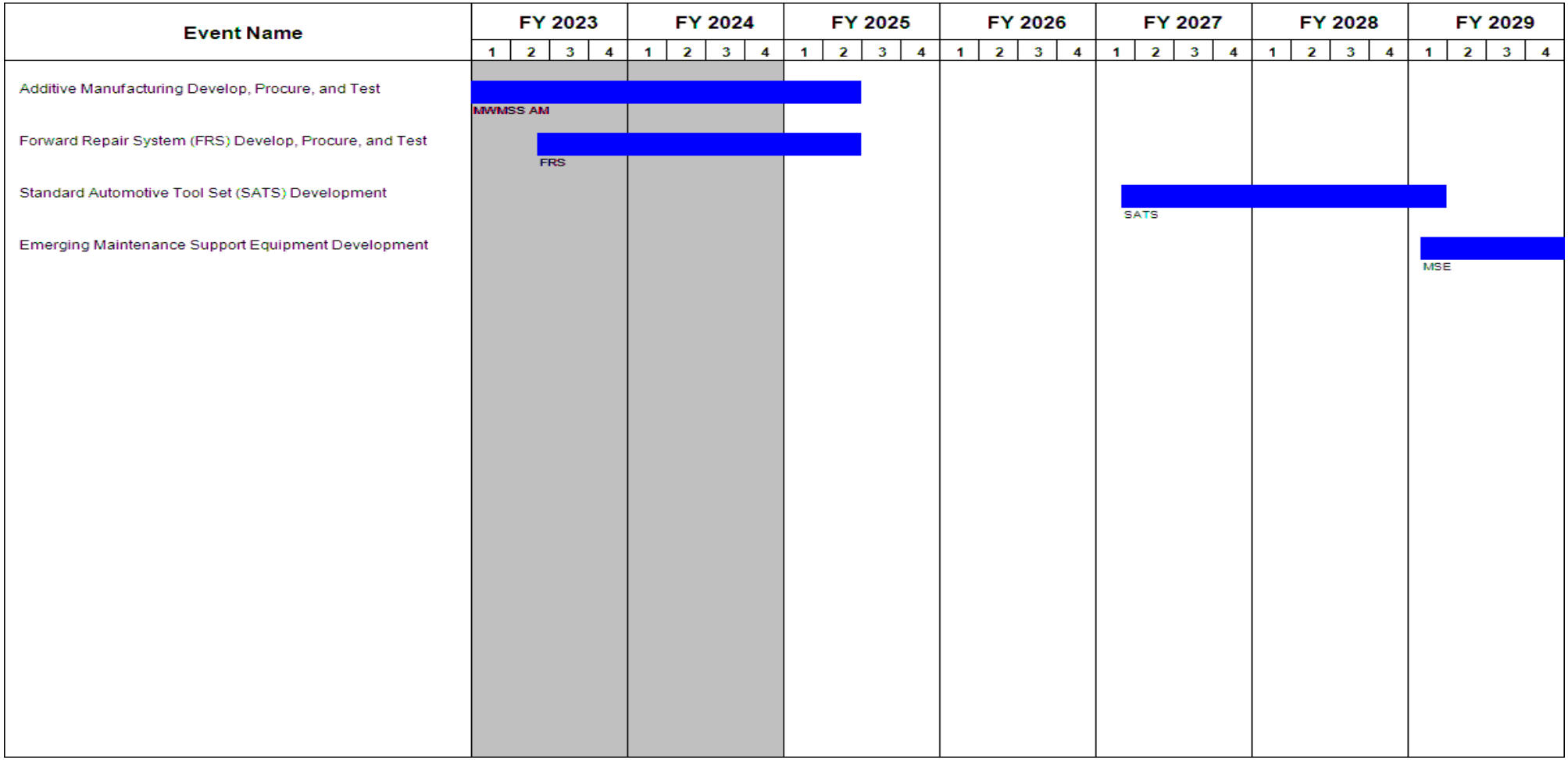
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Additive Manufacturing Testing	MIPR	ATEC : Aberdeen Test Center	-	-		0.100	May 2024	-		-		-	0.000	0.100	-
Forward Repair System Testing	MIPR	ATEC : Aberdeen Test Center	-	-		0.250	May 2024	-		-		-	0.000	0.250	-
		Subtotal	-	-		0.350		-		-		-	0.000	0.350	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.636	0.937		1.306		-		-		-	0.000	3.879	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*



Note

N/A

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L46 / *Maintenance Support Equipment*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Additive Manufacturing Develop, Procure, and Test	3	2016	2	2025
Forward Repair System (FRS) Develop, Procure, and Test	2	2023	2	2025
Standard Automotive Tool Set (SATS) Development	1	2027	1	2029
Emerging Maintenance Support Equipment Development	1	2029	1	2031

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L47 / *Improved Environmental Control Units Ed*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
L47: *Improved Environmental Control Units Ed*	-	1.473	1.102	1.171	-	1.171	1.171	1.183	1.196	1.208	0.000	8.504
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This line supports the Army Network Modernization Strategy Line of Effort #4 (Command Post). Program develops/integrates Improved Environmental Control Units (IECUs) supporting existing and new requirements including the Command Post Integrated Infrastructure (CPI2), the Army Standard Family of Rigid Wall Shelters (ASFRWS) and other applications. In addition, it supports the development of critical Chemical Biological Radiological and Nuclear (CBRN) modifications required to support the Chemically Protected Deployable Medical System and other systems requiring this capability.

The IECU program will provide updates to replace the current Military Standard Family of Environmental Control Units (ECUs) with the new generation IECUs using environmentally-suitable refrigerants to eliminate Ozone-Depleting Chemicals (ODCs) and reduce Global Warming Potential (GWP). The IECUs will provide improved cooling, heating and dehumidification to Soldiers and critical equipment systems in combat, combat support, combat service support units, and field hospitals. The IECUs are required to replace the currently fielded ECUs in order to comply with statutory and regulatory mandates on the use of Class II ODCs (such as HCFC-22) and address increasing restrictions on high GWP chemicals. Technical improvements over existing ECUs will yield fuel and weight savings, reduction in scheduled maintenance and increased reliability. Funding also provides applications engineering support to integration development for shelter/trailer platforms to assist users and help further standardize cooling units in the field. Funding also supports developing initial prototypes to enable refinement of operational requirements and technology refreshment, and design improvements to address issues and support future sustainment. Expansion of product variants will further accommodate replacement of aging legacy ECUs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Technology Development	1.473	0.267	1.171
Description: Development and integration of Improved Environmental Control Units (IECU) in the range of 9-60K BTU/Hr to support the phase out of R-410A refrigerant and support IECU platform integration into end-user systems. ***FY 2024 Plans:*** Integrate near term drop in replacement refrigerant (replacing R410a) to provide a lower Global Warming Potential (GWP) alternative for existing and new production 9, 18K & 36K's as well as test and evaluation for performance and reliability. ***FY 2025 Plans:*** Begin developing solution for implementation into platform integrated systems. Continue with developmental testing to increase the capacity of the 9K IECU. Utilize findings from long-term refrigerant studies to begin conducting tests on a far-term			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
refrigerant replacement for R410-A. Conduct flammability testing on potential near and far term refrigerant solutions identified as replacements for R-410A. Determine if the refrigerant solution for the 9-18-36K IECU is viable for the 60K variant. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY25 increase due to the initiating study and implementation of near and far term refrigeration solutions			
Title: Government System Test and Evaluation ***Description:*** Testing of IECU performance for multiple variants for stand-alone and soft wall shelter IECUs. ***FY 2024 Plans:*** Continue testing to verify performance and reliability of 9/18/36/60K IECUs with interim drop in replacement refrigerant (454B) to provide a lower Global Warming Potential (GWP) alternative for existing and new production IECUs. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to support technology development efforts for refrigeration solutions.	-	0.105	-
Title: Other Contract and Government Agency ***Description:*** Support engineering, logistics, and testing efforts for multiple ECU variants, and integrated heating/cooling units. Match and right-size current IECU family to applications and/or develop and test new variants to provide the most efficient system solution. ***FY 2024 Plans:*** Continue to provide refrigeration technical expertise (fielding, testing, evaluation) in support of alternative near term refrigerant development efforts and integration and/or adaptations for IECU user programs across the Army. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to support technology development efforts for refrigeration solutions.	-	0.130	-
Title: Government Program Management ***Description:*** Provide oversight and management of engineering, logistics, contracts, and testing efforts for the IECU family (9, 18, 36, 60K) and multiple user engagements in preparation for IECU variants to transition to production. Provide oversight and management of follow-on IECU variants. ***FY 2024 Plans:***	-	0.600	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue to provide oversight and management of engineering, logistics, contracts, and testing efforts for product improvement and next generation IECU system development efforts including 9/18/36K and 60K IECU programs. Prepare to initiate effort for objective solutions with low GWP refrigerant designs planned for FY25. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease to support technology development efforts for refrigeration solutions.			
Accomplishments/Planned Programs Subtotals	1.473	1.102	1.171

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• MF9303: *IMPROVED ENVIRONMENTAL CONTROL UNITS*	7.672	7.617	14.355	-	14.355	14.945	15.568	16.184	17.020	Continuing	Continuing

Remarks

D. Acquisition Strategy

Support modernization and technology insertions required to adapt ECUs for future integrated system heating and cooling applications in support of existing and new requirements including the Command Post Integrated Infrastructure (CPI2) and chemically protected deployable medical system. Evaluate requirements versus existing IECU fleet and develop/test initial prototypes of new or modified ECUs to meet integrated system heating and cooling parameters. This effort will support the development of Purchase Descriptions (PDs) and Technical Data Packages (TDPs) for eventual competitive procurement.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L47 / *Improved Environmental Control Units Ed*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18,36,60K Improved Environmental Control Unit (IECU)	Various	PM E2S2 : various	1.645	0.595	Oct 2022	0.600	Dec 2023	-		-		-	0.000	2.840	Continuing
		Subtotal	1.645	0.595		0.600		-		-		-	0.000	2.840	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	NSSC : Natick, MA	4.133	0.429	Jun 2023	0.267	Mar 2024	0.300	Mar 2025	-		0.300	0.000	5.129	Continuing
		Subtotal	4.133	0.429		0.267		0.300		-		0.300	0.000	5.129	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	CERDEC : Ft. Belvoir, VA	4.030	0.149	Mar 2023	0.130	Dec 2023	0.021	Dec 2024	-		0.021	0.000	4.330	-
		Subtotal	4.030	0.149		0.130		0.021		-		0.021	0.000	4.330	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
9,18,36,60K Improved Environmental Control Unit (IECU)	MIPR	ETL : Dallas, TX	1.028	0.300	Apr 2023	0.105	Feb 2024	0.850	Feb 2025	-		0.850	0.000	2.283	-
		Subtotal	1.028	0.300		0.105		0.850		-		0.850	0.000	2.283	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) L47 / *Improved Environmental Control Units Ed*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.836	1.473		1.102		1.171		-		1.171	0.000	14.582	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

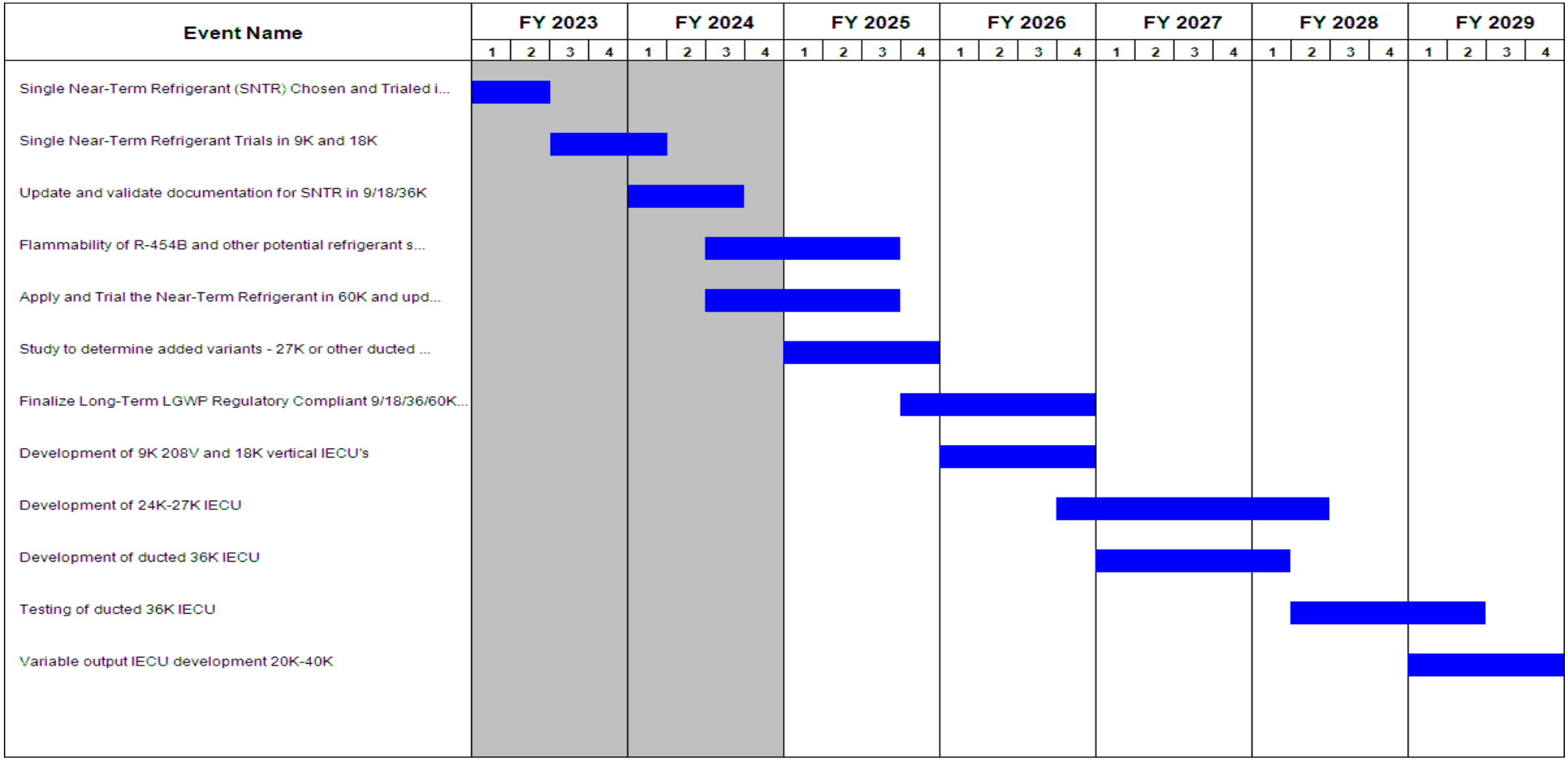


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** L47 / *Improved Environmental Control Units Ed*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Single Near-Term Refrigerant (SNTR) Chosen and Trialed in 36K	1	2023	2	2023
Single Near-Term Refrigerant Trials in 9K and 18K	3	2023	1	2024
Update and validate documentation for SNTR in 9/18/36K	1	2024	3	2024
Flammability of R-454B and other potential refrigerant solutions in 36K IECU	3	2024	3	2025
Apply and Trial the Near-Term Refrigerant in 60K and update documentation	3	2024	3	2025
Study to determine added variants - 27K or other ducted variants	1	2025	4	2025
Finalize Long-Term LGWP Regulatory Compliant 9/18/36/60K Design	4	2025	4	2026
Development of 9K 208V and 18K vertical IECU's	1	2026	4	2026
Development of 24K-27K IECU	4	2026	2	2028
Development of ducted 36K IECU	1	2027	1	2028
Testing of ducted 36K IECU	2	2028	2	2029
Variable output IECU development 20K-40K	1	2029	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) VR7 / *Combat Service Support Systems*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
VR7: *Combat Service Support Systems*	-	15.253	2.012	2.261	-	2.261	1.180	1.193	1.205	1.217	0.000	24.321
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development (EMD) of critical soldier support and sustainment systems that provide more endurance and agility to combat operations, enabling success of Army Expeditionary Forces in future multi-domain scenarios. Project includes highly mobile shelter systems (rigid and soft wall), expeditionary base camp subsystems, field service systems, mortuary affairs equipment, field heaters, and other combat service support equipment. These systems will fill identified theater capability gaps, improve safety, improve unit sustainability, improve resource and energy efficiency; address environmental impacts, and increase combat effectiveness. This project supports Engineering and Manufacturing Development (EMD), Prototyping, and testing of critical tactical support systems that allow mobile Joint Service command and control, as well as medical, force projection, and maintenance platforms. This project develops critical enablers that support a number of strategic initiatives, including the Army Campaign Plan, the Army Modernization Strategy, the Army Climate Strategy, and the Army Arctic Strategy. This project ensures Army Expeditionary Forces are capable of rapid deployment while reducing sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands in lift, combat zone footprint, and costs for logistical support. Specifically, shelters developed under these efforts will be better insulated and more energy efficient, thus reducing environmental control requirements, energy demand, and fuel usage. Therefore, they will reduce the Army's logistics and carbon footprint and lengthen the resupply interval in contested, support-constrained environments. Additionally, better insulated shelter systems allow for operational viability in extreme environments such as the Arctic.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Army Standard Family of Rigid Wall Shelters (ASF-RWS)	3.253	2.012	2.261
Description: The ASF-RWS program conducts formal development to modernize and standardize three variants of Army rigid wall shelters by incorporating the latest material and manufacturing technologies. Doing so will reduce the proliferation of non-standard shelters and their associated logistics burden across the Services. The program produces approved and tested standard shelter designs to support procurements by materiel developers and Program Managers (PMs) requiring rigid wall shelters. Once developed and formally type-classified, ASF-RWS shelter procurements are customer-funded by PMs as a cost under their program(s). The ASF-RWS program is structured as three sub-programs, each focused on a shelter variant: Phase One (P1) - Expandable/Non-Expandable Variant Phase Two (P2) - Vehicle Mounted Variant Phase Three (P3) - Panelized Variant			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue with ASF-RWS P1 program development. Award performance specification based development contract with production options, conduct design development build and test PQT units, conduct Test Readiness Review (TRR) and initiate logistics development for ASF-RWS P2 (Vehicle Mounted Shelters). Conduct market strategy, develop performance specification, build performance specification based RFP with production options for ASF-RWS P3 (Panelized Shelter). ***FY 2025 Plans:*** Complete P1 Developmental Testing (DT), continue development of the Product Support Package (PSP), and prepare for Milestone (MS) C /Type Classification (TC)/Full Material Release (FMR) activities. Prepare for ASF-RWS P2 (Vehicle Mounted) contract award. For ASF-RWS P3, complete Operational Assessments (OA), complete logistics development, and prepare for and execute TC-STD/ FMR. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase to support the ASF-RWS P2 (Vehicle Mounted Shelter) contract activities.			
Accomplishments/Planned Programs Subtotals	3.253	2.012	2.261

	FY 2023	FY 2024
Congressional Add: ASF-RWS P3 Expandable- Panelized and Collapsible Shelter (E-PACS)	12.000	-
FY 2023 Accomplishments: ASF-RWS P3 design enhancements will be incorporated to the initial EPACS prototype, and 11 new Prototypes will be procured. Operational Assessment (OA) will be conducted in support of future P3 efforts.		
Congressional Adds Subtotals	12.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

To support modernization and standardization to the next generation of Army Rigid Wall Shelters (RWS) by incorporating 30+ years of shelter performance technology and improved manufacturing for increased producibility and affordability. Provide more modular shelters for increased interoperability and scalability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	Project (Number/Name) VR7 / *Combat Service Support Systems*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management Support	Various	PM Force Sustainment Systems : Natick, MA	2.834	4.491	May 2024	1.009	Dec 2023	1.261	Dec 2024	-		1.261	0.000	9.595	-
		Subtotal	2.834	4.491		1.009		1.261		-		1.261	0.000	9.595	N/A

Remarks

Project Management Support category includes matrix labor support.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Standard Family of Rigid Wall Shelters (ASF-RWS)	Various	Various : Various	3.143	9.284	Aug 2023	0.803	Dec 2023	0.500	Nov 2024	-		0.500	0.000	13.730	-
		Subtotal	3.143	9.284		0.803		0.500		-		0.500	0.000	13.730	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Standard Family of Rigid Wall Shelters (ASF-RWS)	Various	Various : Various	0.582	1.478	Feb 2024	0.200	Dec 2023	0.500	Dec 2024	-		0.500	0.000	2.760	-
		Subtotal	0.582	1.478		0.200		0.500		-		0.500	0.000	2.760	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.559	15.253		2.012		2.261		-		2.261	0.000	26.085	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

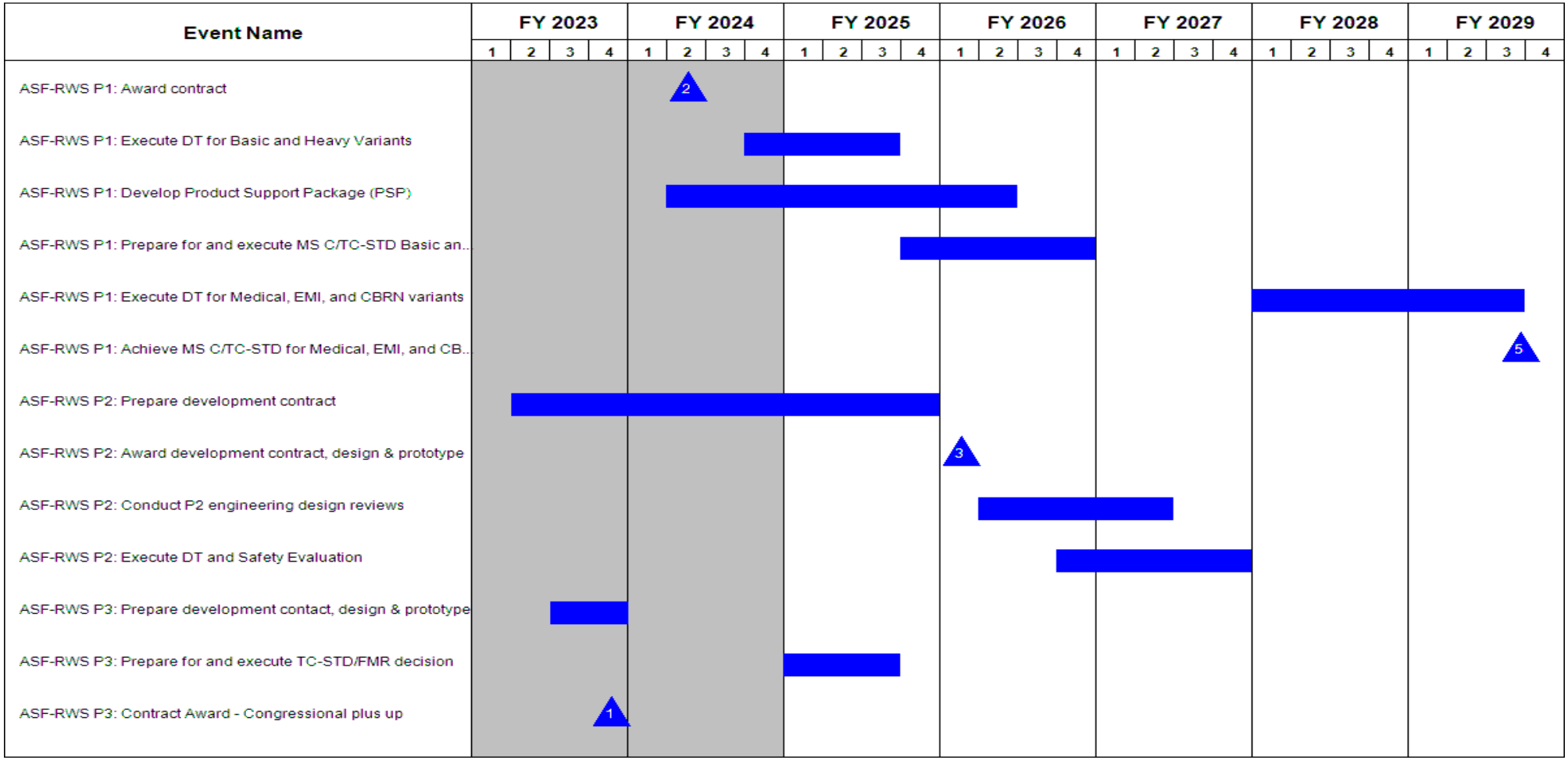


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

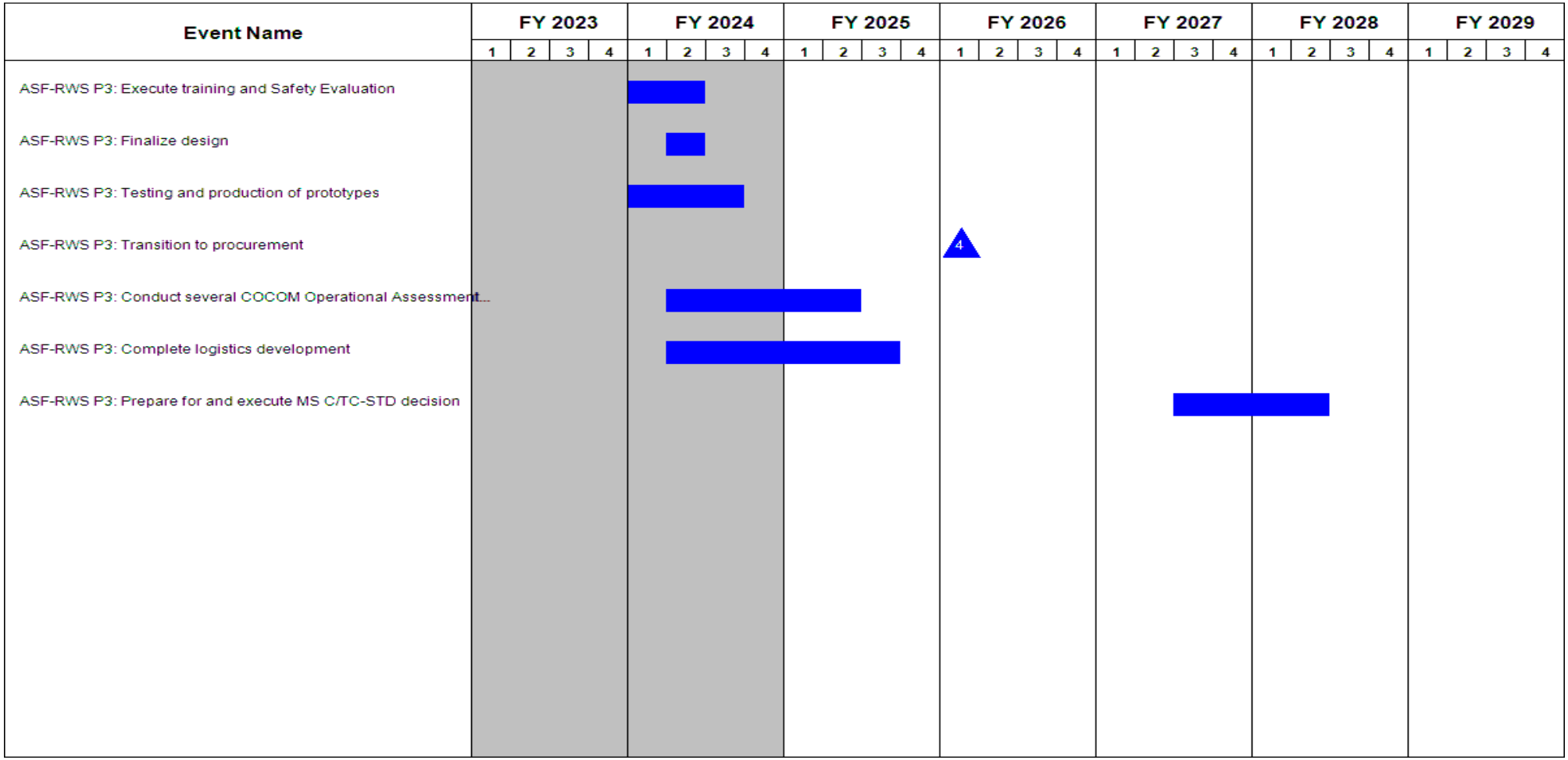


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604804A / *Logistics and Engineer Equipment - Eng Dev*	**Project (Number/Name)** VR7 / *Combat Service Support Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ASF-RWS P1: Award contract	2	2024	2	2024
ASF-RWS P1: Execute DT for Basic and Heavy Variants	4	2024	3	2025
ASF-RWS P1: Develop Product Support Package (PSP)	2	2024	2	2026
ASF-RWS P1: Prepare for and execute MS C/TC-STD Basic and Heavy Variants	4	2025	4	2026
ASF-RWS P1: Execute DT for Medical, EMI, and CBRN variants	1	2028	3	2029
ASF-RWS P1: Achieve MS C/TC-STD for Medical, EMI, and CBRN variants	3	2029	3	2029
ASF-RWS P2: Prepare development contract	2	2023	4	2025
ASF-RWS P2: Award development contract, design & prototype	1	2026	1	2026
ASF-RWS P2: Conduct P2 engineering design reviews	2	2026	2	2027
ASF-RWS P2: Execute DT and Safety Evaluation	4	2026	4	2027
ASF-RWS P3: Prepare development contact, design & prototype	3	2023	4	2023
ASF-RWS P3: Prepare for and execute TC-STD/FMR decision	1	2025	3	2025
ASF-RWS P3: Contract Award - Congressional plus up	4	2023	4	2023
ASF-RWS P3: Execute training and Safety Evaluation	1	2024	2	2024
ASF-RWS P3: Finalize design	2	2024	2	2024
ASF-RWS P3: Testing and production of prototypes	1	2024	3	2024
ASF-RWS P3: Transition to procurement	1	2026	1	2026
ASF-RWS P3: Conduct several COCOM Operational Assessments (OA)	2	2024	2	2025
ASF-RWS P3: Complete logistics development	2	2024	3	2025
ASF-RWS P3: Prepare for and execute MS C/TC-STD decision	3	2027	2	2028

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604805A *I Command, Control, Communications Systems - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	43.533	34.214	92.300	-	92.300	41.776	41.116	40.489	40.826	0.000	334.254
593: *Joint Battle Command - Platform (JBC-P)*	-	43.533	34.214	33.114	-	33.114	33.128	33.470	33.845	34.182	0.000	245.486
DH4: *CMOSS Mounted Form Factor (CMFF) Radio Cards*	-	-	-	21.802	-	21.802	-	-	-	-	0.000	21.802
DH5: *CMOSS Mounted Form Factor (CMFF) Chassis*	-	-	-	37.384	-	37.384	8.648	7.646	6.644	6.644	0.000	66.966

Note

Project Code DH4 CMOSS Mounted Form Factor (CMFF) Radio Cards and Project Code DH5 CMOSS Mounted Form Factor (CMFF) Chassis are new starts in FY 2025 within PE PE 0604805A Command, Control, Communications Systems - Eng Dev.

A. Mission Description and Budget Item Justification

Project 593, Joint Battle Command - Platform (JBC-P) funds the Mounted Mission Command (MMC) Family of Systems (FoS) and provides:
- Interoperable data, message, and waveforms
- Integration with Joint Command, Control, Communications, Computers, Combat Systems, Intelligence, Surveillance, and Reconnaissance (C5ISR) and strike capabilities
- Sensors and applications that enable operations across domains
- Critical Interoperability features that bridge the communications gap between the Command Post Computing Environment and Mobile/ Handheld Computing Environment (Nett Warrior)
- Data mediation, message format translation, and waveform exchanges across all computing environments (CEs) delivering improved information dissemination
- Mounted Common Operating Picture data sources, shared blue / red situational awareness, and Position / Location Information across the CEs
- Common, reusable services that enable Warfighting Function (WfF) convergence for rapid capability development and delivery with reduced costs for external programs
- Mounted platform data sensor collection, processing, and disbursement applications that enable and enhance WfFs on the battlefield
- Foundational cross-cutting capabilities that integrate with Joint C5ISR and strike capabilities

The MMC FoS programs are the cornerstone of Joint Forces command and control situational awareness and communications that provides soldiers and commanders a near real-time map-based view of the battlefield, reducing fratricide and populating the Tactical Common Operating Picture. The MMC FoS addresses the Blue Force Tracking (BFT-3) effort under the MMC-Transport (MMC-T) program and the next generation software development under the MMC-Software (MMC-S) program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604805A *I Command, Control, Communications Systems - Eng Dev*

The MMC-T program provides the BFT-3 capabilities, including electronic warfare (EW), cyber resiliency, and multiple network paths (Geosynchronous Equatorial Orbit (GEO), Low-Earth Orbit (LEO), Line of Sight (LoS), and Beyond LoS) using a modular open systems approach by developing the next generation BFT-3 transceiver and NSA certified encryption device leveraging the MMC-S Smart-Routing capability. MMC-T will introduce anti-jam and resilient waveforms as well as multiple (SATCOM and LoS) communications paths leveraging MMC-S Smart-Routing capability. MMC-T is developed using an agile and flexible contracting approach to promote competition using common standards.

The MMC-S program provides next generation software that facilitates convergence of WfF applications into the Mounted Computing Environment (MCE) infrastructure, as well as developing smart routing that will use the BFT-3 network and leverage other tactical and commercial networks. MMC-S utilizes the Tactical Assault Kit (TAK) government owned application allowing convergence of WfF applications, as well as agile development and deployment.

Project DH4, Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Modular Open Suite of Standards (CMOSS) Mounted Form Factor (CMFF) delivers Software Defined Radio (SDR) cards, Cryptographic Subsystem (CSS) cards, and Digital Radio Heads (DRH) required by the CMOSS Mounted Form Factor (CMFF) Abbreviated Capability Development Document (A-CDD) for the Ground and Aviation's tactical communication requirements. CMFF provides simultaneous transmission and reception of multiple waveforms across multiple channels in a single or multiple SDR card(s) integrated in the CMFF chassis with NSA certifiable CSS and interoperable with the Digital Radio Head. CMFF will introduce a Blocking Strategy roadmap. Block 1 starts with TSM and future blocks will build upon Block 1; Block 2 adds Single Channel Ground and Airborne Radio System (SINCGARS), Air Traffic Control (ATC), Warrior Robust Enhanced Network Tactical Scalable MANET (WREN TSM), initial Cryptographic Subsystem Card (CSS), and Digital Radio Head (DRH); Block 3 adds Mobile User Objective System (MUOS), Link-16, Second generation Anti-jam Tactical UHF Radio for NATO (SATURN), Demand Assigned Multiple Access (DAMA) and final CSS and DRH.

Project DH5, CMFF Chassis funds Mounted Common Infrastructure (MCI) Chassis development, integration of circuit card assemblies (CCAs) into the chassis, testing and integration of the system solution into target platforms. CMOSS is a defined suite of open architecture and Army standards that facilitate the reduction of system size, weight, and power-cooling (SWaP-C) and ensure commonality across multiple platforms. Sharing of hardware and software components is enabled within the MCI Chassis. CMFF will help move the implementation of C5ISR/Electronic Warfare (EW)) capabilities away from costly and complex separate "stove-piped boxes" on individual platforms. The use of open standards will make it simpler and more cost-effective to upgrade capabilities or keep pace with commercial technology by eliminating complex integration challenges, lack of competition, and proprietary interfaces. The CMFF capability can only be realized when paired with the development of associated CCA for integration into the chassis and peripheral enabling devices, such as antennae and appropriate user interfaces. Other programs are responsible for funding and developing the CCAs and peripheral devices; the CMFF MCI Chassis program is responsible for chassis development, system of system integration of the CCAs and external resources into the chassis and platform integration.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army					Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*			R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*		
B. Program Change Summary ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Previous President's Budget	44.993	34.214	33.899	-	33.899
Current President's Budget	43.533	34.214	92.300	-	92.300
Total Adjustments	-1.460	0.000	58.401	-	58.401
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.460	-			
• Adjustments to Budget Years	-	-	58.401	-	58.401

Change Summary Explanation

Funding increased in FY2025 due to the addition of two new starts (project codes DH4 and DH5).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) 593 / *Joint Battle Command - Platform (JBC-P)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
593: *Joint Battle Command - Platform (JBC-P)*	-	43.533	34.214	33.114	-	33.114	33.128	33.470	33.845	34.182	0.000	245.486
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

JBC-P/Mounted Mission Command (MMC) funding aligns to Network modernization priorities and supports Army 2030/2040 initiatives toward implementing multi- and joint all-domain operations in a dispersed battlefield. The MMC Family of Systems (FoS) will employ data centricity and contains hardened cyber/electronic warfare advancements that will improve data sharing and enhance command & control on-the-move (C2OTM) functionality, resulting in more reliable communications anytime, anywhere in all domains.

This Project supports the MMC FoS programs that are the cornerstone of Joint Forces command and control, situational awareness and communications that provides soldiers and commanders a near real-time map-based view of the battlefield, reducing fratricide and populating the Tactical Common Operating Picture. The MMC FoS addresses the Blue Force Tracking (BFT-3) effort under the MMC-Transport (MMC-T) program and the next generation software development under the MMC-Software (MMC-S) program.

The MMC-T program provides the BFT-3 capabilities, including electronic warfare (EW), cyber resiliency, and multiple network paths (Geosynchronous Equatorial Orbit (GEO), Low-Earth Orbit (LEO), Line of Sight (LoS), and Beyond LoS) using a modular open systems approach by developing the next generation BFT-3 transceiver and NSA certified encryption device leveraging the MMC-S Smart-Routing capability. MMC-T will introduce anti-jam and resilient waveforms, as well as multiple (SATCOM and LoS) communications paths leveraging MMC-S Smart-Routing capability. MMC-T is developed using an agile and flexible contracting approach to promote competition using common standards.

The MMC-S program provides next generation software that facilitates convergence of Warfighting Function (WfF) applications into the Mounted Computing Environment (MCE) infrastructure, as well as developing smart routing that will use the BFT-3 network and leverage other tactical and commercial networks. MMC-S utilizes the Tactical Assault Kit (TAK) government owned application allowing convergence of WfF applications, as well as agile development and deployment.

FY 2025 funding supports MMC-T development and systems engineering efforts to continue the transceiver and encryption device development. MMC-T development activities will include the integration of the BFT waveform and terrestrial radio line of sight waveform on the transceiver; integration of the transceiver and encryption device to each mounted platform; interoperability with the BFT Satellite Network Control Center (SNCC) and Satellite Ground Station (SGS); and test and evaluation events. Funding will also support initial BFT Aviation development activities.

FY 2025 funding supports the development of the vehicle-based MMC software application that provides the soldier with situational awareness of the battlefield and the capability to communicate via BFT. The funding allows for software development using the continuous integration/continuous delivery (CI/CD) approach and feedback

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

from Army users through DevOps interactions. In addition, the funding provides for developmental testing, integration with Firing platforms, and the development of mission planning and logistics capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Software/Systems Engineering	34.172	22.815	22.944

Description: Perform Software/Systems Engineering needed to develop BFT-3 capabilities, applications and services, to include, but not limited to conducting engineering studies, architecture development (network and software), system analyses, technical readiness assessments, technical interchange/exchange meetings/events, and development of related reports and other deliverables.

Develop MMC-S that provides an integrated mission command capability across Platforms, through all echelons, delivering simplicity, intuitiveness, core services and applications, a common look and feel, and functionality across all Warfighting Functions (WfF), including Fires, Logistics, Intelligence, and Maneuver on the government owned Tactical Assault Kit (TAK) application via agile development and deployment. Software development is focused on enhanced situational awareness functions, cross-cutting data exchange services, and Mission Command applications displayed on the next-generation common geospatial solution [map] through a graphical user interface that delivers a "common look and feel" across the Computing Environment (CEs).

FY 2024 Plans:
Funds continue to support MMC-T software/systems engineering and development of the BFT-3 capability under the BFT-3 transceiver and encryption device development contracts. Efforts include the integration of the BFT modular waveform, that will enable competition by allowing third-party transceiver manufacturers to access and interoperate with the existing BFT network (including the BFT-2 SNCC and SGS); integration of a resilient line of sight waveform on a software defined radio; and integration of the transceiver and encryption devices to each mounted platform.

Funds complete development of MMC-S v3.2, focused on platform sensor and interface support as well as integration with the Fires WfF. Platform development will focus on supporting interfaces to the Stryker and Bradley platforms, including Remote Display, multi-user support, and sensor integration such as Long-Range Acquisition System (LRAS), Improved Target Acquisition System (ITAS), Fire-Support Sensor System (FS3), and Netted Lethality Upgrades. Fires capability will be integrated by converging the Precision Fires - Mounted (PF-M) for trained users and adding untrained observer fires capabilities for other users. MMC-S v3.2 development funding builds on the MMC-S v3.1 smart routing features by developing support for the MMC-T prototype transceiver and encryption device to provide network path diversity and PACE planning features. These funds also initiate development of MMC-S v3.3, which includes DEVOPS, completes integration with BFT-3, and aligns with Capability Set 27 priorities.

FY 2025 Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funds continue MMC-T software/systems engineering and completes development of the BFT-3 capability under the BFT-3 transceiver and encryption device development contracts. Efforts include the integration of the BFT modular waveform, that will enable competition by allowing third-party transceiver manufacturers to access and interoperate with the existing BFT network (including the BFT SNCC and SGS); integration of a resilient line of sight waveform on a software defined radio; and integration of the transceiver and encryption devices to each mounted platform. Funding will also support initial BFT Aviation variant development activities. Funds continue to support MMC-S software/systems engineering and development utilizing a CI/CD approach with new capability development and convergence with third-party apps and WfF apps on a quarterly cadence. Platform development will focus on supporting platform sensor interfaces. Engineering efforts will complete integration with the MMC-T encryption device. Software development will include mission planning and logistics capabilities and support for commercial off the shelf computing (tablets, laptop devices). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Although the funding for Software/Systems Engineering remains relatively constant, MMC-T decrease due to the BFT-3 transceiver and encryption device design becoming more mature and nearing production. MMC-S increase due to the quarterly software releases of new capabilities and convergence of WfF under the CI/CD approach to increase capability for the soldier.			
Title: Test, Evaluation and Integration	5.882	7.833	6.515
Description: Test and evaluation (T&E) efforts consist of planning and execution of required test events for MMC-T to inform fielding decisions and MMC-S to inform software releases to ensure the safe delivery of capability to the Warfighter. T&E events include: Development Operations (DevOps), Developmental Tests (DT), Field Tests (FT), Soldier Touch Points (STPs), Software Assurance Tests, Capability Set Integration Events, Cyber Assessments, Risk Reduction Tests, and Capability Set Operational Demonstration, Army Interoperability Certification (AIC), Security Control Assessment-Validation, and Initial Operational Test and Evaluation (IOT&E). ***FY 2024 Plans:*** Funds support BFT network certification of the BFT-3 transceiver and NSA certification of the encryption device. Funds also support MMC-T T&E activities for a DT and a STP #2 (FT) in support of BFT-3 development as the program moves towards a production decision. Funds support MMC-S T&E activities for the required DT, AIC and OT events that support the MMC-S v3.2 Full Deployment Decision (FDD) planned for FY 2024. ***FY 2025 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funds support MMC-T T&E activities for multiple test events, as well as the transceiver and encryption device certification in support of BFT-3 development as the program moves towards a production decision, continuous risk reduction testing, and a STP in preparation for the initial operational test (IOT) in 2QFY26. Funds support MMC-S T&E activities including quarterly developmental tests, STPs and continuous interoperability testing in support of quarterly software releases. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Overall decrease, however, MMC-T requirements increased due to additional test and certification events. MMC-S requirements decrease due to a reduction in major MMC-S operational tests in line with the CI/CD approach.			
Title: PM Support (Matrix & Contractor) ***Description:*** Matrix and contractor support, including technical, logistics, and business staff oversight, for MMC-T and MMC-S. ***FY 2024 Plans:*** Funds continue to finance matrix and contractor personnel to support MMC-T and MMC-S development/systems engineering and provide technical, test expertise, and business oversight for BFT-3 transceiver and encryption device prototypes, and MMC-S software changes. Technical areas include SATCOM, Network, Intel, Cyber, Radio Frequency, Waveform and Transport. Additionally, this PM support includes system analyses of external programs systems and future systems for integration and convergence into the MCE infrastructure, technical readiness assessments and assistance with stakeholder technical exchange meetings and events. Business/program management efforts include funds execution, contract management and logistical support. Some of this work is secured via FSAs between the PM and various Government support agencies, such as the DEVCOM Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, and other PEOs (e.g. PEO STRI). ***FY 2025 Plans:*** Funds continue to finance matrix and contractor personnel to support MMC-T and MMC-S development/systems engineering and provide technical, test expertise, and business oversight for BFT-3 transceiver and encryption device prototypes, and MMC-S software changes. Technical areas include SATCOM, Network, Intel, Cyber, Radio Frequency, Waveform and Transport. Additionally, this PM support includes system analyses of external programs systems and future systems for integration and convergence into the MCE infrastructure, technical readiness assessments and assistance with stakeholder technical exchange meetings and events. Business/program management efforts include funds execution, contract management and logistical support. Some of this work is secured via FSAs between the PM and various Government support agencies, such as the	3.479	3.566	3.655

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
DEVCOM Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center and other PEOs. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Minor increase due to planned FY 2025 activities and economic assumptions.			
Accomplishments/Planned Programs Subtotals	43.533	34.214	33.114

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• W61990: *JOINT BATTLE COMMAND - PLATFORM (JBC-P)*	186.515	215.290	184.610	-	184.610	169.661	169.108	165.388	167.039	Continuing	Continuing

Remarks

Procurement funding (Base funding) is designated for the procurement, fielding, training and program management of JBC-P (through FY 2025) and the Mounted Mission Command (MMC) Family of Systems (FoS). JBC-P will achieve Full Operational Capability (FOC) by completing procurement in FY 2024 and fielding in FY 2025. MMC-T development efforts are underway to ensure the next generation transceiver and encryption device (BFT-3 hardware) are compatible as the MMC FoS replaces the JBC-P system. MMC-S to begin Platform Integration in FY 2025.

D. Acquisition Strategy

The JBC-P program achieved First Unit Equipped in FY 2015 in response to the JBC-P Capabilities Development Document in lieu of Capabilities Production Document (CDD ILO CPD), which was Joint Requirements Oversight Council (JROC) approved in March 2013. Using the CDD ILO CPD objective requirements, PdM JBC-P began Systems Engineering development in FY 2017 for the program's next generation Blue Force Tracking (BFT) Open Systems Architecture Developmental and systems engineering efforts, which were performed through intra-government collaboration with C5ISR's Research and Technology Integration Directorate (RTI) and the Engineering and Systems Integration Directorate (ESI).

At this same time, PdM JBC-P was overseeing development for the Mounted Computing Environment (MCE), which is one of six computing environments in the Common Operating Environment (COE). MCE is the Army's initiative to provide simple and intuitive Mission Command on-the-Move and situational awareness down to the platoon level. It is standards based, protected, and supports incremental improvements and Warfighting Function application capability enhancements.

Modernization of the JBC-P capability will be accomplished via a MMC Family of Systems (FoS) approach to maximize development flexibility and supports incremental JBC-P capability improvements over time. The MMC FoS addresses the BFT-3 effort under the MMC Transport (MMC-T) program and the next generation software development (previously conducted under the MCE funding line) under the MMC Software (MMC-S) program; planning is underway for future FoS program to address compute and store requirements. This structure capitalizes on work completed to date to utilize and respond to technological advances to provide cutting-edge capabilities to the Warfighters and out-pace the obsolescence curve.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

MMC-T is based on the objective requirements in the JBC-P CDD ILO CPD, the MCE Requirements Definition Package (RDP), and the Mounted Mission Command-Hardware & Transport (MMC HW&T) Abbreviated CDD. This program will offer a transport agnostic Modular Open System Approach (MOSA) compliant, resilient, multi-band, multi-path capability that enables Commanders' the ability to perform Mission Command on the Move against near-peer adversaries during Multi Domain Operations in cyber- and electronic warfare-denied environments.

The MMC-T Materiel Development Decision (MDD) Acquisition Decision Memorandum (ADM) signed in September 2021, designated MMC-T an Acquisition Category II program. The life cycle entry point will be identified based on system maturity and MMC-T CDD status. MMC-T utilizes an approved evolutionary acquisition approach punctuated by prototype development of the BFT-3 transceivers and encryption devices, as well as modular waveforms, which will be subjected to Developmental/ Operations (DevOps) and Soldier Touch Points (STPs) to inform a MMC-T CDD.

In response to the COE Information System-Initial Capability Document and the MCE RDP (both approved in October 2018), PdM JBC-P established the MMC-S program to develop the next generation JBC-P software and the MCE infrastructure to facilitate convergence of external programs and third-party applications into the MCE. MMC-S provides a common user experience that enables leaders to lead and fight their formations from anywhere on the battlefield. MMC-S serves as the data mediator between disparate computing environments (CEs), including the Command Post Computing Environment and the Mobile/Handheld Computing Environment (Nett Warrior), enabling seamless Mission Command and Common Operating Picture generation across all three CEs.

The MMC-S MDD ADM signed in June 2020 designated MMC-S an Acquisition Category II program and approved entry into the acquisition life cycle at the Full Deployment Decision (FDD) for MMC-S v3.1 in FY 2023. The original MMC-S strategy called for an Incremental development approach to meeting the requirements. In FY 2024, MMC-S transitioned to a continuous improvement construct with no further increments. MMC-S utilizes an agile continuous integration/continuous delivery (CI/CD) CI/CD approach, leveraging DevOps, to ensure capability is delivered quickly, satisfies requirements, and addresses Warfighter feedback through quarterly software releases. This development process injects enhancements into the baseline software, making it easier and faster to incorporate technological advances. The product office conducts commercial software assessments to determine applicability and suitability for inclusion in the MCE.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) 593 / *Joint Battle Command - Platform (JBC-P)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BFT-3 (MMC-T) Software/ Systems Engineering	C/FFP	GDMS/L3Harris : Multiple	95.258	17.808	Nov 2022	11.343	Nov 2023	8.249	Nov 2024	-		8.249	Continuing	Continuing	-
MCE (MMC-S) Software/ Systems Engineering	IA	Multiple (Government and industry) : Multiple	-	16.364	Nov 2022	11.472	Nov 2023	14.695	Nov 2024	-		14.695	Continuing	Continuing	-
		Subtotal	95.258	34.172		22.815		22.944		-		22.944	Continuing	Continuing	N/A

Remarks

Although the funding for Software/Systems Engineering remains relatively constant, MMC-T decrease due to the BFT-3 transceiver and encryption device design becoming more mature and nearing production. MMC-S increase due to the quarterly software releases of new capabilities and convergence of WfF under the CI/CD approach to increase capability for the soldier.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Matrix / SETA Contractor)	MIPR	PdM MMC : Aberdeen Proving Ground (APG), MD	13.860	3.479	Nov 2022	3.566	Nov 2023	3.655	Nov 2024	-		3.655	Continuing	Continuing	-
		Subtotal	13.860	3.479		3.566		3.655		-		3.655	Continuing	Continuing	N/A

Remarks

Minor increase due to planned FY 2025 activities and economic assumptions.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BFT-3 (MMC-T) Develop and Conduct Tests and Assessments	MIPR	Multiple : Multiple	30.923	0.966	Oct 2022	2.844	Nov 2023	5.308	Nov 2024	-		5.308	Continuing	Continuing	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) 593 / *Joint Battle Command - Platform (JBC-P)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCE (MMC-S) Develop and Conduct Tests and Assessments	MIPR	Multiple : Multiple	-	4.916	Nov 2022	4.989	Nov 2023	1.207	Nov 2024	-		1.207	Continuing	Continuing	-
		Subtotal	30.923	5.882		7.833		6.515		-		6.515	Continuing	Continuing	N/A

Remarks

Overall decrease, however, MMC-T requirements increased due to additional test and certification events. MMC-S requirements decrease due to a reduction in major MMC-S operational tests in line with the CI/CD approach.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	140.041	43.533		34.214		33.114		-		33.114	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

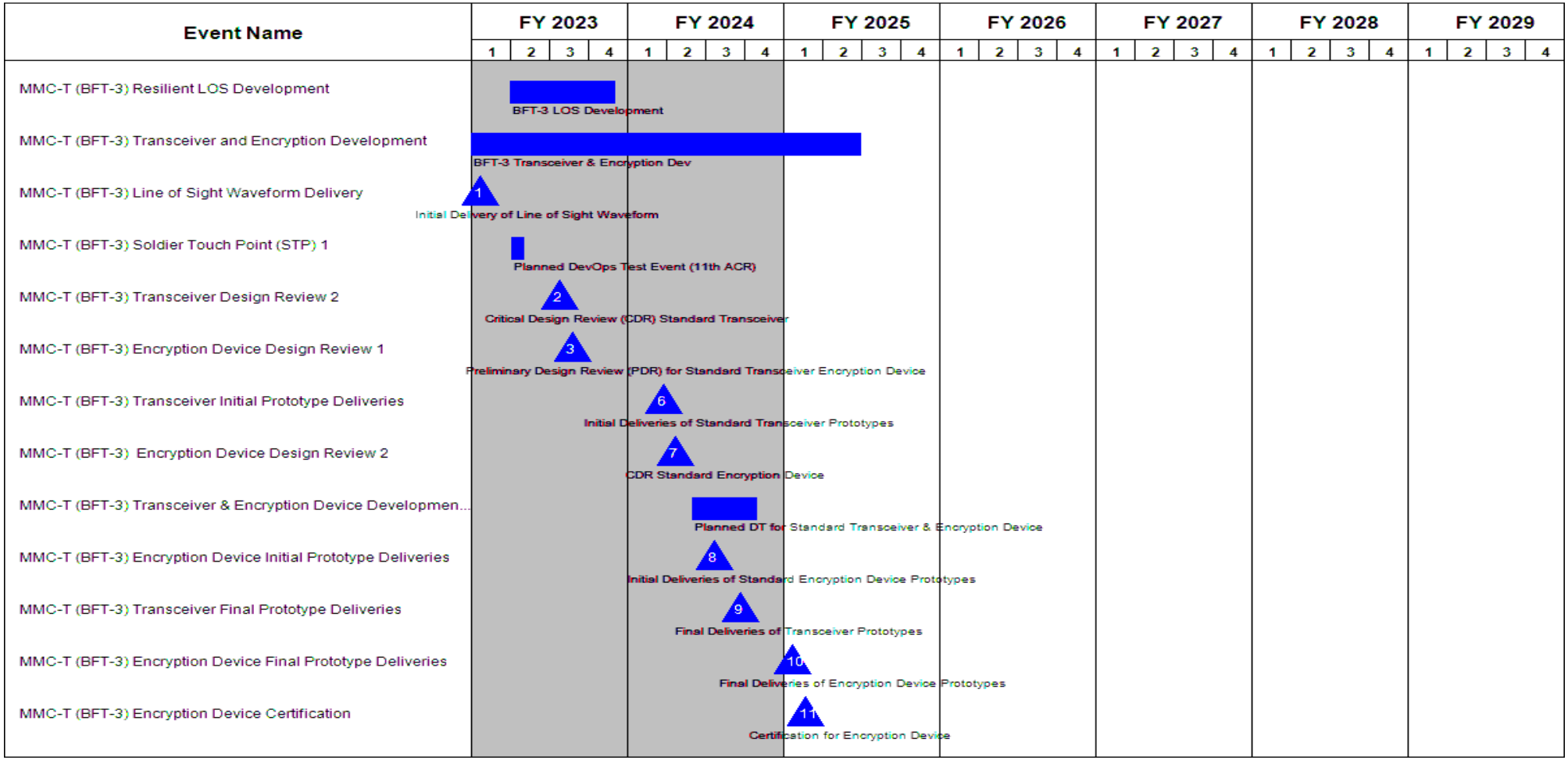


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

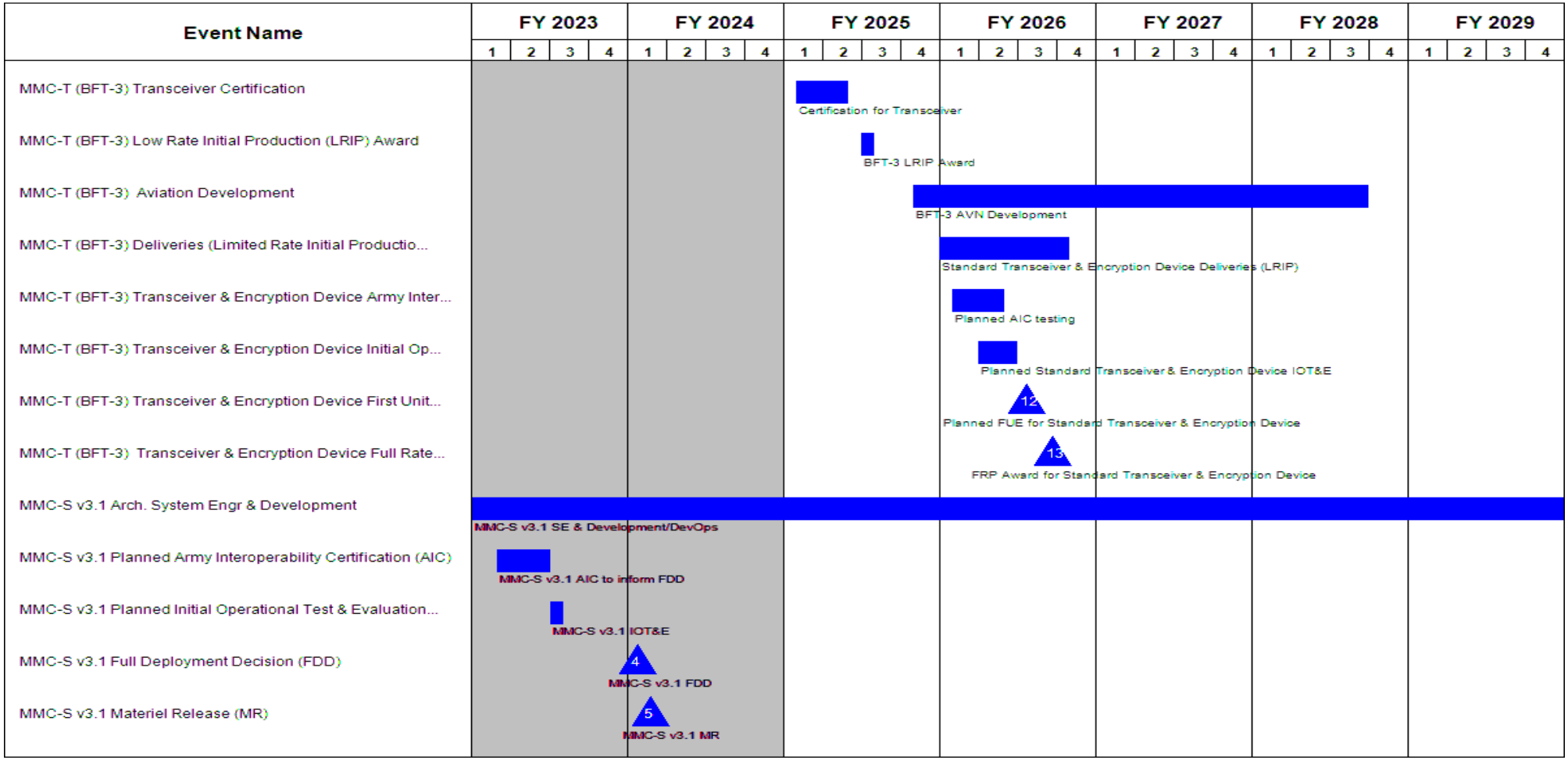


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

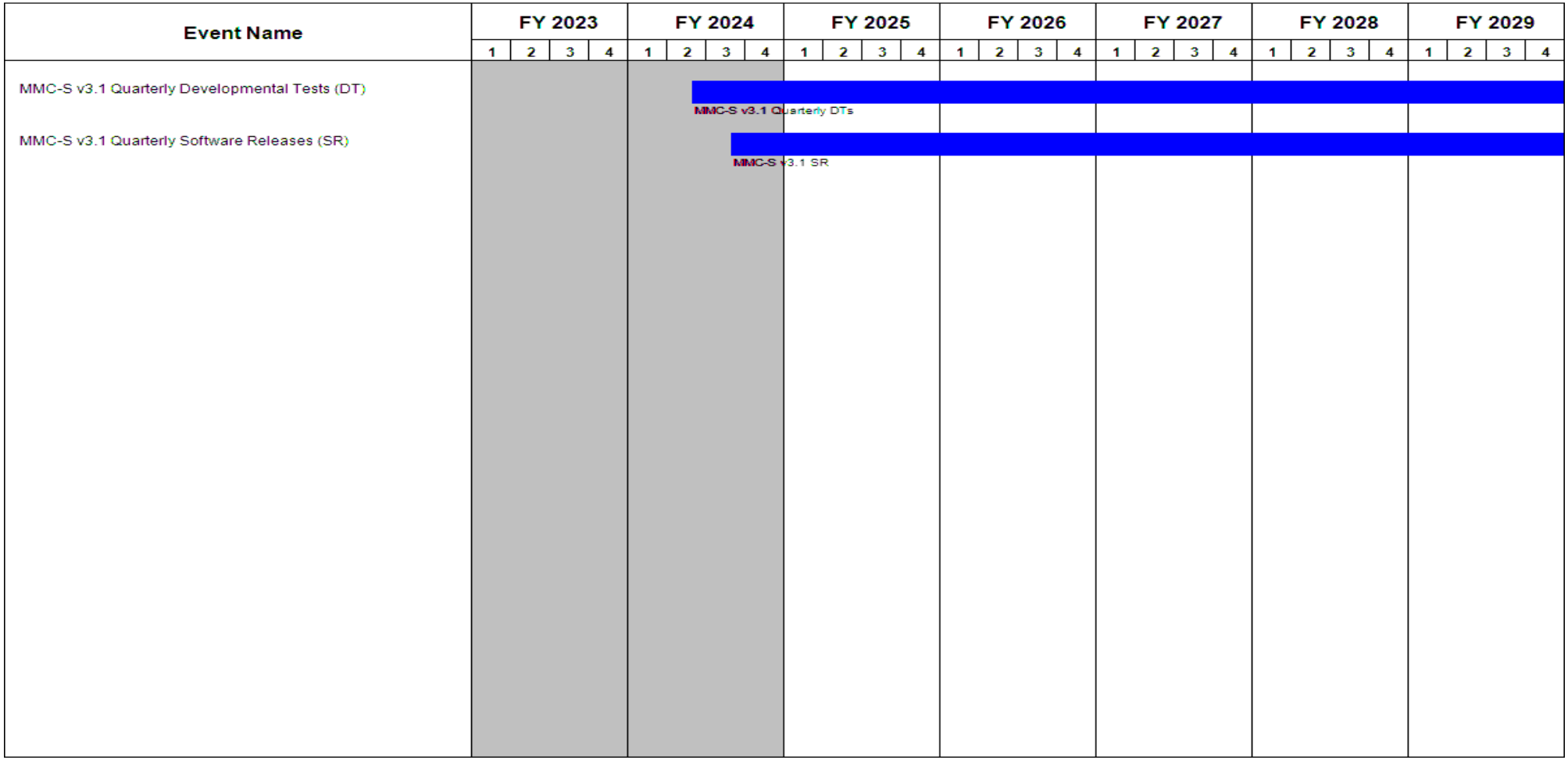


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MMC-T (BFT-3) Systems Engineering Development and Consortium	2	2017	4	2021
MMC-T (BFT-3) Developmental Testing (C5ISR Lab based)	1	2021	4	2021
MMC-T (BFT-3) Resilient Line of Sight (LOS) Contract Award	1	2022	1	2022
MMC-T (BFT-3) Resilient LOS Development	1	2022	4	2023
MMC-T (BFT-3) Transceiver Request for Prototype Proposal (RPP)	2	2022	2	2022
MMC-T (BFT-3) Encryption Device RPP	2	2022	2	2022
MMC-T (BFT-3) Transceiver & Encryption Device Contract Awards	3	2022	4	2022
MMC-T (BFT-3) Transceiver and Encryption Development	3	2022	2	2025
MMC-T (BFT-3) Transceiver & Encryption Developmental Testing (C5ISR Lab based) 2	3	2022	4	2022
MMC-T (BFT-3) Transceiver Design Review 1	4	2022	4	2022
MMC-T (BFT-3) Line of Sight Waveform Delivery	1	2023	1	2023
MMC-T (BFT-3) Soldier Touch Point (STP) 1	2	2023	2	2023
MMC-T (BFT-3) Transceiver Design Review 2	3	2023	3	2023
MMC-T (BFT-3) Encryption Device Design Review 1	3	2023	3	2023
MMC-T (BFT-3) Transceiver Initial Prototype Deliveries	1	2024	1	2024
MMC-T (BFT-3) Encryption Device Design Review 2	2	2024	2	2024
MMC-T (BFT-3) Transceiver & Encryption Device Developmental Test (DT)	2	2024	4	2024
MMC-T (BFT-3) Encryption Device Initial Prototype Deliveries	3	2024	3	2024
MMC-T (BFT-3) Transceiver Final Prototype Deliveries	3	2024	3	2024
MMC-T (BFT-3) Encryption Device Final Prototype Deliveries	1	2025	1	2025
MMC-T (BFT-3) Encryption Device Certification	1	2025	1	2025
MMC-T (BFT-3) Transceiver Certification	1	2025	2	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** 593 / *Joint Battle Command - Platform (JBC-P)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MMC-T (BFT-3) Low Rate Initial Production (LRIP) Award	3	2025	3	2025
MMC-T (BFT-3) Aviation Development	4	2025	3	2028
MMC-T (BFT-3) Deliveries (Limited Rate Initial Production (LRIP))	1	2026	4	2026
MMC-T (BFT-3) Transceiver & Encryption Device Army Interoperability Cert (AIC)	1	2026	2	2026
MMC-T (BFT-3) Transceiver & Encryption Device Initial Operational Test & Eval	2	2026	2	2026
MMC-T (BFT-3) Transceiver & Encryption Device First Unit Equipped (FUE)	3	2026	3	2026
MMC-T (BFT-3) Transceiver & Encryption Device Full Rate Production (FRP) Award	3	2026	3	2026
MMC-S v3.1 Arch. System Engr & Development	1	2021	4	2029
MMC-S v3.1 Planned Army Interoperability Certification (AIC)	1	2023	2	2023
MMC-S v3.1 Planned Initial Operational Test & Evaluation (IOT&E)	3	2023	3	2023
MMC-S v3.1 Full Deployment Decision (FDD)	1	2024	1	2024
MMC-S v3.1 Materiel Release (MR)	1	2024	1	2024
MMC-S v3.1 Quarterly Developmental Tests (DT)	2	2024	4	2029
MMC-S v3.1 Quarterly Software Releases (SR)	3	2024	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) DH4 / *CMOSS Mounted Form Factor (CMFF) Radio Cards*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
DH4: *CMOSS Mounted Form Factor (CMFF) Radio Cards*	-	-	-	21.802	-	21.802	-	-	-	-	0.000	21.802
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

CMOSS Mounted Form Factor (CMFF) Radio Cards is a new start within the Command, Control, Communications Systems - Eng Dev program in FY 2025.

A. Mission Description and Budget Item Justification

Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Modular Open Suite of Standards (CMOSS) Mounted Form Factor (CMFF) delivers Software Defined Radio (SDR) cards, Cryptographic Subsystem (CSS) cards, and Digital Radio Heads (DRH) required by the CMOSS Mounted Form Factor (CMFF) Abbreviated Capability Development Document (A-CDD) for the Ground and Aviation's tactical communication requirements. CMFF provides simultaneous transmission and reception of multiple waveforms across multiple channels in a single or multiple SDR card(s) integrated in the CMFF chassis with NSA certifiable CSS and interoperable with the Digital Radio Head. CMFF will introduce a Blocking Strategy roadmap. Block 1 starts with TSM and future blocks will build upon Block 1; Block 2 adds Single Channel Ground and Airborne Radio System (SINCGARS), Air Traffic Control (ATC), Warrior Robust Enhanced Network Tactical Scalable MANET (WREN TSM), initial Cryptographic Subsystem Card (CSS), and Digital Radio Head (DRH); Block 3 adds Mobile User Objective System (MUOS), Link-16, Second generation Anti-jam Tactical UHF Radio for NATO (SATURN), Demand Assigned Multiple Access (DAMA) and final CSS and DRH.

FY 2025 funds in the amount of $21.802 million supports Program Management Support (Matrix and SETA), Hardware and Software Development (SDR card, CSS card and Digital Radiohead), and Test and Evaluation (Crypto MOD and PIF).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Program Management Support	-	-	1.909
Description: 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 CMFF development effort.			
FY 2025 Plans: FY 2025 Research Development Test & Evaluation (RDT&E) funds Matrix Systems Engineering support from the Combat Capabilities Development Command (CCDC) Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center to assist with the CMFF development effort.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** DH4 / *CMOSS Mounted Form Factor (CMFF) Radio Cards*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Increase from FY24 to FY25 is due to new start/first year of funding.			
Title: Product Development ***Description:*** Funds hardware and software development CMFF radio cards, cryptographic subsystem (CSS) cards, and digital radio head. ***FY 2025 Plans:*** FY 2025 Research Development Test & Evaluation (RDT&E) funding will provide technical systems engineering support for Block 2 ground Hardware & Software development of the SDR card, CSS card, and Digital Radiohead. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY24 to FY25 is due to new start/first year of funding.	-	-	19.628
Title: Test and Evaluation ***Description:*** CMFF's Test and Evaluation focuses on Hardware and Software development of the Software Defined Radio (SDR) cards, Cryptographic Subsystem cards (CSS), and digital radioheads (DRH) in support of ground tactical communications requirements. ***FY 2025 Plans:*** FY 2025 Research Development Test & Evaluation (RDT&E) funding supports CMFF Block 2 integration, testing, and evaluation of the Software Defined Radio (SDR) cards, Cryptographic Subsystem (CSS) cards, Digital Radio Heads and support from the Crypto Mod lab, Open Innovation Lab (OIL), and Prototype Integration Facility (PIF). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY24 to FY25 is due to new start/first year of funding.	-	-	0.265
Accomplishments/Planned Programs Subtotals	-	-	21.802

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Combined Middle-tier acquisition (MTA) - Rapid Prototyping (RP)

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) DH4 / *CMOSS Mounted Form Factor (CMFF) Radio Cards*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Managment Support	TBD	TBD : TBD	-	-		-		1.909		-		1.909	0.000	1.909	-
		Subtotal	-	-		-		1.909		-		1.909	0.000	1.909	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	TBD	TBD : TBD	-	-		-		11.038		-		11.038	0.000	11.038	-
Software Development	TBD	TBD : TBD	-	-		-		8.590		-		8.590	0.000	8.590	-
		Subtotal	-	-		-		19.628		-		19.628	0.000	19.628	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation - Crypto Mod and PIF	TBD	TBD : TBD	-	-		-		0.265		-		0.265	0.000	0.265	-
		Subtotal	-	-		-		0.265		-		0.265	0.000	0.265	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		21.802		-		21.802	0.000	21.802	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** DH4 / *CMOSS Mounted Form Factor (CMFF) Radio Cards*

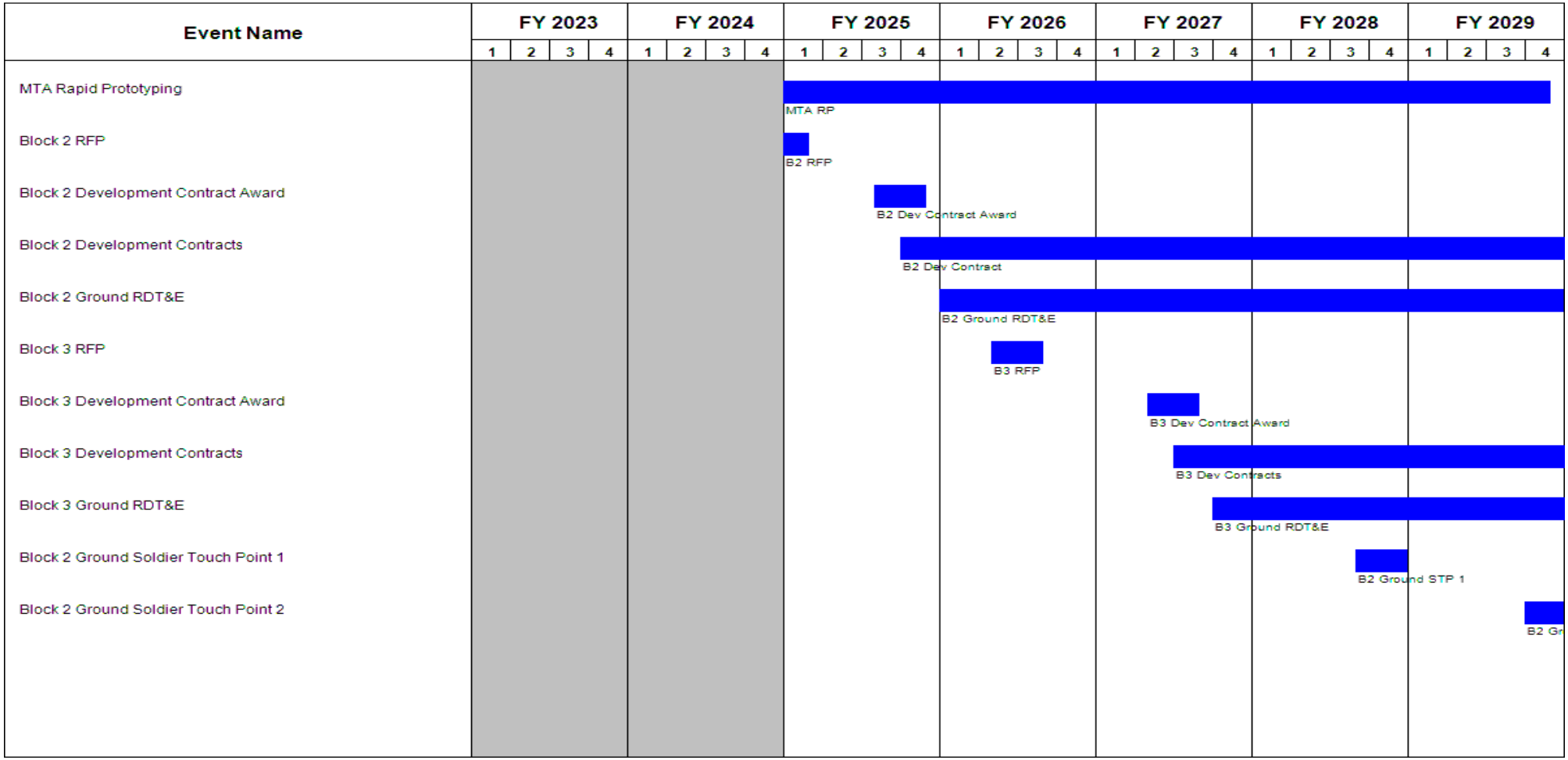


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** DH4 / *CMOSS Mounted Form Factor (CMFF) Radio Cards*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MTA Rapid Prototyping	1	2025	4	2029
Block 2 RFP	1	2025	1	2025
Block 2 Development Contract Award	3	2025	4	2025
Block 2 Development Contracts	4	2025	1	2030
Block 2 Ground RDT&E	1	2026	4	2029
Block 3 RFP	2	2026	3	2026
Block 3 Development Contract Award	2	2027	3	2027
Block 3 Development Contracts	3	2027	1	2032
Block 3 Ground RDT&E	4	2027	4	2031
Block 2 Ground Soldier Touch Point 1	3	2028	4	2028
Block 2 Ground Soldier Touch Point 2	4	2029	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) DH5 / *CMOSS Mounted Form Factor (CMFF) Chassis*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
DH5: *CMOSS Mounted Form Factor (CMFF) Chassis*	-	-	-	37.384	-	37.384	8.648	7.646	6.644	6.644	0.000	66.966
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

CMOSS Mounted Form Factor (CMFF) Chassis is a new start within the Command, Control, Communications Systems - Eng Dev program in FY 2025.

A. Mission Description and Budget Item Justification

Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Modular Open Suite of Standards (CMOSS) is a defined suite of open architecture and Army standards that facilitate the reduction of system size, weight, and power-cooling (SWaP-C) and ensure commonality across multiple vehicles and platforms. Sharing of hardware and software components is enabled within the CMFF Mounted Common Infrastructure (MCI) Chassis. CMFF will help move the implementation of C5ISR/Electronic Warfare (C5ISR/EW) capabilities away from costly and complex separate "stove-piped boxes" on individual platforms. The use of open standards will make it simpler and more cost-effective to upgrade capabilities and/or keep pace with commercial technology by eliminating complex integration challenges and proprietary interfaces. The CMFF capability can only be realized when paired with the development of associated circuit cards assemblies (CCA) for integration into the chassis and peripheral enabling devices, such as antennae and appropriate user interfaces. Other programs are responsible for funding and developing the CCAs and peripheral devices; the CMFF MCI Chassis program is responsible for chassis development, system of system integration of CCAs and external resources into the chassis and platform integration.

FY 2025 funding in the amount of $37.384 million will provide for CMFF MCI Chassis hardware and software development, vehicle and platform integration and prototype manufacturing for the chassis.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: CMFF - Product Development	-	-	33.274
Description: Hardware and software development and prototype manufacturing of the CMFF Mounted Common Infrastructure (MCI) Chassis, system of system integration of payloads and external resources, platform integration and final product development for ground and aviation platforms.			
FY 2025 Plans: Funding supports a multi-vendor OTA award, including prototyping, hardware and software development, and lab-asset procurement for experimentation on ground platforms and technical studies and maturation on aviation platforms.			
FY 2024 to FY 2025 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** DH5 / *CMOSS Mounted Form Factor (CMFF) Chassis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
CMFF is a new start program in FY 2025.			
Title: CMFF - Test and Evaluation ***Description:*** Test, evaluation and assessment activities for the CMFF MCI Chassis to support prototyping, development and procurement. ***FY 2025 Plans:*** Funding supports the kickoff of National Security Agency (NSA) evaluation and the initiation of environmental and safety testing activities for CMFF MCI Chassis Block 1. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** CMFF is a new start program in FY 2025.	-	-	0.379
Title: CMFF - Program Management Support ***Description:*** Matrix and Contractor Personnel Support, including technical, logistics, and business staff that provide expertise and support for CMFF MCI Chassis program activities. ***FY 2025 Plans:*** Funding provides the development, systems engineering, technical and business Matrix and Contractor personnel to support the CMFF MCI Chassis program efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** CMFF is a new start program in FY 2025.	-	-	3.731
Accomplishments/Planned Programs Subtotals	-	-	37.384

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The CMOSS Mounted Form Factor (CMFF) Mounted Common Infrastructure (MCI) Chassis program responds to Army requirements in the approved CMFF Abbreviated Capability Development Document (A-CDD), validated on 4 January 2021. A new start in FY 2025, the program will seek Middle Tier of Acquisition (MTA) Rapid Prototyping (RP) program initiation in 1QFY2025. The MTA RP effort spans the initial five years of the program and will prototype the chassis and software that manages the operation of the chassis, as well as integrate the circuit cards assemblies (CCA) that hold the payload capabilities and assure the integrated solution operates as required. (The CCAs host communications, situational awareness, and positioning, navigating, and timing (PNT) capabilities that will be provided by external programs).

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** DH5 / *CMOSS Mounted Form Factor (CMFF) Chassis*

The project will converge the payload capabilities into a single CMOSS compliant form factor (chassis) mounted on selected military ground and air platforms that can be demonstrated in a relevant operational environment; meeting current systems performance parameters and facilitate legacy and emerging capabilities.

The CMFF MCI Chassis MTA RP program will execute development in two blocks, focusing initially on light tracked and wheeled vehicles (Block 1) and then the integrated and firing platforms (Block 2). Development of Block 3 (remaining vehicle types and Future Vertical Lift platforms) will occur following the initial MTA RP program.

Intent is to engage industry for the availability of commercial-off-the-shelf chassis. Market research indicates sufficient interest and availability to support competition. Other Transaction Authorities will be utilized to prototype the chassis and operating system software.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) DH5 / *CMOSS Mounted Form Factor (CMFF) Chassis*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMFF - Program Management Support	MIPR	TBD : APG, MD	-	-		-		3.731		-		3.731	0.000	3.731	-
		Subtotal	-	-		-		3.731		-		3.731	0.000	3.731	N/A

Remarks

CMFF is a new start program in FY 2025.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMFF - Product Development - Ground	TBD	TBD : TBD	-	-		-		26.914		-		26.914	0.000	26.914	-
CMFF - Product Development - Aviation	TBD	TBD : TBD	-	-		-		6.360		-		6.360	0.000	6.360	-
		Subtotal	-	-		-		33.274		-		33.274	0.000	33.274	N/A

Remarks

CMFF is a new start program in FY 2025.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMFF - Test and Evaluation - Ground	MIPR	TBD : TBD	-	-		-		0.379		-		0.379	0.000	0.379	-
		Subtotal	-	-		-		0.379		-		0.379	0.000	0.379	N/A

Remarks

CMFF is a new start program in FY 2025.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	Project (Number/Name) DH5 / *CMOSS Mounted Form Factor (CMFF) Chassis*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		37.384		-		37.384	0.000	37.384	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** DH5 / *CMOSS Mounted Form Factor (CMFF) Chassis*

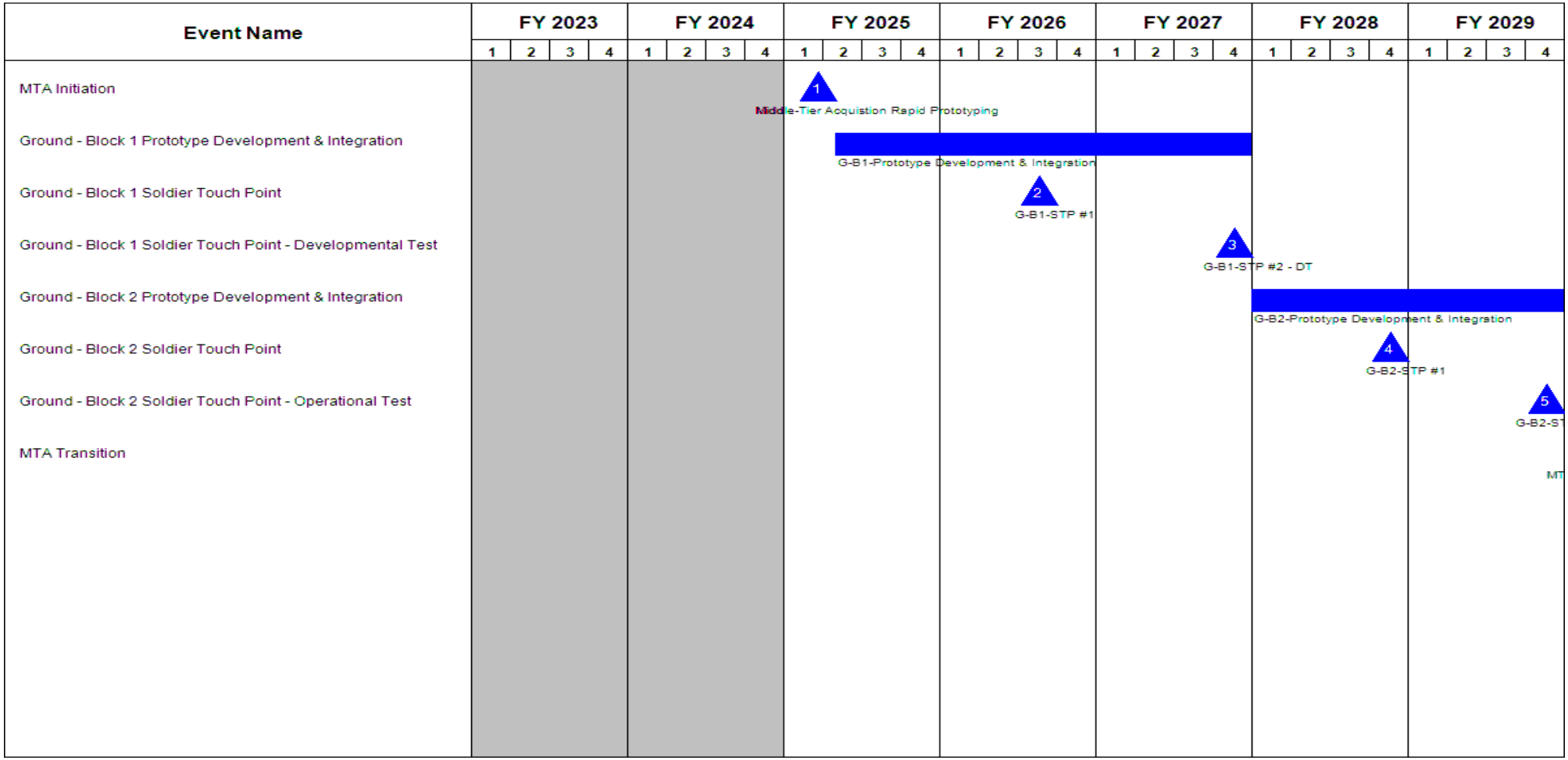


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604805A / *Command, Control, Communications Systems - Eng Dev*	**Project (Number/Name)** DH5 / *CMOSS Mounted Form Factor (CMFF) Chassis*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MTA Initiation	1	2025	1	2025
Ground - Block 1 Prototype Development & Integration	2	2025	4	2027
Ground - Block 1 Soldier Touch Point	3	2026	3	2026
Ground - Block 1 Soldier Touch Point - Developmental Test	4	2027	4	2027
Ground - Block 2 Prototype Development & Integration	1	2028	4	2029
Ground - Block 2 Soldier Touch Point	4	2028	4	2028
Ground - Block 2 Soldier Touch Point - Operational Test	4	2029	4	2029
MTA Transition	1	2030	1	2030

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604807A *I Medical Materiel/Medical Biological Defense Equipment - Eng Dev*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	25.035	6.496	7.143	-	7.143	6.566	6.633	6.707	6.772	0.000	65.352
832: *Field Medical Systems Engineering Development*	-	25.035	6.496	7.143	-	7.143	6.566	6.633	6.707	6.772	0.000	65.352

A. Mission Description and Budget Item Justification

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

Projects in this PE include the following:

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

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	5.513	6.496	7.516	-	7.516
Current President's Budget	25.035	6.496	7.143	-	7.143
Total Adjustments	19.522	0.000	-0.373	-	-0.373
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	19.650	-			
• SBIR/STTR Transfer	-0.128	-			
• Adjustments to Budget Years	-	-	-0.373	-	-0.373

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 832: *Field Medical Systems Engineering Development*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604807A *I Medical Materiel/Medical Biological Defense Equipment - Eng Dev*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add: *Program Increase - Pre-Exposure Prophylaxis for Acute Radiation Syndrome (Prep ARS) - Medical Countermeasure (MCM)*	20.000	-
Congressional Add Subtotals for Project: 832	20.000	-
Congressional Add Totals for all Projects	20.000	-

Change Summary Explanation

Decrease in funding due to a reduction in civilian requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 832 / *Field Medical Systems Engineering Development*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
832: *Field Medical Systems Engineering Development*	-	25.035	6.496	7.143	-	7.143	6.566	6.633	6.707	6.772	0.000	65.352
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Field Medical Systems Engineering Development - Medical Readiness	5.035	6.496	7.143
Description: Funding is provided for engineering and manufacturing development of medical products for diagnostic devices and testing of medical devices for use in the field.			
FY 2024 Plans: Medical Device Prototype Development and Testing (formerly Modernization of medical equipment sets): Will continue to provide rapid prototype design; fabrication; evaluation and testing; and fixes for medical and medical support products, components and systems as well as harden commercial products for use in a field environment used to sustain and support the Warfighter. Will continue to conduct Developmental Test and Evaluation (DT&E) as required by Army and DoD regulations, consisting of Environmental T&E IAW Mil-STD-810G; Performance Verification Testing; and Competitive Analysis. Airworthiness Testing: Will continue testing both developmental and commercial carry-on medical equipment destined for use aboard Army aircraft required by AR 70-62, for Medical Equipment Set and Mission Essential Package with products. Medical Health Applications: Transitioned some more advanced applications from 6.4 - 836 to 832. Will finalize Independent Verification and Validation, Cyber Security Assessments, and Operational Assessments of performance optimization decision aid(s) for Soldier environmental exposure data collection; Clinical Practice Guidelines (CPGs) to maintain proficiency and expertise while deployed; and optimizes Soldier cold weather clothing ensemble.			
FY 2025 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Medical Device Prototype Development and Testing: Will continue to provide rapid prototype design; fabrication; evaluation and testing; and fixes for medical and medical support products, components and systems as well as harden commercial products for use in a field environment used to sustain and support the Warfighter. Will continue to conduct Developmental Test and Evaluation (DT&E) as required by Army and DoD regulations, consisting of Environmental T&E IAW Mil-STD-810G; Performance Verification Testing; and Competitive Analysis. Medical Field Systems Advanced Development (MFS AD): Begin transitioning of DMMS from Program Element 0603807A / Project 836 (Field Medical Systems Advanced Development) to 832 (Field Medical Systems Engineering Development) within program element 0604807A. Development and testing CASEVAC kit for the NGCV. Will perform air worthiness testing for both developmental and commercial carry-on medical equipment destined for use aboard Army aircraft required by AR 70-62, for Medical Equipment Set and Mission Essential Package with products. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The increase of funding in FY25 is due to requirements for Division Medical Mobile Shelter (DMMS) and NGCV CASEVAC.			
Accomplishments/Planned Programs Subtotals	5.035	6.496	7.143

	FY 2023	FY 2024
Congressional Add: Program Increase - Pre-Exposure Prophylaxis for Acute Radiation Syndrome (Prep ARS) - Medical Countermeasure (MCM) ***FY 2023 Accomplishments:*** Develop a pre-exposure prophylactic medical countermeasure that will protect at risk-service members from life threatening effects of ionizing radiation. Awarded contract to Humanetics Corporation for the development of an oral suspension of BIO 300 (genistein). Initiated manufacturing of three registration batches of the active pharmaceutical ingredient (API). Initiated analytical method development activities.	20.000	-
Congressional Adds Subtotals	20.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Management Services Cost	Various	Various : Various	63.598	1.708		3.299		2.519		-		2.519	Continuing	Continuing	Continuing
Prep ARS - MCM	TBD	TBD : TBD	-	0.501		-		-		-		-	0.000	0.501	-
		Subtotal	63.598	2.209		3.299		2.519		-		2.519	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Product Development Cost	Various	Various : Various	13.587	1.631		0.652		0.826		-		0.826	Continuing	Continuing	Continuing
Prep ARS - MCM Development	TBD	Humanetics Corporation : TBD	-	19.499		-		-		-		-	0.000	19.499	-
		Subtotal	13.587	21.130		0.652		0.826		-		0.826	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Medical Device Prototype Development and Testing	Various	Various : Various	16.519	-		0.106		0.145		-		0.145	Continuing	Continuing	Continuing
Medical Field Systems Advanced Development (MFS AD)	TBD	Various : Various	4.808	1.696		1.783		3.653		-		3.653	0.000	11.940	-
Medical Health Applications	TBD	Various : Various	-	-		0.656		-		-		-	0.000	0.656	-
		Subtotal	21.327	1.696		2.545		3.798		-		3.798	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	Project (Number/Name) 832 / *Field Medical Systems Engineering Development*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	98.512	25.035		6.496		7.143		-		7.143	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

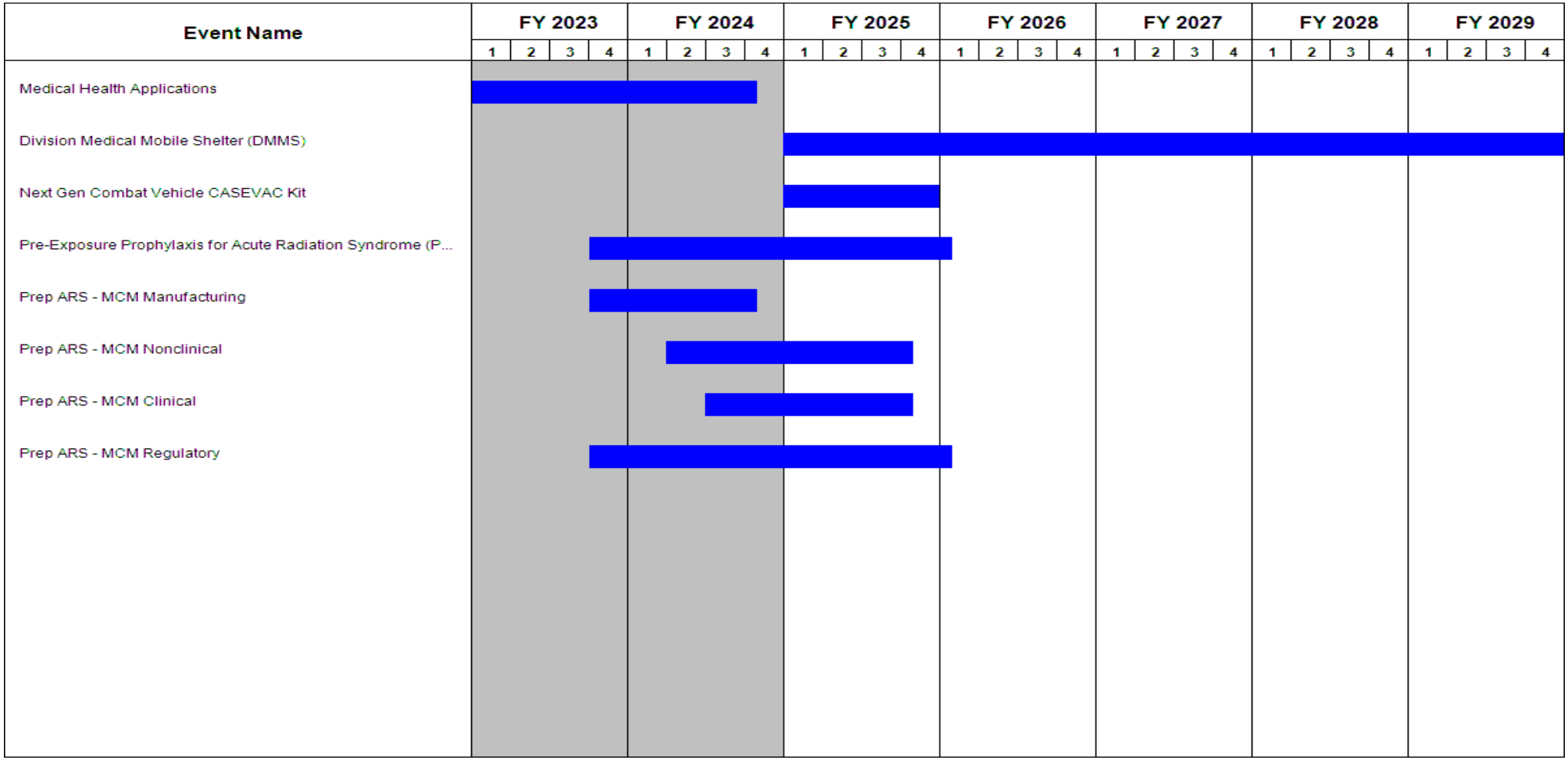


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604807A / *Medical Materiel/Medical Biological Defense Equipment - Eng Dev*	**Project (Number/Name)** 832 / *Field Medical Systems Engineering Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Medical Health Applications	1	2023	4	2024
Division Medical Mobile Shelter (DMMS)	1	2025	4	2029
Next Gen Combat Vehicle CASEVAC Kit	1	2025	4	2025
Pre-Exposure Prophylaxis for Acute Radiation Syndrome (Prep ARS) - Medical Countermeasure (MCM) Award	4	2023	1	2026
Prep ARS - MCM Manufacturing	4	2023	4	2024
Prep ARS - MCM Nonclinical	2	2024	4	2025
Prep ARS - MCM Clinical	3	2024	4	2025
Prep ARS - MCM Regulatory	4	2023	1	2026

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604808A *I Landmine Warfare/Barrier - Eng Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	36.707	13.581	19.134	-	19.134	9.345	1.916	1.938	1.957	Continuing	Continuing
016: *Close Combat Capabilities ENG DEV*	-	34.635	11.160	16.914	-	16.914	7.448	-	-	-	Continuing	Continuing
CS2: *Render Safe Sets Kits and Outfits (RS-SKO)*	-	0.989	1.008	2.220	-	2.220	1.897	1.916	1.938	1.957	0.000	11.925
CS3: *Next Generation Advanced Bomb Suit (NGABS)*	-	1.083	1.413	-	-	-	-	-	-	-	0.000	2.496

A. Mission Description and Budget Item Justification

This Program Element (PE) provides for the Engineering and Manufacturing Development (EMD) and demonstration of networked munitions, countermine systems, Explosive Ordnance Disposal (EOD) render safe, and counter improvised explosive device capabilities. This PE also implements the National Landmine Policy to develop alternatives to the non-self-destructing counter mobility anti-personnel landmine systems. The PE contributes to anti access and area denial (A2/AD) to support unified land operations and improve soldier survivability.

Project 016: Close Combat Capabilities, covers three programs: Next Generation Advanced Bomb Suit (NGABS), Explosive Ordnance Disposal Render Safe (EOD RS) and Enhanced Robotics Payload - Render Safe (ERP-RS). It provides for the Engineering and Manufacturing Development (EMD) and demonstration of capabilities needed for Explosive Ordnance Disposal. Explosive Ordnance Disposal Render Safe (EOD RS) provides for the Engineering and Manufacturing Development (EMD) and demonstration of capabilities needed for Explosive Ordnance Disposal (EOD) teams to Render Safe (RS) US and foreign ordnance and improvised explosive devices, enabling ground force commanders to retain freedom of maneuver and secure lines of communications in multi-domain operations (MDO). Technical refresh of capabilities ensures Army 2030 formations maintain overmatch capability. EOD RS-SKO equips EOD teams with low light visual augmentation system, electronic countermeasures, subsurface explosive and hazard detection, dismounted X-ray imager, X-ray generator, trace explosive, Chemical, Biological, Radiological, and Nuclear (CBRN), and drug detection, unmanned aerial system, power management, gamma and neutron search and detection, and render safe initiation. This project will continue to support cross-service initiatives to increase commonality among information reporting and control systems. Enhanced Robotics Payload - Render Safe is a suite of modular capabilities to provide an increased level of standoff, disruption capability, and dexterity to respond to current and emergent EOD, CBRN and Engineer requirements. The Tech Effects program is in response to Army priorities and guidance to support identified gaps for Army passive defense requirements. Tech Effects executes research, development, test, and evaluation (RDT&E) on passive defense capabilities, next generation devices, and technologies to support Army's ability to meet current and emerging requirements. Tech Effects integrates RDT&E prototypes with component programs for acquisition, sustainment and maintenance.

NGABS will increase the Warfighter lethality and mobility by optimizing Soldier protection for EOD personnel, while effectively managing all life cycle aspects of Personal Protective Equipment (PPE). Warfighter lethality is increased through bomb suit weight reduction utilizing extensive investments in protective material research and development. The result is material solutions that are lighter and are pieced together in a manner which increases Soldier mobility and longevity. EOD Soldier

situational awareness and exposure to ballistic threats is enhanced through the NGABS HUD which allows the Soldier increased visibility under various obscurants and low/no-light situations.

Enhanced Robotics Payload - Render Safe (ERP-RS) will enable EOD teams to access, render safe, and dispose of explosive ordnances (EO) while removing Soldiers from the direct effects of explosive blast and fragmentation. ERP-RS consists of three modules that will mount on existing Host Unmanned Ground Vehicles (HUGVs) in EOD units: (1) Highly Dexterous Manipulation System that has increased lift capacity and dexterity over current manipulators, using dual arm manipulation, will contribute to access, render safe, and disposal of sensitive EO, (2) a Multi-Shot Disruptor Module that provides remote selectable and precise disruption of surface laid or suspended EO, and (3) a Precision Aim module to provide accurate disruption of surface laid or suspended EO with the Multi-Shot Disrupter Module. These ERP-RS capabilities will provide a level of access, render safe, and disposal of EO that would currently require a Soldier to expose themselves to explosive hazards.

Project CS2: Explosive Ordnance Disposal Render Safe - Sets Kits and Outfits (EOD RS-SKO) provides for the demonstration and evaluation of emerging technologies within requirements trade-space and capabilities needed for Explosive Ordnance Disposal (EOD) teams to Render Safe (RS) US and foreign ordnance and improvised explosive devices, enabling ground force commanders to retain freedom of maneuver and secure lines of communications in multi-domain operations (MDO). Technical refresh of capabilities ensures Army 2030 formations maintain overmatch capability. EOD RS-SKO equips EOD teams with low light visual augmentation system, electronic countermeasures, subsurface explosive and hazard detection, dismounted X-ray imager, X-ray generator, trace explosive, Chemical, Biological, Radiological, and Nuclear (CBRN), and drug detection, unmanned aerial system, power management, gamma and neutron search and detection, and render safe initiation. This project will continue to support cross-service initiatives to increase commonality among information reporting and control systems.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	37.150	13.581	23.729	-	23.729
Current President's Budget	36.707	13.581	19.134	-	19.134
Total Adjustments	-0.443	0.000	-4.595	-	-4.595
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.443	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-4.595	-	-4.595

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: 016: *Close Combat Capabilities ENG DEV*		
Congressional Add: *Congressional Add: Prototype Integration*	25.000	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604808A *I Landmine Warfare/Barrier - Eng Dev*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Congressional Add Subtotals for Project: 016	25.000	-
Congressional Add Totals for all Projects	25.000	-

Change Summary Explanation

Project 016: $4.876 million decrease in funding to support Explosive Ordnance Disposal capabilities (Close Combat Capabilities ENG DEV).
Project CS2: $0.281 million increase in funding to support for the demonstration and evaluation of emerging technologies for Explosive Ordnance Disposal Render Safe - Sets Kits and Outfits (EOD RS-SKO)

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*				Project (Number/Name) 016 / *Close Combat Capabilities ENG DEV*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
016: *Close Combat Capabilities ENG DEV*	-	34.635	11.160	16.914	-	16.914	7.448	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 016 Close Combat Capabilities, covers multiple programs: Next Generation Advanced Bomb Suit (NGABS) and Enhanced Robotics Payload - Render Safe (ERP-RS).

NGABS directly contributes to Soldier lethality and ground force commander freedom of maneuver by providing next generation sensor and optics in the cutting-edge Heads-Up-Display (HUD) while integrating the Government's latest investments in protective material for the modular, scalable NGABS bomb suit development. NGABS will increase the Warfighter survivability and mobility by optimizing Soldier protection for EOD personnel, while effectively managing all life cycle aspects of Personal Protective Equipment (PPE). Warfighter lethality is increased through bomb suit weight reduction utilizing extensive investments in protective material research and development. The result is material solutions that are lighter and are pieced together in a manner which increases Soldier mobility and longevity. EOD Soldier situational awareness and exposure to ballistic threats is enhanced through the NGABS HUD which allows the Soldier increased visibility under various obscurants and low/no-light situations. Funds were transferred from APE 0604808016 to APE 0604808CS3 to clearly define the functions that are being completed with the NGABS funding line.

Enhanced Robotics Payload - Render Safe (ERP-RS) will enable EOD teams to access, render safe, and dispose of explosive ordnances (EO) while removing Soldiers from the direct effects of explosive blast and fragmentation. ERP-RS consists of three modules that will mount on existing Host Unmanned Ground Vehicles (HUGVs) in EOD units: (1) Highly Dexterous Manipulation System that has increased lift capacity and dexterity over current manipulators, using dual arm manipulation, will contribute to access, render safe, and disposal of sensitive EO, (2) a Multi-Shot Disruptor Module that provides remote selectable and precise disruption of surface laid or suspended EO, and (3) a Precision Aim module to provide accurate disruption of surface laid or suspended EO with the Multi-Shot Disrupter Module. These ERP-RS capabilities will provide a level of access, render safe, and disposal of EO that would currently require a Soldier to expose themselves to explosive hazards.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025**
Title: Prototype Integration for Multi-Domain Operations	9.635	3.566	-
Description: Integrating prototype efforts to support force protection and signature management related to critical mission threads, operational constructs (Multi-Domain Operations) and key weapon system including responding to impending Army requirements. Effort will support capability and capacity to meet Army strategic guidance in support of the National Defense Strategy and other related Army efforts. The Tech Effects program is in response to Army priorities and guidance to support identified gaps for Army passive defense requirements. Tech Effects executes research, development, test, and evaluation (RDT&E) on passive defense capabilities,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
next generation devices, and technologies to support Army's ability to meet current and emerging requirements. Tech Effects integrates RDT&E prototypes with component programs for acquisition, sustainment and maintenance. ***FY 2024 Plans:*** Will research and prototype singular and hybrid signature management capabilities to meet Army guidance. Will test and evaluate previously developed prototypes within realistic operational environments. Will coordinate current and future priorities with Joint Staff J8, HQDA G/3/5/7 and TRADOC/CAC on investment pathways for technology development, insertion and/or integration. Will integrate best practices, technical innovations, and development pathways with key stakeholders across Joint Staff, Army, and other Service elements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding decrease due to budget line item restructure in order to protect Army interests.			
Title: Enhanced Robotics Payload - Render Safe (ERP-RS) ***Description:*** Develop a suite of three modular capabilities to provide an increased level of standoff, disruption capability, and dexterity to respond to current and emergent EOD, Chemical, Biological, Radiological and Nuclear (CBRN), and Engineer requirements. ***FY 2024 Plans:*** FY 2024 funding will be used to enter Milestone B to create integrated prototype within the Engineering and Manufacturing Development phase. Program will award contracts to continue development of the precision aim module and the multi-shot disruptor module for Phase 1 development to support force protection and provide the Warfighter with safe, standoff detection, and render safe capabilities against Explosive Ordinance. Program will also begin a competitive source selection effort for the Highly Dexterous Manipulation System. ***FY 2025 Plans:*** FY2025 funding will support the continued Phase 1 development of the precision aim module and multi-shot disruptor. The program will perform Phase 1 development testing. Documentation and preparations for Phase 1 Milestone C will begin. The program also plans to award the Phase 2 contract to develop the highly dexterous manipulation system. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The program increase is caused by the start of Phase 1 development testing, which requires procurement of prototype hardware. The award for a Phase 2 development contract also contributes to the increase.	-	7.594	16.914
Accomplishments/Planned Programs Subtotals	9.635	11.160	16.914

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

	FY 2023	FY 2024
Congressional Add: Congressional Add: Prototype Integration	25.000	-
FY 2023 Accomplishments: FY2023 Congressional Add funding will provide research, development, test, evaluation, support, and procurement of information operations related technology and activities.		
Congressional Adds Subtotals	25.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Next Generation Advanced Bomb Suit (NGABS) Program utilizes a competitive, developmental, innovative and efficient Other Transaction Authority (OTA) in EMD through the Fort Belvoir Sensor Communication and Electronic Consortium (SCEC) which will result in a production ready prototype leading to a Production and Deployment (PD) phase for full capability while ensuring best value to the Army. Milestone (MS) B / Material Development Decision (MDD) occurred in FY 2018 and MS C is scheduled for FY 2022.

The Multi-Domain Operations (MDO) program utilizes existing government contract vehicles to integrate prototype efforts to support force protection and signature management related to critical mission threads, operational constructs and key weapons systems.

The Enhanced Robotics Payload - Render Safe (ERP-RS) will utilize government contracts to integrate technologies and test competitive prototypes of the Precision Aim Module and Multi-Shot Disruptor Module in Phase 1. Government contracts are anticipated for the integration and test of the High Dexterous Manipulation System Module in Phase 2. The Phase 2 contracts allow for further assessment and understanding of performance and integration challenges of competitive prototypes. Government contracts will be utilized for the production and deployment of each module. Initial first article test samples will undergo an operational assessment prior to full production.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 016 / *Close Combat Capabilities ENG DEV*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ERP RS Development Contract	C/CPFF	Various : Various	-	-		6.624	Mar 2024	11.379	Jan 2025	-		11.379	0.000	18.003	-
ERP-RS Precision Aim Module Development	MIPR	DEVCOM Armaments Center : Picatinny, NJ	-	-		-		1.225	Dec 2024	-		1.225	0.000	1.225	-
Prototype Integration for Multi-Domain Opertions	TBD	TBD : TBD	21.230	9.635	May 2023	3.566	Jan 2024	-		-		-	0.000	34.431	Continuing
Prototype Integration for Multi-Domain Operations - Cong Add	Option/ IDIQ	Huntsville Alabama : Huntsville AL	30.000	25.000	May 2023	-		-		-		-	0.000	55.000	-
		Subtotal	51.230	34.635		10.190		12.604		-		12.604	0.000	108.659	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ERP RS Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	-	-		0.670	Oct 2023	1.553	Oct 2024	-		1.553	Continuing	Continuing	-
		Subtotal	-	-		0.670		1.553		-		1.553	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ERP RS Modeling and Simulation (M&S)	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	-	-		0.300	Jun 2024	0.781	Nov 2024	-		0.781	Continuing	Continuing	-
ERP RS Performance Testing	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	-	-		-		1.976	Jan 2025	-		1.976	Continuing	Continuing	-
		Subtotal	-	-		0.300		2.757		-		2.757	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) 016 / *Close Combat Capabilities ENG DEV*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	51.230	34.635		11.160		16.914		-		16.914	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

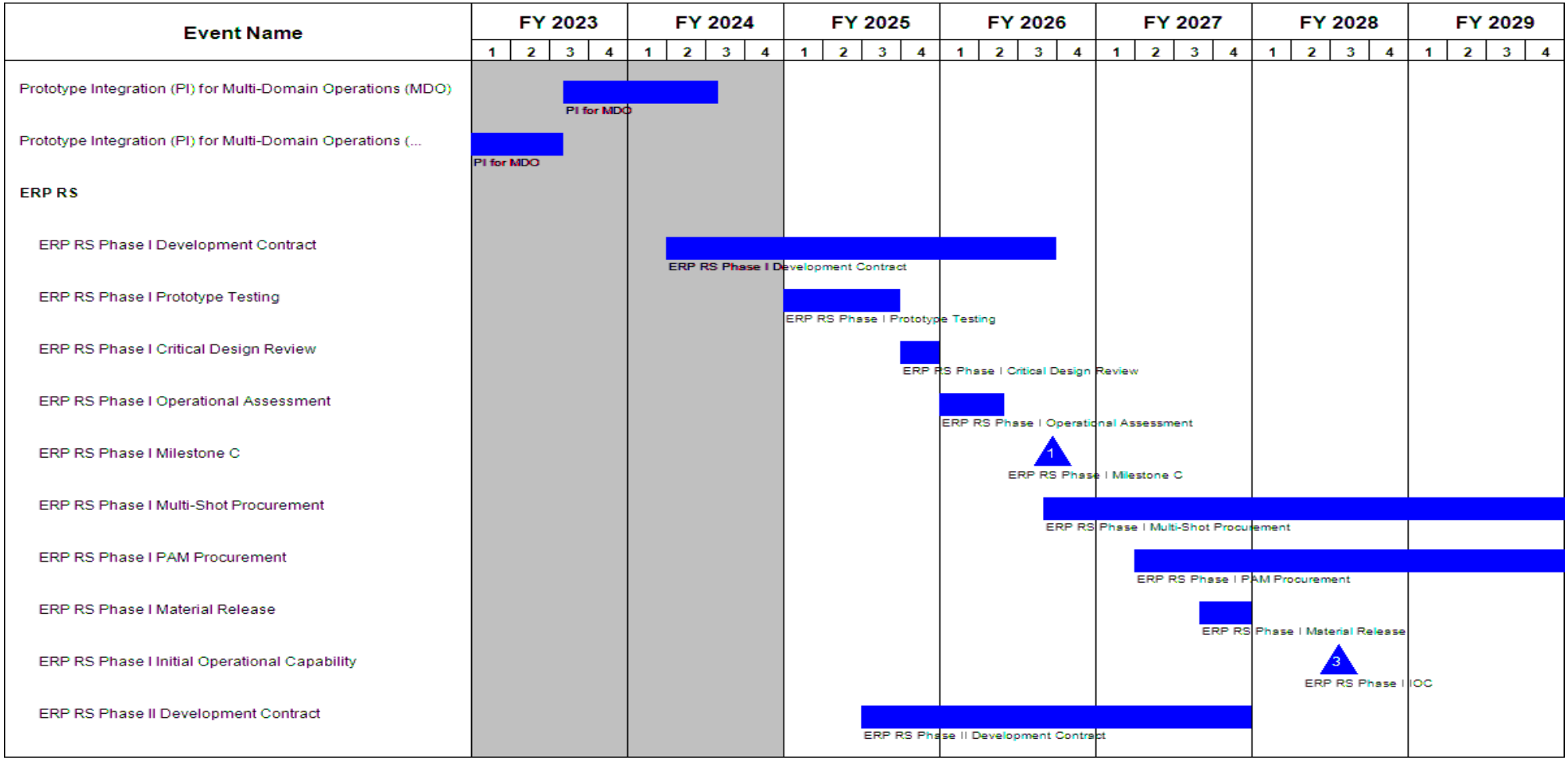


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

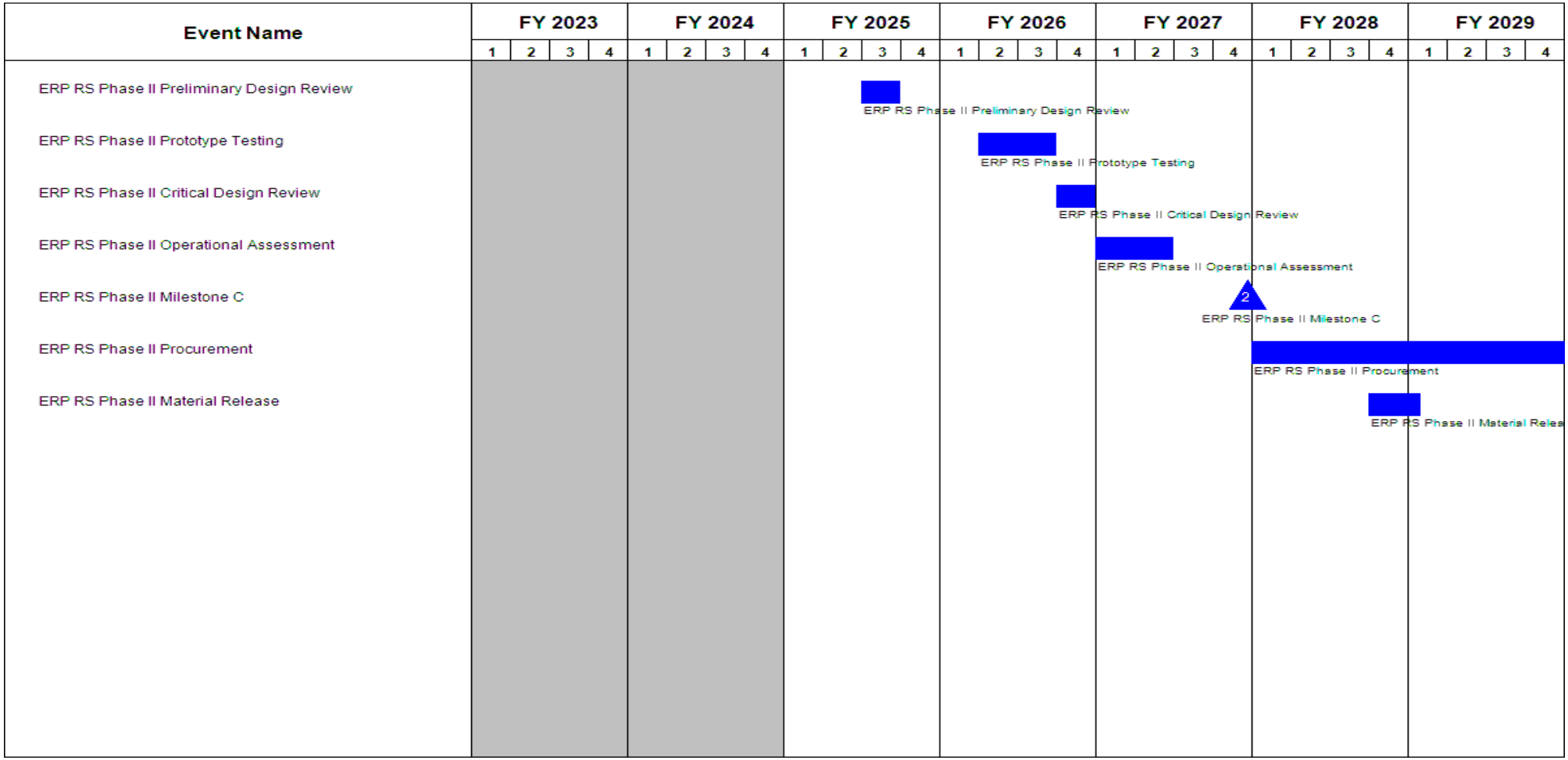


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Next Generation Advanced Bomb Suit (NGABS)	1	2017	4	2022
NGABS Materiel Development Decision (MDD)	2	2018	2	2018
NGABS OTA phase 1 (suit, sensors, HUD PDR/CDR)	4	2019	2	2020
NGABS OTA phase 2 (sensor, HUD CDR, suit HFE)	2	2020	4	2020
NGABS OTA phase 3 (integration, developmental test)	4	2020	3	2021
NGABS Support Contract	1	2022	1	2022
Prototype Integration (PI) for Multi-Domain Operations (MDO)	3	2023	3	2024
Prototype Integration (PI) for Multi-Domain Operations (MDO) - Cong Add	3	2022	3	2023
ERP RS	1	2025	4	2026
ERP RS Phase I Development Contract	2	2024	3	2026
ERP RS Phase I Prototype Testing	1	2025	3	2025
ERP RS Phase I Critical Design Review	4	2025	4	2025
ERP RS Phase I Operational Assessment	1	2026	2	2026
ERP RS Phase I Milestone C	3	2026	3	2026
ERP RS Phase I Multi-Shot Procurement	3	2026	1	2030
ERP RS Phase I PAM Procurement	2	2027	1	2031
ERP RS Phase I Material Release	3	2027	4	2027
ERP RS Phase I Initial Operational Capability	3	2028	3	2028
ERP RS Phase I Full Operational Capability	2	2030	2	2030
ERP RS Phase II Development Contract	3	2025	4	2027
ERP RS Phase II Preliminary Design Review	3	2025	3	2025
ERP RS Phase II Prototype Testing	2	2026	3	2026

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** 016 / *Close Combat Capabilities ENG DEV*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ERP RS Phase II Critical Design Review	4	2026	4	2026
ERP RS Phase II Operational Assessment	1	2027	2	2027
ERP RS Phase II Milestone C	4	2027	4	2027
ERP RS Phase II Procurement	1	2028	4	2033
ERP RS Phase II Material Release	4	2028	1	2029
ERP RS Phase II Initial Operational Capability	2	2030	2	2030
ERP RS Phase II Full Operational Capability	4	2033	4	2033

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) CS2 / *Render Safe Sets Kits and Outfits (RS-SKO)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CS2: *Render Safe Sets Kits and Outfits (RS-SKO)*	-	0.989	1.008	2.220	-	2.220	1.897	1.916	1.938	1.957	0.000	11.925
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project CS2: Explosive Ordnance Disposal Render Safe - Sets Kits and Outfits (EOD RS-SKO) provides for the demonstration and evaluation of emerging technologies within requirements trade-space and capabilities needed for Explosive Ordnance Disposal (EOD) teams to Render Safe (RS) US and foreign ordnance and improvised explosive devices, enabling ground force commanders to retain freedom of maneuver and secure lines of communications in multi-domain operations (MDO). Technical refresh of capabilities ensures Army 2030 formations maintain overmatch capability. EOD RS-SKO equips EOD teams with low light visual augmentation system, electronic countermeasures, subsurface explosive and hazard detection, dismounted X-ray imager, X-ray generator, trace explosive, Chemical, Biological, Radiological, and Nuclear (CBRN), and drug detection, unmanned aerial system, power management, gamma and neutron search and detection, and render safe initiation. This project will continue to support cross-service initiatives to increase commonality among information reporting and control systems. FY2025 request will continue to support the yearly review of capabilities for tech refresh needs focusing on the threat overmatch or technology obsolescence of the fielded equipment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Explosive Ordnance Disposal (EOD) Render Safe (RS)	0.989	1.008	2.220
FY 2024 Plans: FY 2024 funding will support the tech refresh of the RS SKO capabilities to ensure Army 2030 formations maintain overmatch capability, address technology obsolescence and assess solutions to provide increased effectiveness of the RS SKO components by focusing on objective space requirements.			
FY 2025 Plans: FY 2025 funding will continue to support the tech refresh of the RS SKO capabilities to ensure Army 2030 formations maintain overmatch capability, address technology obsolescence, and assess solutions to provide increased effectiveness of the RS SKO components by focusing on objective space requirements. Software/firmware upgrades will be implemented, and troubleshooting will be conducted for dismounted electronic countermeasure system to maintain threat overmatch capability.			
FY 2024 to FY 2025 Increase/Decrease Statement: Increase for software/firmware upgrade implementation which will require rewriting and validation of electronic countermeasure loadset software and for dismounted electronic countermeasure system troubleshooting.			
Accomplishments/Planned Programs Subtotals	0.989	1.008	2.220

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** CS2 / *Render Safe Sets Kits and Outfits (RS-SKO)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• R63701: *Render Safe Sets Kits Outfits*	-	-	16.440	-	16.440	10.374	12.357	12.368	16.781	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Explosive Ordnance Disposal (EOD) Render Safe (RS) program utilizes existing government contract vehicles to acquire RS SKO Kits. C5ISR and DEVCOM AC to acquire modified COTS items for test and evaluation. C5ISR engineers provide support for all RS SKO electronic countermeasure (ECM) components such as the MODI and AN PLT4 and newly developed AN PLT-6v1. DEVCOM AC provides engineering support to the remaining RS SKO components and legacy EOD. Both C5ISR and DEVCOM will continue to meet with vendors to stay informed on the latest technologies for the EOD community. The program will continue to use the existing government contract vehicles for the production and deployment phase as well as to continue the development of capabilities during the 5-phase technical refresh.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) CS2 / *Render Safe Sets Kits and Outfits (RS-SKO)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EOD-RS Evaluation Hardware	TBD	TBD : TBD	-	-		-		0.475	Mar 2025	-		0.475	Continuing	Continuing	-
Operator Control Unit Redesign/Miniaturization	MIPR	C5ISR : Fort Belvoir, VA	-	0.116	Dec 2022	-		-		-		-	0.000	0.116	-
Requirements Review and Conceptual Design	C/CPFF	SAVIT : Picatinny Arsenal, NJ	-	0.215	Dec 2022	-		-		-		-	0.000	0.215	-
		Subtotal	-	0.331		-		0.475		-		0.475	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EOD RS - Engineering Support	MIPR	DEVCOM C5ISR Center : Aberdeen Proving Ground (APG), MD	0.078	-		0.200	Nov 2023	1.070	Nov 2024	-		1.070	Continuing	Continuing	-
EOD-RS - Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	0.300	0.658	Aug 2023	0.684	Nov 2023	0.565	Nov 2024	-		0.565	Continuing	Continuing	-
		Subtotal	0.378	0.658		0.884		1.635		-		1.635	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EOD- RS Test & Evaluation	MIPR	ATEC - Yuma Test Center : Yuma, AZ	-	-		0.124	Jul 2024	0.110	May 2025	-		0.110	Continuing	Continuing	-
		Subtotal	-	-		0.124		0.110		-		0.110	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) CS2 / *Render Safe Sets Kits and Outfits (RS-SKO)*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.378	0.989		1.008		2.220		-		2.220	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** CS2 / *Render Safe Sets Kits and Outfits (RS-SKO)*

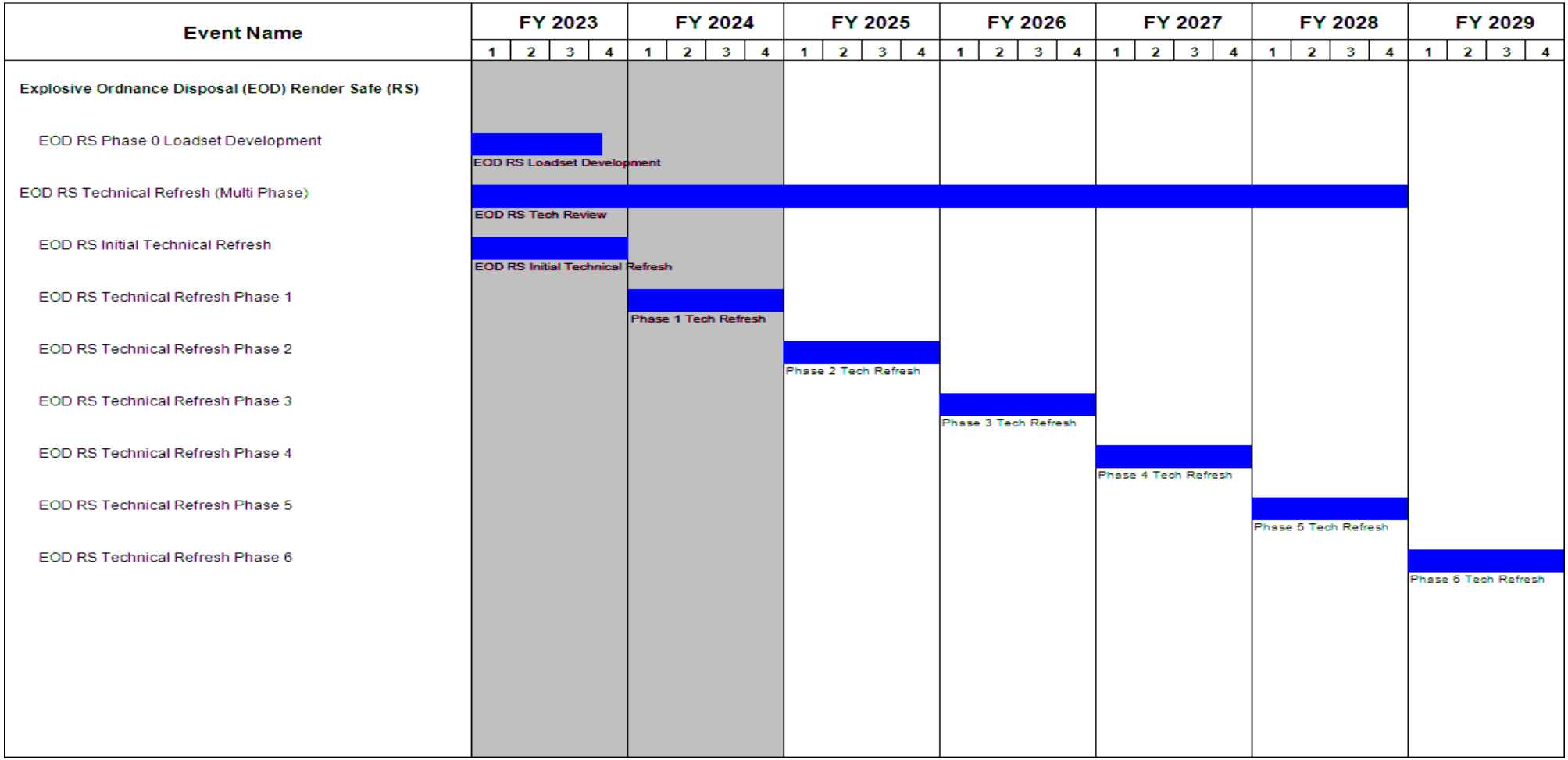


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** CS2 / *Render Safe Sets Kits and Outfits (RS-SKO)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Explosive Ordnance Disposal (EOD) Render Safe (RS)	1	2020	4	2025
EOD RS Phase 0 Market Survey	4	2020	4	2020
EOD RS Phase 0 Development Contracts	4	2020	3	2021
EOD RS Phase 0 Prototype Testing	2	2021	1	2022
EOD RS Phase 0 ECM Preliminary Design Review	4	2021	4	2021
EOD RS Phase 0 Solution Down Selecting	1	2022	1	2022
EOD RS Phase 0 Loadset Development	2	2022	4	2023
EOD RS Phase 0 ECM Final Prototype Design Build	2	2022	4	2022
EOD RS Phase 0 ECM Test and Evaluation	3	2022	4	2022
EOD RS Phase 0 Critical Design Review	4	2022	4	2022
EOD RS Technical Refresh (Multi Phase)	1	2023	4	2028
EOD RS Initial Technical Refresh	1	2023	4	2023
EOD RS Technical Refresh Phase 1	1	2024	4	2024
EOD RS Technical Refresh Phase 2	1	2025	4	2025
EOD RS Technical Refresh Phase 3	1	2026	4	2026
EOD RS Technical Refresh Phase 4	1	2027	4	2027
EOD RS Technical Refresh Phase 5	1	2028	4	2028
EOD RS Technical Refresh Phase 6	1	2029	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) CS3 / *Next Generation Advanced Bomb Suit (NGABS)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
CS3: *Next Generation Advanced Bomb Suit (NGABS)*	-	1.083	1.413	-	-	-	-	-	-	-	0.000	2.496
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding in this project supports the Soldier Lethality Cross Functional Team (CFT).

The NGABS program directly contributes to Soldier lethality and ground force commander freedom of maneuver by providing next generation sensor and optics in the cutting-edge Heads-Up-Display (HUD) while integrating the Government's latest investments in protective material for the modular, scalable NGABS bomb suit development. NGABS will increase the Warfighter survivability and mobility by optimizing Soldier protection for EOD personnel, while effectively managing all life cycle aspects of Personal Protective Equipment (PPE). Warfighter lethality is increased through bomb suit weight reduction utilizing extensive investments in protective material research and development. The result is material solutions that are lighter and are pieced together in a manner which increases Soldier mobility and longevity. EOD Soldier situational awareness and exposure to ballistic threats is enhanced through the NGABS HUD which allows the Soldier increased visibility under various obscurants and low/no-light situations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Next Generation Advanced Bomb Suit (NGABS)	1.083	1.413	-
Description: The objective of this effort is to increase the Warfighter lethality, modularity, and mobility, by optimizing Soldier protection and situational awareness for EOD personnel. The mission of this program is to enhance the tactical utility and applicability of this bomb suit concept by incorporating modularity/scalability and sensor technologies that are non-existent in legacy designs. This new, tailorable, full body protective system will provide a significantly increased capability at a reduced weight. ***FY 2024 Plans:*** The NGABS program will continue Pre Planned Product Improvement (P3I) that will focus on improving situational awareness and reduce head/neck borne weight that can be on-ramped onto the NGABS production contract. For improving situational awareness, the NGABS program will continue to upgrade and improve the daylight camera, and to upgrade to smaller and higher resolution sensors. For reducing the head/neck borne weight the NGABS program will explore approaches to shift the weight of the NGABS helmet, to include all components, from the head/neck to the shoulders and/or hips. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decreased funding reflects planned lifecycle of the effort and no requirement in FY25.			
Accomplishments/Planned Programs Subtotals	1.083	1.413	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** CS3 / *Next Generation Advanced Bomb Suit (NGABS)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OMA - 121017000: *Central Issue Facilities/Initial Issue: Organizational Clothing and Equip*	-	17.205	0.000	-	0.000	-	-	-	-	0.000	17.205

Remarks

D. Acquisition Strategy

The Next Generation Advanced Bomb Suit (NGABS) Program utilizes a competitive, developmental, innovative and efficient Other Transaction Authority (OTA) in EMD through the Fort Belvoir Sensor Communication and Electronic Consortium (SCEC) which will result in a production ready prototype leading to a Production and Deployment (PD) phase for full capability while ensuring best value to the Army.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	Project (Number/Name) CS3 / *Next Generation Advanced Bomb Suit (NGABS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	PdM SPE : Fort Belvoir	-	0.256		0.303		-		-		-	0.000	0.559	Continuing
		Subtotal	-	0.256		0.303		-		-		-	0.000	0.559	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGABS - Production Prototype Development	C/FFP	TBD : Manufacturing Techniques Inc. (MTEQ), Lorton, VA	1.009	0.684		0.981		-		-		-	0.000	2.674	Continuing
		Subtotal	1.009	0.684		0.981		-		-		-	0.000	2.674	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGABS Test & Evaluation	Allot	TBD : Various	0.158	0.143		0.129		-		-		-	0.000	0.430	Continuing
		Subtotal	0.158	0.143		0.129		-		-		-	0.000	0.430	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.167	1.083		1.413		-		-		-	0.000	3.663	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** CS3 / *Next Generation Advanced Bomb Suit (NGABS)*

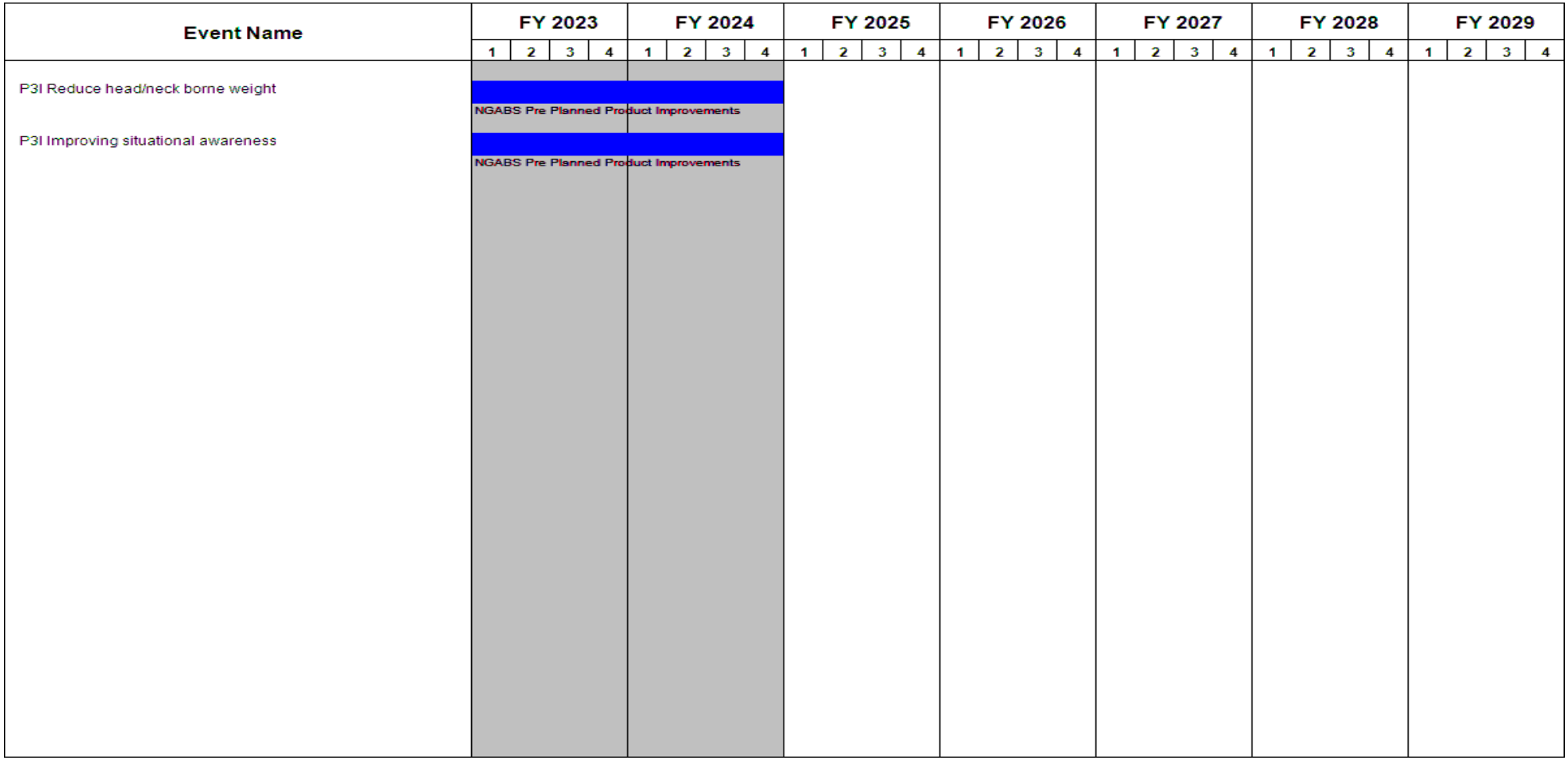


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604808A / *Landmine Warfare/Barrier - Eng Dev*	**Project (Number/Name)** CS3 / *Next Generation Advanced Bomb Suit (NGABS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
P3I Reduce head/neck borne weight	1	2023	4	2024
P3I Improving situational awareness	1	2023	4	2024

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604818A *I Army Tactical Command & Control Hardware & Software*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	128.240	168.574	165.229	-	165.229	105.971	106.960	95.450	93.743	Continuing	Continuing
323: *Common Hardware Systems*	-	4.934	4.630	5.036	-	5.036	5.043	5.096	5.153	5.204	Continuing	Continuing
C29: *Centralized Technical Support Facility (CTSF)*	-	8.910	4.380	4.373	-	4.373	4.478	4.580	4.631	4.677	Continuing	Continuing
C34: *Army Tac C2 Sys Eng*	-	40.433	11.141	11.177	-	11.177	11.190	11.310	11.436	11.550	Continuing	Continuing
DD1: *Unified Network Technology Trans & Integ (UNTTI)*	-	-	7.898	13.203	-	13.203	14.537	12.960	10.420	7.906	Continuing	Continuing
DK3: *Sensor Computing Environment (SCE)*	-	-	-	2.392	-	2.392	-	-	-	-	0.000	2.392
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	26.973	45.489	27.064	-	27.064	27.096	27.385	27.691	27.967	Continuing	Continuing
EJ6: *TACTICAL ENHANCEMENT*	-	-	9.040	-	-	-	-	-	-	-	0.000	9.040
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	3.276	49.577	86.642	-	86.642	25.504	26.032	26.692	26.958	0.000	244.681
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	5.105	7.549	10.332	-	10.332	13.113	14.587	5.419	5.473	Continuing	Continuing
ER9: *Expeditionary Army Command Post*	-	25.314	28.870	5.010	-	5.010	5.010	5.010	4.008	4.008	0.000	77.230
EW3: *Unit Task Reorganization (UTR) Development*	-	13.295	-	-	-	-	-	-	-	-	Continuing	Continuing

Note

Project DK3 / Sensor Computing Environment (SCE) is a new start within the Army Tactical Command & Control Hardware & Software program in FY 2025

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I Army Tactical Command & Control Hardware & Software*

Project EK9, Tactical Network Operations Management funding increased from $49.577 million in FY 2024 to $86.642 million in FY 2025. The increased funding supports acceleration of Unified Network Operations (UNO) Upper-Tier Tactical (UTT) Requirements Definition Package (RDP) requirements, which defines the UNO software capabilities for tactical users at Brigade (BDE) and above echelons. UNO UTT capabilities will extend software development, testing and evaluation, to include soldier engagements, to deliver the planning, management, monitoring, configuring, and securing of the network. UNO UTT will also incorporate enhanced features for Artificial Intelligence (AI) and Machine Learning (ML).

A. Mission Description and Budget Item Justification

Project 323, Common Hardware Systems (CHS) is a mandated Army Strategic Source, as annotated in AR 25-1 that acquires and sustains highly flexible, cost-effective, and simplified non-developmental solutions that integrate the latest and emerging commercial information technology onto the Converged Mission Command Network. This funding line also supports network solution procurement and sustainment for U.S. Army Reserves, U.S. Army National Guard, U.S. Navy, U.S. Air Force, U.S. Marine Corps, and other Federal agencies.

Project C29, the Central Technical Support Facility (CTSF), is the Army's single strategic facility responsible for executing Army Interoperability Certification (AIC) system of system verification/validation checkout, testing, and configuration management for the Army's LandWarNet Baseline. The Centralized Technical Support Facility (CTSF) funding line supports the Army's Network Modernization Strategy Line of Effort LOE 1B Network Enabling Functions.

Project C34, the Army Tac C2 Sys Eng project funds the PEO Command, Control, Communications-Tactical (PEO C3T) System of Systems engineering, Enterprise and Integration efforts. The system engineering efforts are to facilitate overall network interoperability of all the various programs that must be able to seamlessly connect together while addressing their individual distinct requirements. Efforts address continuing evolution of the network within the PEO C3T portfolio of technology across capability enhancement packages to deliver efficient and effective cross-domain technical solution.

Project DD1, Unified Network Technology Transition and Integration (UNTTI) is an RDT&E initiative enabling transport of agnostic, high-capacity and resilient tactical communications for expeditionary operations. UNTTI efforts support system/subsystem development and demonstration, aimed at integration, maturation, evaluation and testing to validate system prototypes meet requirements. In FY2025, the UNTTI efforts include Technical Exchange Meeting (TEM) Projects - Pathway Diversity, Line of Sight (LOS) - Command Post Networking, and Line of Sight Modernization. These technologies support new and improved capabilities with reduced Size, Weight, and Power, while increasing throughput, providing network resiliency and Low Probability of Intercept/Low Probability of Detection.

Project EJ4, the Command Post Computing Environment (CPCE) implements an integrated, interoperable, cyber-secure, software infrastructure that serves as the host for a unified set of multiple warfighting functional applications within the command post at echelons Battalion to Army Service Component Command (ASCC); eliminating "stove-piped" legacy systems, duplicative or redundant implementations, simplifying future application development efforts, and enhancing interoperability and data sharing across multiple echelons. CPCE software infrastructure and applications reside on the Tactical Services Infrastructure (TSI) hardware and BCCS/TSI servers previously fielded under the TMC/MCS program of record. CPCE/TSI provides the software and hardware infrastructure to host capabilities, such as movement and maneuver applications, network enabling tools (i.e. Tactical Defensive Cyber Operation Infrastructure), collaboration tools, and warfighting function applications. This software infrastructure provides the Army's Common Operating Picture (COP) solution, enabling interoperability between command posts, mounted platforms, and dismounted handheld devices while supporting collaboration with Joint and Unified Action partners. CPCE provides common look and feel (user interface), common data strategy, interoperable tactical messaging/ chat, and essential warfighting capabilities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I Army Tactical Command & Control Hardware & Software*

Project EJ6, this funding line is directly aligned to the Army Network Modernization Priority. Efforts are aligned to support the Army's capability set approach to achieve the network modernization strategy.
Troposcatter Transmission (TROPO): Tactical Enhancement supports the evaluation and testing requirements for TROPO capabilities procured and fielded under the Signal Modernization (SIGMOD) funding line, B00010. TROPO will provide redundancy communications in a Satellite denied environment by providing Beyond Line of Sight (BLOS) capability over longer ranges and at higher throughput than the current BLOS System. TROPO extends the network by utilizing a significantly reduced SWaP radio verses the current system. TROPO will enable Army units to reduce reliance on costly satellite bandwidth. STS: Tactical Enhancement supports the evaluation and testing requirements for Sustainment Transport System (STS) capabilities procured and fielded under the CSS Communications funding line, BD3501. STS is a data transport capability through satellite communications (SATCOM) and an integrated component of the Unified Network (UN) providing unclassified communications to US Army sustainment units in their support to the warfighter. STS provides network connectivity and enables a satellite communications pathway for logistics, financial management, personnel and health service support information to be exchanged on the battlefield across multiple echelons.

Project EK9, Tactical Network Operations Management (TNOM) supports development and testing of the Unified Network Operations (UNO). UNO is foundational to Army network modernization efforts that enhance network security, resiliency, and data exchange, and to the service's Unified Network (UN) vision - which integrates and converges enterprise and tactical networks. UNO is a series of integrated software-based solutions, designed to replace and consolidate existing Network Operations (NetOps) tools. UNO will provide a simple, user-friendly capability for planning, management, monitoring, configuring, and securing the network. UNO provides fully integrated Network and Enterprise Management Systems (NM/EM) and Identity, Credential, and Access Management (ICAM), an important tool in achieving a Zero Trust (ZT) environment. UNO management systems enable users to design and plan the network, which includes configuration, operation, and maintenance functions. The continuous and iterative software development approach for UNO fully integrates cybersecurity capabilities and information dissemination management / content sharing (IDM / CS), including Army ZT initiatives, to enable network mission command functions across the Enterprise and Tactical network environments.

The UNO Middle Tier Acquisition (MTA) Rapid Prototyping effort is $83.712 million RDT&E from FY 2019 - FY 2024. The remainder of the UNO MTA is fully funded across the Future Years Defense Program.

Unified Network Operations (UNO) is a signature modernization effort designed to support the Army of 2030 and 2040 network capabilities objectives. UNO software development will provide continuous development of unified network components to meet the Army's prioritization of desired capabilities.

Project EQ8, Mobile/Handheld Computing Environment (M/HHCE), is one of the six computing environments (CEs) formalized by the Army Acquisition Executive (AAE) under the Common Operating Environment (COE) initiative and supports the Nett Warrior (NW) also known as the Ground Soldier Systems (GSS) program. The program leverages commercial smart devices and secure Army tactical radios, Commercial 4G/LTE/WIFI and cloud-based infrastructure to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW hardware is the computational

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army	Date: March 2024
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604818A *I Army Tactical Command & Control Hardware & Software*

platform that other M/HHCE systems run their applications. The M/HHCE will provide incremental improvements with additional application capabilities over time, and will be interoperable with Command Post CE and Mounted CE systems.

Project ER9, Command Post Integrated Infrastructure (CPI2), fields mobile Command Post nodes by integrating mission command solutions into vehicle platforms and mounted shelter systems to enhance the survivability and mobility of command post formations. CPI2 will replace selected elements of the legacy command post to provide improved expeditionary capability, survivability, agility, and scalability for command post formations at all echelons. By integrating mission command warfighting functions on to vehicle platforms, a dispersed command post construct will enable the battle staff to blend in with the overall maneuver formation while giving the commander the ability to synchronize the close fight on the move.

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	131.190	168.574	103.953	-	103.953
Current President's Budget	128.240	168.574	165.229	-	165.229
Total Adjustments	-2.950	0.000	61.276	-	61.276
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.001	-			
• SBIR/STTR Transfer	-3.951	-			
• Adjustments to Budget Years	-	-	61.276	-	61.276

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2023	FY 2024
Project: C34: *Army Tac C2 Sys Eng*		
Congressional Add: *Red Team Automation and Zero Trust Capabilities*	23.000	-
Congressional Add: *Multi-Factor Authentication for Cyber Security*	6.000	-
Congressional Add Subtotals for Project: C34	29.000	-
Congressional Add Totals for all Projects	29.000	-

Change Summary Explanation

FY 2025 funds increased due to acceleration of Unified Network Operations (UNO) Upper-Tier Tactical (UTT) capabilities beginning in FY 2025.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 323 / *Common Hardware Systems*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
323: *Common Hardware Systems*	-	4.934	4.630	5.036	-	5.036	5.043	5.096	5.153	5.204	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Common Hardware Systems (CHS) is a mandated Army Strategic Source, as annotated in Army Regulation (AR) 25-1 Army Information Technology (IT) that acquires and sustains highly flexible, cost-effective, and simplified non-developmental solutions that integrate the latest and emerging commercial IT onto the Converged Mission Command Network. Efforts are aligned to support the Network Cross-Functional Team (CFT) capability set approach to achieve network modernization strategy goals. This funding line also supports network solution procurement and sustainment for U.S. Army Reserves, U.S. Army National Guard, U.S. Navy, U.S. Air Force, U.S. Marine Corps, and other Federal agencies.

CHS provides technical support, warranty support, system engineering and design, and end-of-life and configuration management services to ensure interoperability and integration of hardware throughout the computing infrastructure. CHS continuously analyzes and tracks hardware from cradle to grave; from emerging technology until end of life. The program conducts hardware evaluations that facilitate and simplify the selection of common hardware solutions across numerous Army programs, agencies, Joint Services, and other Federal Agencies including: Mission Command; Tactical Network; Tactical Radios; Intelligence Systems and Analytics; Aviation Systems; Counter-Rocket, Artillery, Mortar (C-RAM); Communication Electronics Command; Combat Capabilities Development Command (DEVCOM); Army National Guard and Reserves; Navy; Air Force; Marines; the Federal Bureau of Investigation; among others. CHS rapidly procures common hardware configurations in support of Army 2030/2040, the sustainment community, and tactical programs that enable continuous modernization. CHS logistical services include the ability to add worldwide, 24-hour turn-around repair through strategically located support centers for tactical military units. These support centers provide tailorable supply chain and cybersecurity measures, customizable warranty management, maintenance and failure rate reporting, and technical support services to support specific Army program requirements.

CHS is a model for modern acquisition strategy that strengthens the U.S. cybersecurity supply chain and manages risk by providing hardware solutions including servers, storage, clients, networking devices, tactical radios, ruggedized platforms, hand-held end devices, operational transit cases, installation kits, and peripheral devices procured from a mix of small and large businesses. CHS partners with the CECOM Integrated Logistics Support Center (ILSC) to develop a model for sustaining Commercial Off The Shelf (COTS) IT using the Standard Army Supply System.

CHS supports Better Buying Power (BBP) initiatives by through volume discounting, economies of scale, the elimination of duplication of effort, reduced barriers to entry, price breaks, streamlined processes, reduced cycle times, and centralized contracting.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Acquisition Support	2.809	2.885	2.953

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Funding is provided for acquisition support for the following effort. ***FY 2024 Plans:*** Acquisition support for CHS and customer programs. CHS rapidly procures common hardware configurations across all four Network Modernization Lines of Effort, Capability Sets, and Network Cross Functional Team (CFT). Supports tactical/operational programs that enable the continuous modernization of a unified network requirements, the sustainment community, and DoD and Federal Government customers. Program Management Office (PMO) costs will be covered by OMA funding. ***FY 2025 Plans:*** Acquisition support for CHS and customer programs. CHS rapidly procures common hardware configurations across all four Network Modernization Lines of Effort, Capability Sets, and Network Cross Functional Team (CFT). Supports tactical/operational programs that enable the continuous modernization of a unified network requirements, the sustainment community, and DoD and Federal Government customers. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Modest rise in costs for tactical and operational programs designed to facilitate the ongoing modernization of unified network requirements.			
Title: Technical and Test Support ***Description:*** Funding is provided for technical, and testing support for the following effort. ***FY 2024 Plans:*** CHS provides technical support, environmental and survivability testing, system engineering and design, end of life/configuration management, and strengthens cyber security/supply chain management across Army tactical/operational programs to ensure interoperability and integration of hardware throughout the computing infrastructure. CHS conducts hardware evaluations that facilitate and simplify the selection of common hardware solutions across numerous Army programs and agencies. ***FY 2025 Plans:*** CHS provides technical support, environmental and survivability testing, system engineering and design, end of life/configuration management, and strengthens cyber security/supply chain management across Army tactical/operational programs to ensure interoperability and integration of hardware throughout the computing infrastructure. CHS conducts hardware evaluations that facilitate and simplify the selection of common hardware solutions across numerous Army programs and agencies. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned life cycle lines of effort to support the additional workload required to execute the CHS-6 contract.	1.513	1.120	1.446
Title: Logistical Service Support	0.408	0.417	0.425

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Funding is provided for logistics services, materiel, and transportation required to support the efforts. ***FY 2024 Plans:*** CHS logistical services include worldwide support with a 72-hour turnaround for repairs, tailorable supply chain and cybersecurity measures, manages customizable warranty, maintenance and failure rate reporting, and technical support services to support specific Army program requirements. ***FY 2025 Plans:*** CHS logistical services include worldwide support with a 24-hour turnaround for repairs, tailorable supply chain and cybersecurity measures, manages customizable warranty, maintenance and failure rate reporting, and technical support services to support specific Army program requirements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase is for the expansion of CHS logistical services encompasses global assistance with a rapid 24-hour repair turnaround, customizable supply chain and cybersecurity measures.			
Title: Contract Support Services ***Description:*** Funding is provided for contract support services for the following effort. ***FY 2024 Plans:*** Contract Support Services are required to provide continuing expedited acquisition support for customer procurements. ***FY 2025 Plans:*** Contract Support Services are required to provide continuing expedited acquisition support for customer procurements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase support services are required to provide continuing expedited acquisition support for customer procurements	0.204	0.208	0.212
Accomplishments/Planned Programs Subtotals	4.934	4.630	5.036

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

CHS is currently executing an approved acquisition strategy to facilitate the procurement of commercial IT through a single award, full and open competition contract. CHS-6 was competitively awarded on 31 August 2023. CHS-6 has a base period of performance of 4 years with two 3 year options. The CHS PMO shaped the CHS-6

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

contract to allow all Federal Agencies with tactical requirements to achieve their missions and strategic initiatives by providing a rapid and streamlined process and access to critical Commercial Information Technology.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) 323 / *Common Hardware Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Support	C/FP	Various : Various	13.318	2.809	Dec 2022	2.885	Dec 2023	2.953	Dec 2024	-		2.953	Continuing	Continuing	Continuing
Logistical Service Support	C/FP	Various : Various	2.146	0.408	Dec 2022	0.417	Dec 2023	0.425	Dec 2024	-		0.425	Continuing	Continuing	Continuing
Technical & Test Support	C/FP	Various : Various	7.969	1.513	Dec 2022	1.120	Dec 2023	1.446	Dec 2024	-		1.446	Continuing	Continuing	Continuing
		Subtotal	23.433	4.730		4.422		4.824		-		4.824	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Support Services	SS/CR	APG, MD : APG, MD	0.402	0.204	Dec 2022	0.208	Dec 2023	0.212	Dec 2024	-		0.212	Continuing	Continuing	Continuing
		Subtotal	0.402	0.204		0.208		0.212		-		0.212	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.835	4.934		4.630		5.036		-		5.036	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

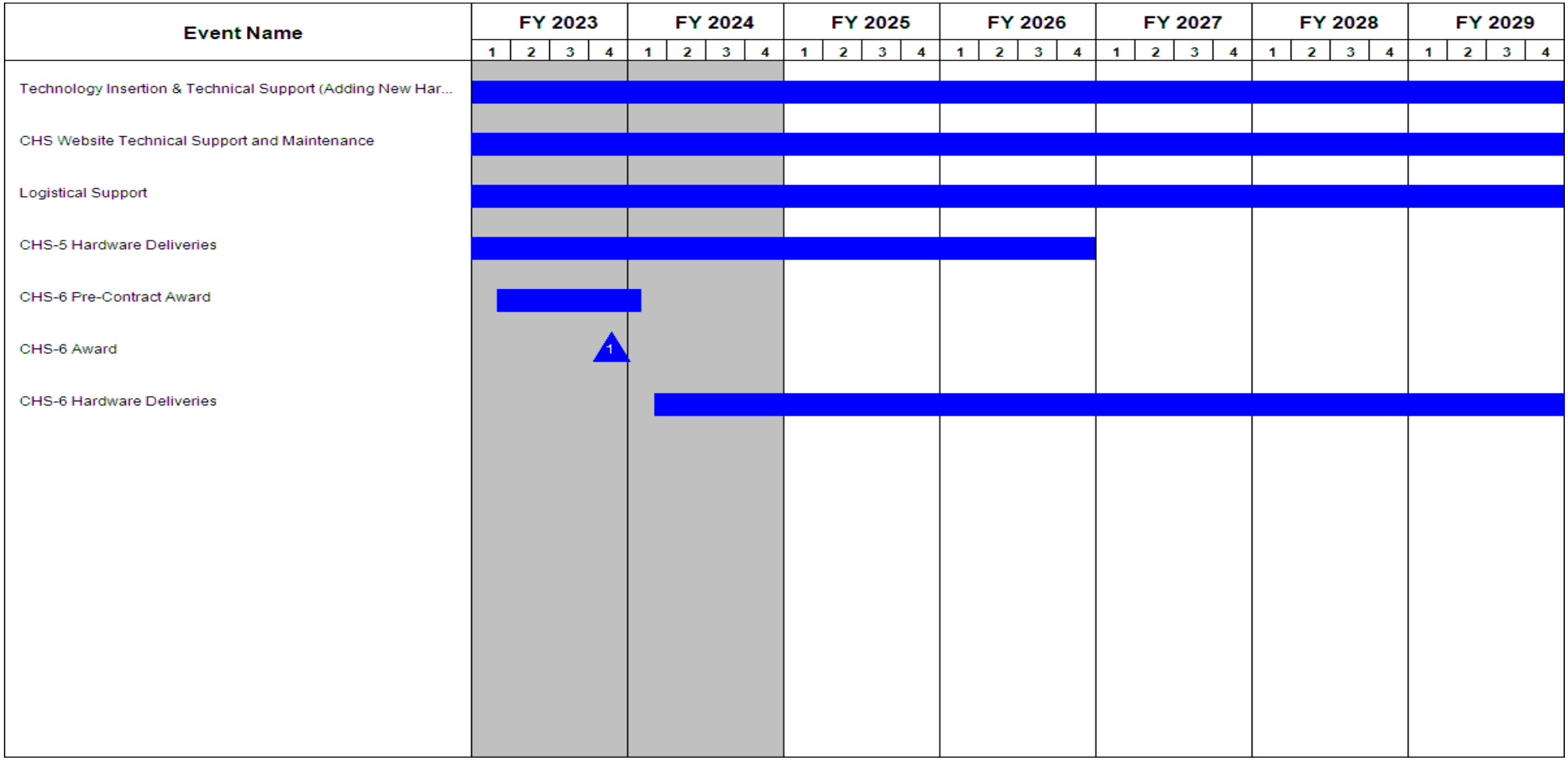


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** 323 / *Common Hardware Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Technology Insertion & Technical Support (Adding New Hardware to Contract)	1	2007	4	2029
CHS Website Technical Support and Maintenance	4	2018	4	2029
Logistical Support	4	2018	4	2029
CHS-5 Hardware Deliveries	4	2018	4	2026
CHS-6 Pre-Contract Award	1	2020	1	2024
CHS-6 Award	4	2023	4	2023
CHS-6 Hardware Deliveries	1	2024	4	2036

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C29 / *Centralized Technical Support Facility (CTSF)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
C29: *Centralized Technical Support Facility (CTSF)*	-	8.910	4.380	4.373	-	4.373	4.478	4.580	4.631	4.677	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project C29, The Centralized Technical Support Facility (CTSF): The CTSF is the Army's premier test and certification facility for System of Systems interoperability, functioning as CIO/G6's designated independent test agent and Land/WarNet/Mission Command (LWN/MC) configuration manager. The Central Technical Support Facility's (CTSF) directed mission is to perform Army Interoperability Certification (AIC) testing and configuration management for all 23 operational through tactical level Command, Computing, Control, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) systems, Mission and Space systems, Aviation systems and other individual, family, and system of systems, applications, and hardware prior to release to the field. The CTSF accomplishes this through the enforcement of a standards based architecture while supporting the development and implementation of an integrated computing infrastructure and a converged network. The CTSF provides validated test data to the Department of the Army and Joint agencies to accredit interoperability certifications. The distributed test environment of the CTSF is accomplished through the Federation of Net-centric Sites (FaNS) construct. This FaNS construct addresses distributed integration development and testing using the core infrastructure of the CTSF to harness Army and Joint expertise/resources. Through these federated resources, the CTSF executes or supports interoperability development, integration and certification testing of the systems and system of systems in the Warfighter Mission Area, to include Network Evaluation spinouts, as they become part of the Army's LandWarNet. The cited work is consistent with Strategic Planning Guidance and the Army Modernization and Strategy Plan.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Army Interoperability Certification (AIC) Testing	2.924	1.873	1.809
Description: Conduct Army Interoperability Certification (AIC), planning/coordination/scheduling/ and reporting of Common Operating Environment (COE) and software block testing (local and distributed). Additionally, provide stakeholders data collection/data analysis/data dissemination/simulation/stimulation verification/validation in support of Army geospatial interoperability certification, system of system cybersecurity posture assessment and individual system cybersecurity policy adjustment. Manage the set-up, configuration, integration, operations and maintenance of the LandWarNet/Mission Command (LWN/MC) systems within the CTSF test environments. Function as the HQDA G-6's Independent Test Agent for Program Managers of LWN/MC systems that have an Acquisition Life Cycle requirement for testing interoperability of software and associated hardware prior to fielding to the Warfighter. Act as the central control node to synchronize the HQDA G-6 accredited Federation of Net-centric Sites (FaNS) distributed AIC testing environment. Report the results of Army Interoperability Certification tests to the HQDA G-6, PM, TRADOC and AFC communities.			
FY 2024 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Continue SWB11-12 test planning, test case development, test environment architecture set-up, for interoperability testing, Geospatial Information Systems (GIS) interoperability assessment, cybersecurity posture adjustment and assessment activities for the systems that comprise the Army's tactical software baselines. Conduct COE v3.0 planning, test case development and architecture set-up to support the technical standards update timelines for the Army's tactical software baseline. Conduct interoperability testing for the SWB11-12 and COE v3.0 systems that comprise the LWN/MC baseline to ensure the tactical integrated computing infrastructure is interoperable in a System of Systems (SoS) environment and to enable the HQDA G-6 to enforce a standards based architecture. Continue the virtualization build out and scale up of the test environment to support AIC testing. Partner with ATEC and AFC to leverage the CTSF assets in support of PMs' Operational Test activities. ***FY 2025 Plans:*** Continue SWB11-12 test planning, test case development, test environment architecture set-up, for interoperability testing, Geospatial Information Systems (GIS) interoperability assessment, cybersecurity posture adjustment and assessment activities for the systems that comprise the Army's tactical software baselines. Conduct COE v3.0 planning, test case development and architecture set-up to support the technical standards update timelines for the Army's tactical software baseline. Conduct interoperability testing for the SWB11-12 and COE v3.0 systems that comprise the LWN/MC baseline to ensure the tactical integrated computing infrastructure is interoperable in a System of Systems (SoS) environment and to enable the HQDA G-6 to enforce a standards based architecture. Continue the virtualization build out and scale up of the test environment to support AIC testing. Partner with ATEC and AFC to leverage the CTSF assets in support of PMs' Operational Test activities. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to applying efficiencies.			
Title: Engineering Services ***Description:*** Provide network engineering support to establish and maintain tactical architectures on the CTSF test floors and to deploying/fielded units at training centers around the world (JRTC, NTC, JMRC). System engineering support provides hardware virtualization, Army End Point Security System (AESS) support, system validation and integration support to numerous PMs on the integration and risk reduction labs, and assists Army programs with interoperability assessments and AIC rehearsal. Modify and merge army data products for CTSF test architectures. Continuously seek emerging markets. Develop/Maintain Applications for CTSF Configuration Tracking System Version 4 (CMTSv4). ***FY 2024 Plans:*** Continue to provide Network support for integration and test floors, network support to fielded units, and systems engineering and analysis support to system of systems integration activities. Enhance the Security posture of the CTSF by ensuring the latest Information Assurance Vulnerability Alerts (IAVAs) and Security Technical Implementation Guides (STIGs) are implemented as required by Risk Management Framework (RMF). Integrate and implement Army End Point Security System (AESS) technology,	0.199	0.203	0.207

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
assist PMs in the development of AESS policies. Plan and conduct engineering evaluations for AIC testing and data collection in the Joint Warfighter Assessment (JWA)/Capability Integration Evaluation (CIE) to leverage the operational environment and JWA/ CIE resources. Work with Network Cross Functional Team on Network modernization and Integrated Tactical Network (ITN) design and testing. Assist integration and test architectures to include Program of Record (POR) and non-POR Soldier radio waveforms to provide PMs and Material Developers testing in realistic environments. Support Army Test and Evaluation Command (ATEC) and Army Futures Command interoperability assessments of Cross-Functional Team (CFT) solutions. Continue efforts to implement an AIC Secret Releasable test environment network that integrates Army and the Unified Action Partners (UAP). ***FY 2025 Plans:*** Continue to provide Network support for integration and test floors, network support to fielded units, and systems engineering and analysis support to system of systems integration activities. Enhance the Security posture of the CTSF by ensuring the latest Information Assurance Vulnerability Alerts (IAVAs) and Security Technical Implementation Guides (STIGs) are implemented as required by Risk Management Framework (RMF). Integrate and implement Army End Point Security System (AESS) technology, assist PMs in the development of AESS policies. Plan and conduct engineering evaluations for AIC testing and data collection in the Joint Warfighter Assessment (JWA)/Capability Integration Evaluation (CIE) to leverage the operational environment and JWA/ CIE resources. Work with Network Cross Functional Team on Network modernization and Integrated Tactical Network (ITN) design and testing. Assist integration and test architectures to include Program of Record (POR) and non-POR Soldier radio waveforms to provide PMs and Material Developers testing in realistic environments. Support Army Test and Evaluation Command (ATEC) and Army Futures Command interoperability assessments of Cross-Functional Team (CFT) solutions. Continue efforts to implement an AIC Secret Releasable test environment network that integrates Army and the Unified Action Partners (UAP). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in funding reflects planned lifecycle of the effort.			
Title: Configuration Management ***Description:*** As the CTSF Configuration Management Office, provide CM functional and physical configuration management and change management to the CTSF Army Interoperability Certification test floor environment. Additionally, as the Army Configuration Management Office (ACMO), establish and maintain oversight control of the Army Master Library for the Army Interoperability Certified Fielded Baseline (AICFB). Archive system software and data products, correlated with their associated documentation, for the Army LandWarNet Mission Command Baseline (ALWNMCB), a subset of the AICFB. Establish and maintain the configuration and change management to the AICFB and the ALWNMCB for Lifecycle Software Management (LCSM). Provide support to the Army Staff (ARSTAF), Material Developers (MATDEV), Project Managers (PM), and System Owners (SO) through the orderly management of product configuration information and product change management (ChM),	2.276	1.910	1.958

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C29 / *Centralized Technical Support Facility (CTSF)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
which enables capability revisions, improved reliability and maintainability, and extended life-cycle. Maintain and improve the Configuration Management Tracking System version 3 (CMTSIII), the Army's authoritative database management system (DBMS) for configuration management (CM) of the systems comprising Coalition Interoperability Assurance and Validation (CIAV), and the Warfighter Mission and Business Mission Areas of the Army Information Technology (IT) portfolio. Assist the HQDA G-6 conduct accreditation inspections and training for Federation of Net-centric Sites (FaNS) locations. ***FY 2024 Plans:*** Continue to provide CM functional and physical configuration management and change management to the CTSF Army Interoperability Certification test floor environment. Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provide baseline reconciliation to the four quarterly HQDA G6 AICFB reports, identifying to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the HQDA G-6 AICFB in conducting accreditation inspections and training for Federation of Net-centric Sites (FaNS) locations. ***FY 2025 Plans:*** Continue to provide CM functional and physical configuration management and change management to the CTSF Army Interoperability Certification test floor environment. Provide CM functional and physical configuration management and change management to the AICFB, to include archiving the required system software, data products and documentation, while correlating the relevant data within the CMTSIII DBMS for visibility to users Army wide. Provide baseline reconciliation to the four quarterly HQDA G6 AICFB reports, identifying to commanders and their G-3/G-6 staff the Army's AIC certified, Interoperability Capability and Limitations assessed, AIC waivered, and AIC exempted system software that is authorized to connect to the Army's network. Assist the HQDA G-6 AICFB in conducting accreditation inspections and training for Federation of Net-centric Sites (FaNS) locations. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned life cycle lines of effort.			
Title: Management Operations/Program Office ***Description:*** Provide management operations consisting of planning, programming and executing funds; planning and programming for required personnel; planning, programming and executing contracts supporting AIC testing processes; identifying reimbursable tests and collecting/allocating appropriate funds; planning and programming logistics activities, managing/controlling/documenting physical assets and inventories; and perform oversight and coordination of physical security with hosting installation.	0.452	0.394	0.399

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: Continuation of programming and execution of funding. Plan and program manpower, identify contracting requirements and develop strategy for implementation in conjunction with CECOM Acquisition Center. Track testing schedule, prepare/coordinate/ track customer funding for AIC testing activities and infrastructure support. Continue to provide field support coordination for unit training and exercises upon request. Maintain existing infrastructure; continue to enhance physical security, access control, force protection, Continuity Of Operations (COOP) and Emergency Action Plan (EAP) activities and exercises. Continue inventory accountability programs and asset control. ***FY 2025 Plans:*** Continuation of programming and execution of funding. Plan and program manpower, identify contracting requirements and develop strategy for implementation in conjunction with CECOM Acquisition Center. Track testing schedule, prepare/coordinate/ track customer funding for AIC testing activities and infrastructure support. Continue to provide field support coordination for unit training and exercises upon request. Maintain existing infrastructure; continue to enhance physical security, access control, force protection, Continuity Of Operations (COOP) and Emergency Action Plan (EAP) activities and exercises. Continue inventory accountability programs and asset control. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned life cycle lines of effort.			
Title: Modernization ***Description:*** Technical modernization FY22-23 effort for Army Interoperability Certification (AIC) to enhance CTSF testing capabilities. Estimated cost of modernization is approximately $6M in investment with virtualization efforts and test automation. Funding provided for hardware & software integration for virtualization and automation, software licensing, and labor and other supporting integration efforts.	3.059	-	-
Accomplishments/Planned Programs Subtotals	8.910	4.380	4.373

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Transition from executing a single test event at a time to multiple simultaneous test events using new universal mission threads, providing speed and efficiency to the test/acquisition timeline. Execute system of systems interoperability testing and certification through the use of Government and Systems Engineering and Technical Analysis (SETA) contract personnel experienced in product development and interoperability testing. Testing and certification occurs in a cyclical fashion, with an

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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expectation of an annual Software Block/Capability Set test followed with cyclical multiple test events to ensure integrity of software baselines to the Warfighter. Engineering Services provides strategic integration of software into a system of systems/family of systems environment to support interoperability testing. Establish and maintain Configuration Management and version control of the Army's Interoperable Battle Command LandWarNet Baseline. Distributed testing capability uses local assets and leverages other federated test facilities to create synergy and realize efficiencies.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM Matrix	Allot	Program and Budget Analysis Support : Fort Hood, TX/ Aberdeen Proving Grounds, MD	5.992	0.154		0.151		0.154		-		0.154	0.000	6.451	-
ISSA/Training/TDY	Allot	Site Support Activities : Fort Hood, TX	1.317	0.215		0.168		0.179		-		0.179	0.000	1.879	-
Supplies	C/UCA	Management Operations, Logistics Support : Fort Hood, TX	1.726	0.083		0.075		0.066		-		0.066	0.000	1.950	-
		Subtotal	9.035	0.452		0.394		0.399		-		0.399	0.000	10.280	N/A

Remarks

Under "open-the-door" cost model, all In-house support efforts are included under Test & Evaluation.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CECOM RS3	C/CPFF	Test, Configuration Management : Fort Hood, TX	21.053	1.564	Apr 2023	0.443		0.452		-		0.452	0.000	23.512	-
CECOM GSA BMO SB SITE SUPPORT SERVICES	C/T&M	Facilities, Maintenance, Security : Fort Hood, TX	15.180	1.360	Apr 2023	1.430		1.357		-		1.357	0.000	19.327	-
In-House Support	Allot	Test : Fort Hood,TX	15.411	1.974		1.587		1.628		-		1.628	0.000	20.600	-
Equipment/Instrumentation	C/UCA	Test Equipment Infrastructure : Fort Hood, TX	3.205	0.501		0.526		0.537		-		0.537	0.000	4.769	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Modernization	MIPR	Test, Configuration Management : Fort Hood, TX	4.484	3.059		-		-		-		-	0.000	7.543	-
		Subtotal	59.333	8.458		3.986		3.974		-		3.974	0.000	75.751	N/A

Remarks

ARL Matrix effort became a "reimbursable" effort under Open-the-Door cost model effective in FY17; no longer "Direct" funded.
ISSA no longer funded at CTSF level.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	68.368	8.910		4.380		4.373		-		4.373	0.000	86.031	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
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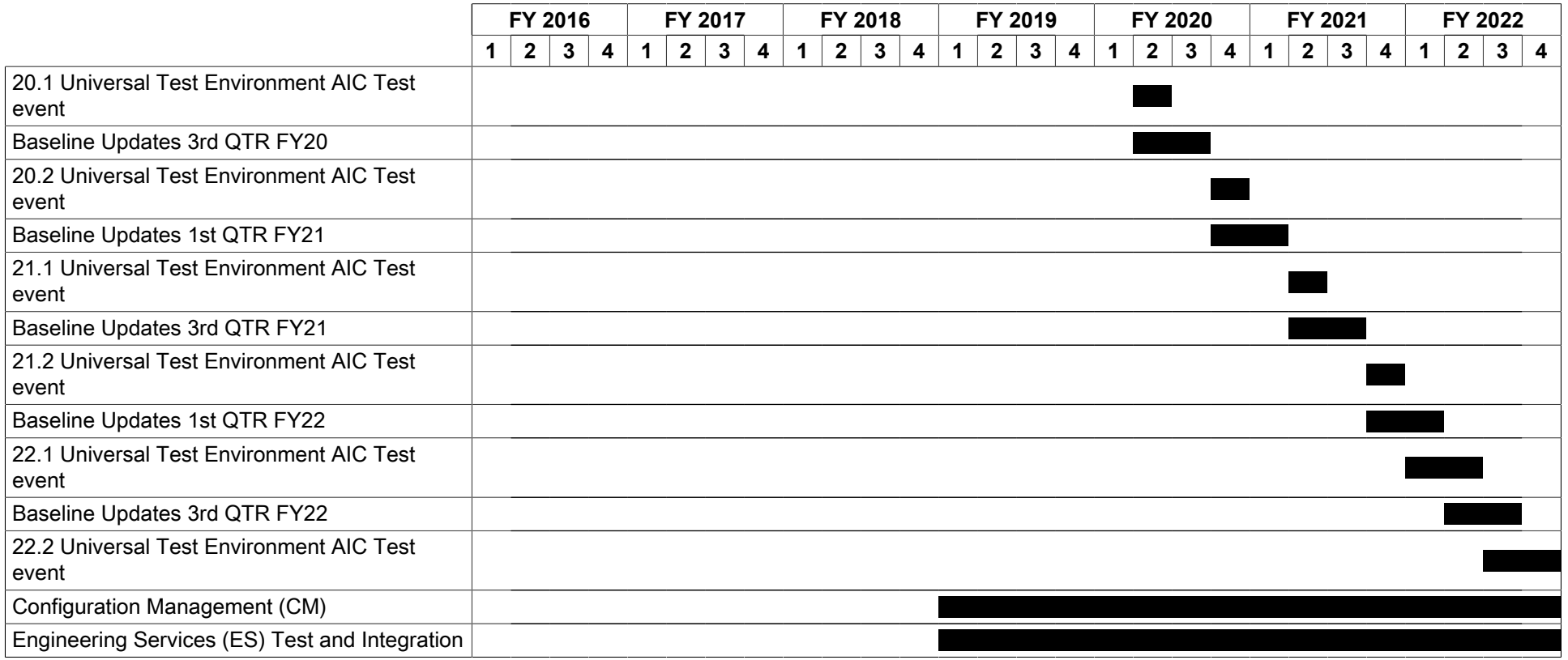

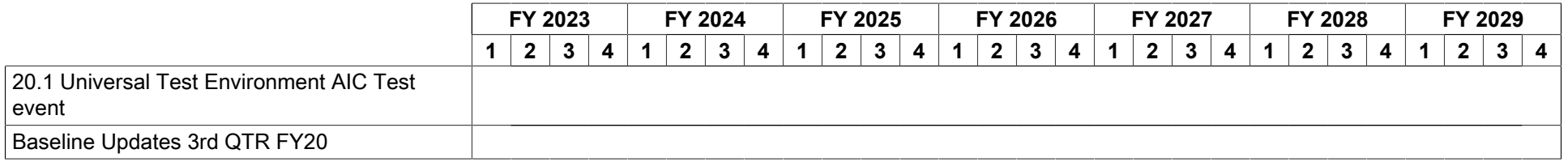

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
20.2 Universal Test Environment AIC Test event																												
Baseline Updates 1st QTR FY21																												
21.1 Universal Test Environment AIC Test event																												
Baseline Updates 3rd QTR FY21																												
21.2 Universal Test Environment AIC Test event																												
Baseline Updates 1st QTR FY22																												
22.1 Universal Test Environment AIC Test event																												
Baseline Updates 3rd QTR FY22																												
22.2 Universal Test Environment AIC Test event																												
Configuration Management (CM)																												
Engineering Services (ES) Test and Integration																												

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
20.1 Universal Test Environment AIC Test event	2	2020	2	2020
Baseline Updates 3rd QTR FY20	2	2020	3	2020
20.2 Universal Test Environment AIC Test event	4	2020	4	2020
Baseline Updates 1st QTR FY21	4	2020	1	2021
21.1 Universal Test Environment AIC Test event	2	2021	2	2021
Baseline Updates 3rd QTR FY21	2	2021	3	2021
21.2 Universal Test Environment AIC Test event	4	2021	4	2021
Baseline Updates 1st QTR FY22	4	2021	1	2022
22.1 Universal Test Environment AIC Test event	1	2022	2	2022
Baseline Updates 3rd QTR FY22	2	2022	3	2022
22.2 Universal Test Environment AIC Test event	3	2022	4	2022
Configuration Management (CM)	1	2019	4	2022
Engineering Services (ES) Test and Integration	1	2019	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C34 / *Army Tac C2 Sys Eng*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
C34: *Army Tac C2 Sys Eng*	-	40.433	11.141	11.177	-	11.177	11.190	11.310	11.436	11.550	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Network Modernization Priority. Project C34, Army Tactical Command and Control Systems Engineering supports the Army's Network Modernization Strategy and coordinates technical efforts across and outside of PEO Command, Control, Communications-Tactical (PEO C3T) to ensure integration with the current and future Mission Command Network. Project C34 provides technical support to programs, informing design and solutions with specific emphasis on the ability for different program efforts to be integrated and interoperable with one another. Efforts support Army Modernization priorities including Army Unified Network Plan, Multi-Domain Operations, Joint All Domain Command and Control (JADC2), Data Modernization and emerging data-centric requirements.

Project C34, Army Tactical Command and Control Systems Engineering: This project funds the PEO C3T System of Systems (SoS) engineering and integration, experimentation, acquisition management, testing, fielding and sustainment support to ensure interoperability and affordability within the PEO C3T portfolio. The effort focuses on SoS Engineering and Integration for the Mission Command Network with increased emphasis on immediate Warfighter needs as well as leveraging emerging technologies.

Fiscal Year 2025 will focus on the continued development, implementation and integration of the Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) network architectures. This includes maturing the technology enhancement roadmap for SoS capability evolution across the PEO C3T portfolio that incorporates network integration support and design products for system validation experimentation and integration testing, integration of tactical networked capabilities for all Mission Command Network systems including integration events, integration of tactical information assurance solutions and security measures for consistent cyber protection.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: System of Systems (SoS) Developmental Test and Integration Test Support across tactical C2 systems	1.404	1.312	1.257
Description: System of Systems (SoS) Developmental Test and Integration Test Support across tactical Command and Control (C2) systems funds support the following effort: ***FY 2024 Plans:*** Continue to provide the infrastructure and support to conduct integration testing and systems engineering for C3T systems, products, technical insertions, and systems under evaluation, ensuring integration of capabilities across the network. Funds include sustainment of increased level of integration testing and required maintenance to support data-centric network design. Funds also include continued participation as part of the Army Interoperability Certification (AIC) Federated Net-centric Sites			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
(FaNS) facility. ***FY 2025 Plans:*** Continue to provide the infrastructure and support to conduct integration testing and systems engineering for PEO C3T systems, products, technical insertions, and systems under evaluation, ensuring integration of capabilities across the network. Funds include sustainment of increased level of integration testing and required maintenance to support data-centric network design. Funds also include continued participation as part of the Army Interoperability Certification (AIC) Federated Net-centric Sites (FaNS) facility. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease reflects planned life cycle lines of effort.			
Title: Conduct and Support System of Systems (SoS) Interoperability Engineering ***Description:*** Funds support the following efforts: ***FY 2024 Plans:*** Across the Army Unified Network and Mission Command applications within and external to PEO C3T, provide integration support for testing, exercises and experimentation. Identify critical integrated test points, monitor developmental testing at integration points, develop event architectural data processes and products, and facilitate the transition of Network capabilities to the warfighter. Provide technical support to exercises and demonstrations of Army modernization initiatives. Develop integration testing strategies designed to enhance Development Security Operations (DEVSECOPS) implementation and more expeditious testing cycles. ***FY 2025 Plans:*** Across the Army Unified Network and Mission Command applications within and external to PEO C3T, provide integration support for testing, exercises and experimentation. Identify critical integrated test points, monitor developmental testing at integration points, develop event architectural data processes and products, and facilitate the transition of Network capabilities to the warfighter. Provide technical support to exercises and demonstrations of Army modernization initiatives. Develop integration testing strategies designed to enhance Development Security Operations (DEVSECOPS) implementation and more expeditious testing cycles. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned life cycle lines of effort.	2.534	2.585	2.779
Title: Development and Implementation of Tactical Information Assurance (IA) ***Description:*** Funds support the following efforts:	1.428	1.293	1.459

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: Continue to implement ARCYBER, CIO, G6 and CYBERCOM guidance for execution of Cyber Security policies and procedures at the tactical level. Continue to document the current tactical network security architecture with the goal of developing recommendations to eliminate inconsistencies/duplications, increasing the security posture, decreasing complexity of operations, and decreasing costs. Support planning of tactical implementation of integrated security approaches for the Army Unified Network. This includes support for incorporation of DoD-driven Zero Trust principles. ***FY 2025 Plans:*** Continue to implement ARCYBER, CIO, G6 and CYBERCOM guidance for execution of Cyber Security policies and procedures at the tactical level. Continue to document the current tactical network security architecture while developing recommendations to eliminate inconsistencies/duplications, increase the security posture, decrease complexity of operations and decrease costs. Funds also support development of a security architecture implementation strategy to enable integration between the Army persistent and episodic network concept and planning of tactical implementation of integrated security approaches for the Army Unified Network, including support for incorporation of DoD-driven Zero Trust principles. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned life cycle lines of effort.			
Title: System of Systems (SoS) Engineering and Integration Evolution of the Network	1.562	1.666	1.123
Description: Funds support the following efforts: ***FY 2024 Plans:*** Continue technical implementation of cross-PEO System of Systems Engineering and Integration analysis and processes to ensure successful development and engineering of current and future systems for Unified Network. Includes SoS engineering design for capabilities planned to field in FY 2025 and FY 2027 to include Program of Record and emerging Network Modernization technologies. Continue to deliver engineering products to support strategic decisions or address operational technical challenges. ***FY 2025 Plans:*** Continue technical implementation of cross-PEO System of Systems Engineering and Integration analysis and processes to ensure successful development and engineering of current and future systems for Unified Network. Includes SoS engineering design for Program of Record and emerging Network Modernization technologies capabilities planned fielding. Continue to deliver engineering products to support strategic decisions or address operational technical challenges. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease reflects planned life cycle lines of effort.			
Title: System of Systems Development ***Description:*** Funds support the following efforts: ***FY 2024 Plans:*** Continue to develop System of Systems Engineering tools, standards and interfaces to support DoD-driven initiatives. Tool development and implementation improves technical integration across the Army Unified Network. Tools also support integration of technical, logistics and business data for improved trade studies in support of programmatic decisions. ***FY 2025 Plans:*** Continue to develop System of Systems Engineering tools, standards and interfaces to support DoD-driven initiatives. Tool development and implementation improves technical integration across the Army Unified Network. Tools also support integration of technical, logistics and business data for improved trade studies in support of programmatic decisions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned lifecycle of the effort.	3.376	3.184	3.313
Title: Mission Command Network Synchronization and Integration Support ***Description:*** Funds are for the following effort: ***FY 2024 Plans:*** Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies and overlapping capabilities are reduced across the network and in synchronization with Army Modernization priorities and Cross Functional Team activities. Develop effective engineering strategies to integrate tactical applications for use across the Mission Command network to include support to the Common Operating Environment Technical Authority. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies. Develop or support development of networking documentation and standards identification that defines integration of evolving Capability Set systems. Provide technical support to exercises and demonstrations of Army modernization initiatives such as Mission Partner Environment Secret/Releasable (SEC/REL) implementation and Army Futures Command (AFC). ***FY 2025 Plans:*** Continue the support of current force and the development of future force C5ISR across the tactical network to ensure all Assistant Secretary of the Army (Acquisition, Logistics & Technology) (ASA(ALT)) programs are synchronized and redundancies	1.129	1.101	1.246

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
and overlapping capabilities are reduced across the network and in synchronization with Army Modernization priorities. Develop effective engineering strategies to integrate tactical applications for use across the Mission Command network to include support to the Common Operating Environment Technical Authority. Continue to perform network planning and integration activities across all cross-domain system-of-systems future capabilities and technologies. Develop or support development of networking documentation and standards identification that defines integration of evolving system configurations and architectures. Provide technical support to exercises and demonstrations of Army modernization initiatives such as Mission Partner Environment Secret/Releasable (SEC/REL) implementation and Army Futures Command (AFC). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned life cycle lines of effort.			
Accomplishments/Planned Programs Subtotals	11.433	11.141	11.177

	FY 2023	FY 2024
Congressional Add: Red Team Automation and Zero Trust Capabilities ***FY 2023 Accomplishments:*** Develop and pilot a Tactical Zero Trust Architecture across the tactical network and mission command systems. Establish data-centric network design integrated with the on-going tactical data fabric and preliminary Identify, Credential and Access Management strategies. Develop and assess Red-Teaming software for use in a DevSecOps environment and for unit-level utility. Option if Red-Team software demonstrates utility then follow on effort utilizing additional RDT&E funding would be initiated to bring into DevSecOps environment.	23.000	-
Congressional Add: Multi-Factor Authentication for Cyber Security ***FY 2023 Accomplishments:*** Develop and pilot a data- informed Identity and authentication algorithms that provide risk informed access to unified network and mission command systems. Pilot and assess Multi Factor Authentication integrated with Identity and authentication algorithms. Establish data centric strategy for Behavior Analytics, Continual Authentication, and security protections.	6.000	-
Congressional Adds Subtotals	29.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Not applicable for this item.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

D. Acquisition Strategy

This project provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, testing, interoperability, support to fielding and sustainment. It will focus on System of Systems (SoS) Systems Engineering and Integration for the tactical network with increased emphasis on Warfighter needs as well as leveraging emerging technologies. Efforts align to support the acquisition strategies of the programs that must connect to the network.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C34 / *Army Tac C2 Sys Eng*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tactical Info/Network Synchronization/SoS Dev	C/CPFF	Bowhead : APG MD	11.386	1.900	Nov 2022	1.945	Nov 2023	1.797	Nov 2024	-		1.797	Continuing	Continuing	Continuing
SoS Development	Various	Various : APG, MD	7.540	2.901	Dec 2022	2.699	Oct 2023	3.044	Oct 2024	-		3.044	Continuing	Continuing	Continuing
SoS Eng and Integ of the Network	SS/FP	MITRE : Aberdeen Proving Ground, MD/ Eatontown, NJ	112.962	1.562	Dec 2022	1.666	Oct 2023	1.123	Oct 2024	-		1.123	Continuing	Continuing	Continuing
System of Systems (SoS) Interoperability Engineering	C/CPFF	CACI : APG, MD	2.389	1.836	Feb 2023	1.886	Nov 2023	1.841	Nov 2024	-		1.841	Continuing	Continuing	Continuing
SoS Developmental Test and Integration Test Support	C/Various	Various : Various	0.976	1.404	Nov 2022	1.312	Nov 2023	1.257	Nov 2024	-		1.257	Continuing	Continuing	Continuing
Tactical Information	Various	Various : Various	0.404	0.858	Oct 2022	0.709	Oct 2023	0.919	Oct 2024	-		0.919	Continuing	Continuing	Continuing
Red Team Automation and Zero Trust Capabilities	Various	Various : Varous	-	23.000	Jun 2023	-		-		-		-	0.000	23.000	-
Multi-Factor Authentication for Cyber Security	Various	Various : Various	-	6.000	Oct 2023	-		-		-		-	0.000	6.000	-
		Subtotal	135.657	39.461		10.217		9.981		-		9.981	Continuing	Continuing	N/A

Remarks

The overall funding remains relatively consistent.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System of Systems (SoS) Interoperability Engineering	MIPR	MATRIX - C5ISR : Aberdeen Proving Ground, MD	15.623	0.698	Nov 2022	0.698	Oct 2023	0.939	Oct 2024	-		0.939	0.000	17.958	Continuing
Network Synchronization	MIPR	MATRIX - C5ISR : Aberdeen Proving Ground, MD	0.225	0.274		0.226	Oct 2023	0.257	Oct 2024	-		0.257	0.000	0.982	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) C34 / *Army Tac C2 Sys Eng*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	15.848	0.972		0.924		1.196		-		1.196	0.000	18.940	N/A

Remarks

The overall funding remains relatively consistent. Support costs capture Matrix labor associated with Integration and Test Support among PORs.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	151.505	40.433		11.141		11.177		-		11.177	Continuing	Continuing	N/A

Remarks

The overall funding remains relatively consistent.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

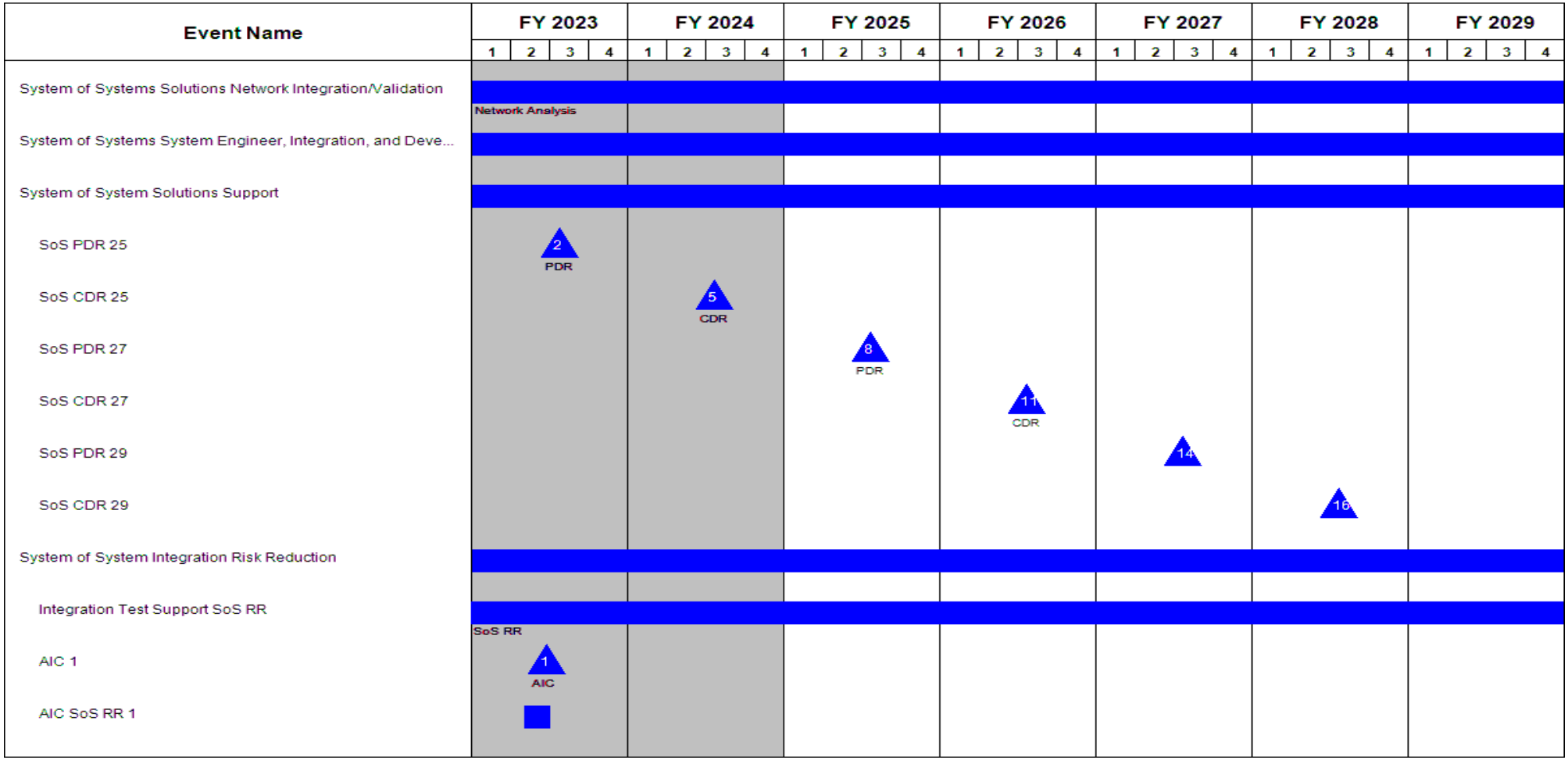


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

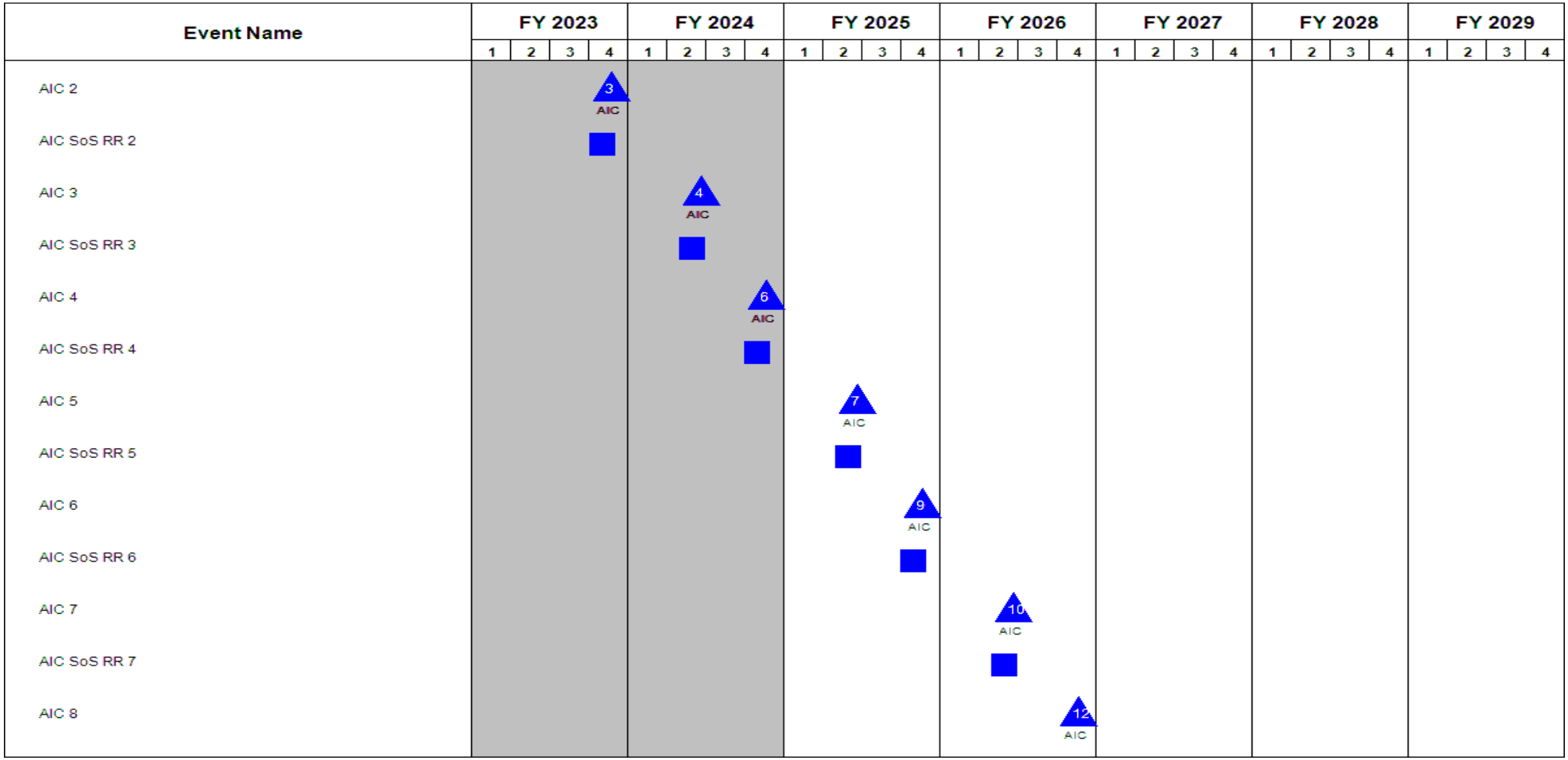


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

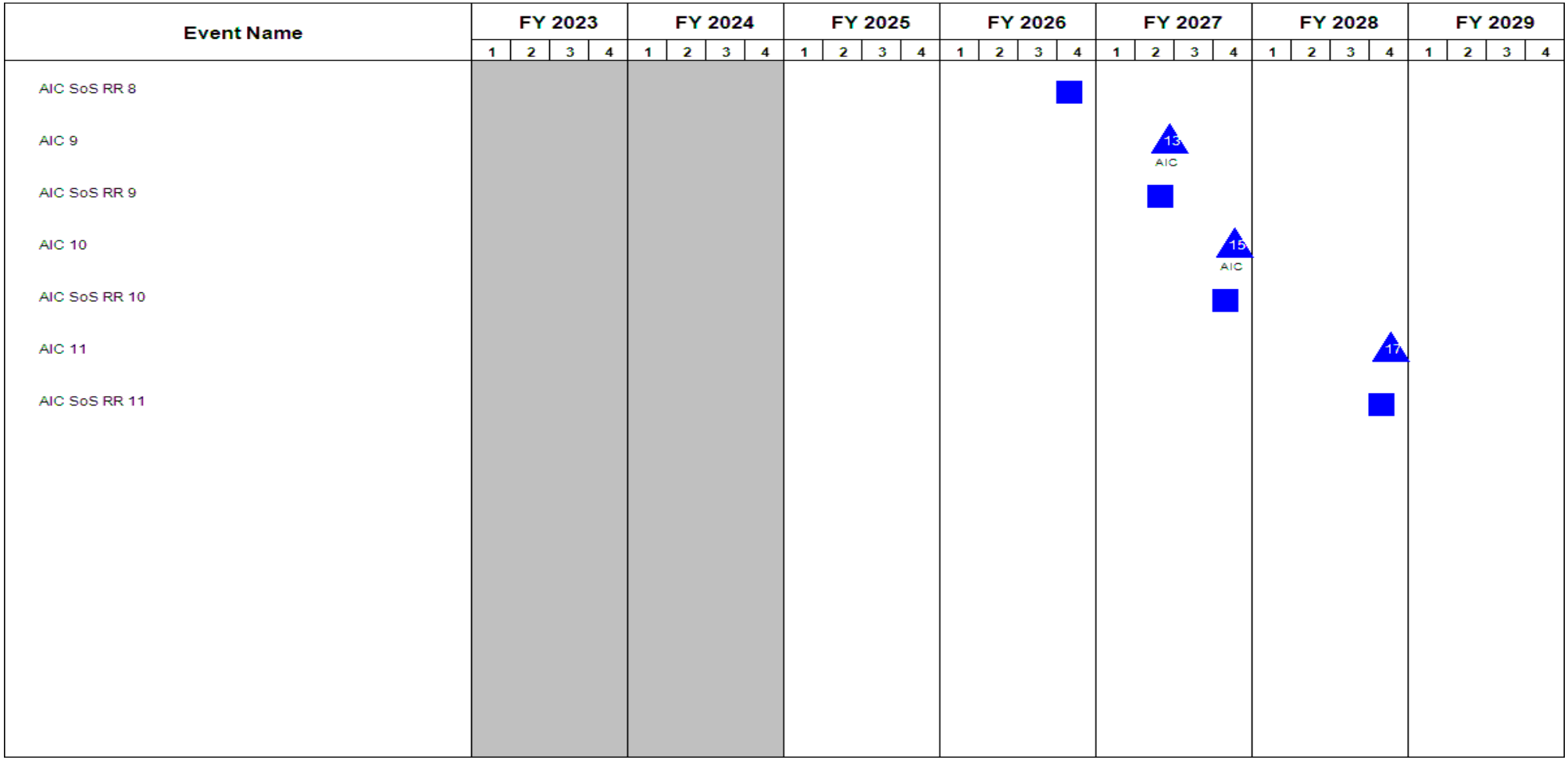


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
System of Systems Solutions Network Integration/Validation	1	2022	4	2029
System of Systems System Engineer, Integration, and Development	1	2022	4	2029
System of System Solutions Support	1	2022	4	2029
SoS PDR 23	3	2021	3	2021
SoS CDR 23	3	2022	3	2022
SoS PDR 25	3	2023	3	2023
SoS CDR 25	3	2024	3	2024
SoS PDR 27	3	2025	3	2025
SoS CDR 27	3	2026	3	2026
SoS PDR 29	3	2027	3	2027
SoS CDR 29	3	2028	3	2028
System of System Integration Risk Reduction	1	2022	4	2029
Integration Test Support SoS RR	3	2022	4	2029
AIC 1	2	2023	2	2023
AIC SoS RR 1	2	2023	2	2023
AIC 2	4	2023	4	2023
AIC SoS RR 2	4	2023	4	2023
AIC 3	2	2024	2	2024
AIC SoS RR 3	2	2024	2	2024
AIC 4	4	2024	4	2024
AIC SoS RR 4	4	2024	4	2024
AIC 5	2	2025	2	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** C34 / *Army Tac C2 Sys Eng*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AIC SoS RR 5	2	2025	2	2025
AIC 6	4	2025	4	2025
AIC SoS RR 6	4	2025	4	2025
AIC 7	2	2026	2	2026
AIC SoS RR 7	2	2026	2	2026
AIC 8	4	2026	4	2026
AIC SoS RR 8	4	2026	4	2026
AIC 9	2	2027	2	2027
AIC SoS RR 9	2	2027	2	2027
AIC 10	4	2027	4	2027
AIC SoS RR 10	4	2027	4	2027
AIC 11	4	2028	4	2028
AIC SoS RR 11	4	2028	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DD1 / *Unified Network Technology Trans & Integ (UNTTI)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
DD1: *Unified Network Technology Trans & Integ (UNTTI)*	-	-	7.898	13.203	-	13.203	14.537	12.960	10.420	7.906	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army priority for network modernization and supports the Army's strategy for establishing a Unified Network. UNTTI directly supports the development of capabilities that enable the Army of 2030 and Army of 2040 with a particular focus on Command and Control On-the-Move (C2 OTM) and increasing resiliency through network thickening.

Project DD1, Unified Network Technology Transition and Integration (UNTTI) is an RDT&E initiative enabling transport agnostic, high-capacity and resilient tactical communications for expeditionary operations. UNTTI efforts support system/subsystem development and demonstration, aimed at integration, maturation, evaluation, and testing to validate system prototypes against requirements. In FY2025, the UNTTI efforts include Technical Exchange Meeting (TEM) Projects - Pathway Diversity, Line of Sight (LOS) - Command Post Networking, and Transport Modernization. These technologies support new and improved communications capabilities with reduced Size, Weight, and Power (SWAP), while increasing throughput, providing network resiliency and Low Probability of Intercept/Low Probability of Detection (LPI/LPD) capabilities.

The Program Executive Office Command, Control, Communications-Tactical (PEO C3T) is responsible for prioritizing, programming, managing and executing the projects detailed below and ensuring these funds are prioritized to support the Army modernization priorities and prototyping. The Network Cross Functional Team (N-CFT), Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Army Capability Network (ACM) Networks and Services (N&S) support the prioritization of technology demonstrations, focused evaluations, and expert analyses to inform future requirements, mature technologies, and deliver new capabilities. These projects inform technology integration, support user assessments, and transition to programs if appropriate.

UNTTI procures, modifies, integrates, and tests system prototypes to insert enhanced capabilities in accordance with Army modernization priorities. UNTTI supports developing technical, logistics, training, and other acquisition documentation to assist with the transition, insertion, and integration of efforts across PM Tactical Network. In addition, UNTTI resources validation and test efforts which improves the reliability, maintainability, and supportability of Tactical Network equipped units. These improvements avoid future costs by mitigating single point failures and thickening the network which ultimately improves network and cyber resiliency along with unit availability for contingency operations.

In FY 2025, funding in the amount of $13.203M are for the UNTTI efforts including: TEM Projects - Pathway Diversity, Line of Sight (LOS) - Command Post Networking, and Transport Modernization.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Systems Engineering and Program Management ***Description:*** Includes overall management of program execution, major events, reporting, funding execution, and contract management. Includes participation in program planning and Integrated Product Team meetings with key stakeholders including the Network Cross Functional Team (N-CFT), Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Army Capability Network (ACM) Networks and Services (N&S), etc. ***FY 2024 Plans:*** Funds matrix and contractor personnel labor and travel requirements. Includes program oversight, systems engineering and technical control, risk management, documentation, and fielding support for UNTTI efforts. ***FY 2025 Plans:*** Funds matrix and contractor personnel labor and travel requirements in support of multiple planned Soldier Touch Points and other demonstration/exercise/training events. Includes program oversight, systems engineering and technical control, risk management, documentation, and fielding support for UNTTI efforts. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY25 is due to additional support required for Soldier Touch Points and other demonstration and exercises planned for FY25.	-	0.752	1.111
Title: TEM Projects - Pathway Diversity ***Description:*** TEM Projects - Pathway Diversity is a user configurable software solution that enables the network to be optimized based on real-time battlefield conditions. This software increases network resiliency and leverages multiple transports to send/ receive increased throughput simultaneously. ***FY 2024 Plans:*** Funds improve the usability, security, and performance aspects of the software based on FY23 small-scale operational feedback. Funds prototype procurement/modification, complete a large-scale pilot event, incorporating new transport systems (mesh SATCOM, LOS, etc.), RHN(s), and select Units (ESB-E or DIV focus) to understand integration and performance at scale. ***FY 2025 Plans:*** Funds improve the usability, security, and performance aspects of the software based on operational feedback. Funds software modification, software licenses, evaluation of hardware integration options, and supports initial demonstrations of capability to select Army Units to understand integration and performance at scale. Funds development of sustainment strategy and completes development, testing, and integration of this project. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	-	2.417	4.195

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Increase in FY25 due to software licenses for initial efforts.			
Title: Line of Sight (LOS) - Command Post Networking ***Description:*** Line of Sight (LOS) - Command Post Networking is a terrestrial communications solution capable of functioning in multiple operating environments and can adapt radio frequencies based on the physical and/or electronic environment with limited user interaction. This system provides more resilient communications for use within and between command post nodes. ***FY 2024 Plans:*** Funds will be used for prototype procurement/modification, to conduct required cyber assessments and Information Assurance certifications, and testing to MIL-STD-810H (Environmental) and MIL-STD-461G (Electromagnetic Interference). ***FY 2025 Plans:*** Funds will be used for prototype procurement/modification, to conduct required cyber assessments and Information Assurance certifications, and testing to MIL-STD-810H (Environmental) and MIL-STD-461G (Electromagnetic Interference). Funds platform integration efforts as well as support scaled exercise with capability. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY25 is due to addition of platform integration efforts.	-	0.754	3.881
Title: Satellite Communications (SATCOM) - Modem Virtualization ***Description:*** Satellite Communications (SATCOM) - Modem Virtualization is a prototyping effort focused on satellite communications (SATCOM) terminal and modem technologies to increase resiliency through multi-orbit, multi-constellation efforts while reducing system Size, Weight, Power, and Cost, and leveraging COTS hardware platforms. ***FY 2024 Plans:*** Funds will be used for prototype procurement/modification, to complete certification requirements (commercial and/or military), MIL-STD testing, terminal and system integration, and Risk Reduction events leading towards a Unit Experimentation and will provide the required technical expertise to plan/execute integration and experimentation events. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease in FY25 due to modem virtualization effort completion in FY24.	-	3.975	-
Title: System of System (SoS) Training ***Description:*** System of Systems (SoS) Training is an ongoing effort to synchronize, simplify, standardize training for efforts that integrate multiple capabilities in a System of Systems (SoS) configuration. Training efforts prioritize computer based training (CBT)	-	-	0.504

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
and other virtual technologies that support efficient and effective delivery of complex emerging capabilities to the end user in the field. ***FY 2025 Plans:*** Funds will be used to develop System of Systems (SoS) training materials for units that have multiple integrated systems from across the PM Tactical Network portfolio. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY25 due to addition of new effort.			
Title: Transport Modernization ***Description:*** Transport Modernization is a prototyping effort focused on modernization of communications transport technologies to increase resiliency, data capacity/throughput, and provide enhanced capabilities in denied, degraded, intermittent, or limited (DDIL) and Electronic Warfare (EW) communications environments, while reducing system Size, Weight, Power, and Cost, and leveraging COTS hardware platforms both At-the-Halt (ATH) and On-the-Move (OTM). ***FY 2025 Plans:*** Funds will be used for prototype procurement and modification of an emerging technology in transport modernization, along with integration and testing of modernized baseband solutions. Funds evaluation of hardware form factor variants and supports integration and testing with various Army platforms. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase in FY25 due to new effort.	-	-	3.512
Accomplishments/Planned Programs Subtotals	-	7.898	13.203

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

UNTTI related technologies will be pursued via competitively awarded contracts using best value source selection procedures. These technologies will be matured, demonstrated, tested, and evaluated in realistic environments. Selected technologies will integrate into existing programs as a modernization effort. The Integrated Product Team of key stakeholders including the Network Cross Functional Team (N-CFT), Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Army Capability Network (ACM) Networks and Services (N&S) determine technologies for further evaluation to close capability gaps.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DD1 / *Unified Network Technology Trans & Integ (UNTTI)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/ Program Management	C/T&M	Various : APG	-	-		0.752	Feb 2024	1.111	Feb 2025	-		1.111	0.000	1.863	-
		Subtotal	-	-		0.752		1.111		-		1.111	0.000	1.863	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TEM Projects - Pathway Diversity	SS/FFP	CloudJuncxion : APG	-	-		1.208	Feb 2024	2.097	Feb 2025	-		2.097	0.000	3.305	-
Satellite Communications (SATCOM) - Modem Virtualization	SS/FFP	Various : To be determined	-	-		1.988	Feb 2024	-		-		-	0.000	1.988	-
System of Systems (SoS) Training	SS/FFP	Various : To be determined	-	-		-		0.504		-		0.504	0.000	0.504	-
		Subtotal	-	-		3.196		2.601		-		2.601	0.000	5.797	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TEM Projects - Pathway Diversity	SS/FFP	CloudJuncxion : APG	-	-		1.209	Feb 2024	2.098	Feb 2025	-		2.098	0.000	3.307	-
Line of Sight (LOS) - Command Post Networking	SS/FFP	Various : To be determined	-	-		0.754	Feb 2024	3.881	Feb 2025	-		3.881	0.000	4.635	-
Line of Sight (LOS) - LOS Modernization	SS/FFP	Various : To be determined	-	-		-		0.000	Feb 2025	-		0.000	-	-	-
Satellite Communications (SATCOM) - Modem Virtualization	SS/FFP	Various : To be determined	-	-		1.987	Feb 2024	-		-		-	0.000	1.987	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DD1 / *Unified Network Technology Trans & Integ (UNTTI)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Transport Modernization	SS/FFP	Various : To be determined	-	-		-		3.512		-		3.512	0.000	3.512	-
		Subtotal	-	-		3.950		9.491		-		9.491	0.000	13.441	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		7.898		13.203		-		13.203	0.000	21.101	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

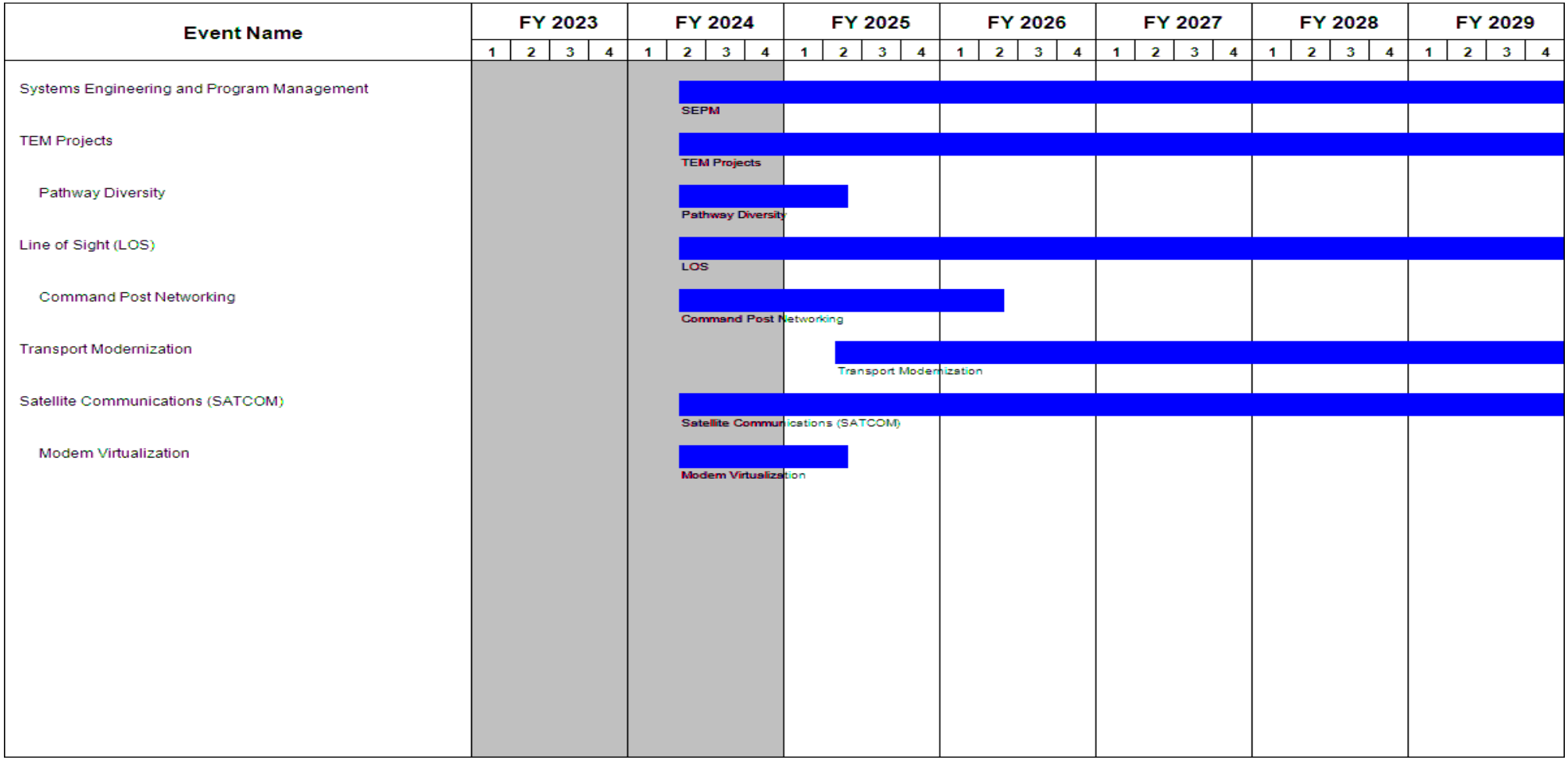


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DD1 / *Unified Network Technology Trans & Integ (UNTTI)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Systems Engineering and Program Management	2	2024	4	2029
TEM Projects	2	2024	4	2029
Pathway Diversity	2	2024	2	2025
Line of Sight (LOS)	2	2024	4	2029
Command Post Networking	2	2024	2	2026
Transport Modernization	2	2025	4	2029
Satellite Communications (SATCOM)	2	2024	4	2029
Modem Virtualization	2	2024	2	2025

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DK3 / *Sensor Computing Environment (SCE)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
DK3: *Sensor Computing Environment (SCE)*	-	-	-	2.392	-	2.392	-	-	-	-	0.000	2.392
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Sensor Computing Environment (SCE) is a new start within the Army Tactical Command & Control Hardware & Software program in FY 2025.

A. Mission Description and Budget Item Justification

The Sensor Computing Environment (SCE) provides interoperability for sensors and systems across the Army. SCE operates across any modality of sensors and is designed for resilient operations in tactical conditions. Sensor CE provides the following capabilities to the Army and End Users: Provides software, standards, and a common sensor data model for all sensor information; Enables interoperability and understanding across all network security enclaves; Enables the sharing and control of sensor information; Provides a mature Software Development Kit (SDK) for rapid integration of sensors onto the Army's networks; and Implements the COE Cross Cutting Capability (CCC) for Sensor Alert Distribution providing common sensor awareness from tactical edge to all systems on the Enterprise network.

The end state for SCE is to ensure the accessibility of multi-domain sensor data to those who need it through the network to enable information sharing among CEs while reducing acquisition and life-cycle costs through open standards and re-usable solutions across programs. This vision becomes achievable with the implementation of the COE CCC through the Army's MCN modernization.

FY2025 funding in the amount of $2.392 million maintains support of currently fielded Integrated Sensor Architecture (ISA) capabilities for sensor interoperability. Capabilities Include: Common Sensor Data Model, Definition of Standard, Interface Specification, Architecture Definition, Mature Software Development Kit (SDK), Compliance Verifications & Validation Tools. Yearly technology refreshes of ISA software support evolving cyber, sensor, and network changes in the Army.

DK3 Sensor CE program will support the Army's Common Operating Environment (COE), and the further development of requirements to define the standards for interoperability used when connecting sensors to the Army networks. This will follow the Integrated Sensor Architecture (ISA), which is a Modular Open Systems Approach (MOSA) that provides a modular solution and extensible data model that can be used to meet requirements of operations with any modality of sensor, from Enterprise to tactical networks, across any security enclave, and capable of being used on embedded platforms.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Sensor Computing Environment	-	-	2.392
Description: The Sensor Computing Environment (SCE) provides interoperability for sensors and systems across the Army. SCE operates across any modality of sensors and is designed for resilient operations in tactical			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DK3 / *Sensor Computing Environment (SCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
conditions. Accomplishments include: Maintaining support of currently fielded ISA capabilities for sensor interoperability and yearly technology refreshes of ISA software to support evolving cyber, sensor, and network changes in the Army. ISA capabilities will include: Common Sensor Data Model, Definition of Standard, Interface Specification, Architecture Definition, Mature Software Development Kit (SDK), Compliance V&V Tools. ***FY 2025 Plans:*** Fiscal Year (FY) 2025 Base funds in the amount of $2.392 million for Sensor CE capability development. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increased to support Sensor CE capability development.			
Accomplishments/Planned Programs Subtotals	-	-	2.392

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Sensor CE capability will be implemented by utilizing a mix of competitive Other Transaction Authority (OTA) and Federal Acquisition Regulation (FAR) contracts. This will provide incremental capability to ensure the accessibility of multi-domain sensor data to those who need it through the network to enable information sharing among CEs while reducing acquisition and life-cycle costs through open standards and re-usable solutions across programs. This vision becomes achievable with the Sensor CE requirements.

Requirement Documents:

- Sensor CE RDP approved by AROC OCT 2018 (CARDS #08108).
- COE IS CDD - FOC (FY25).
- PEO IEW&S OPR for Sensor CE MFR (November 2020).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DK3 / *Sensor Computing Environment (SCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sensor CE Program Management	C/CPAF	TBD : TBD	-	-		-		0.192	Nov 2024	-		0.192	0.000	0.192	-
		Subtotal	-	-		-		0.192		-		0.192	0.000	0.192	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCE Software Development and Validation	C/CPAF	TBD : TBD	-	-		-		0.828	Nov 2024	-		0.828	0.000	0.828	-
SCE ISA Engineering Refresh	C/CPAF	TBD : TBD	-	-		-		0.521	Nov 2024	-		0.521	0.000	0.521	-
SCE Architecture and System Engineering	C/CPAF	TBD : TBD	-	-		-		0.326	Nov 2024	-		0.326	0.000	0.326	-
		Subtotal	-	-		-		1.675		-		1.675	0.000	1.675	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCE Engineer - Matrix Gov	IA	C5ISR RTI : Belvoir, VA	-	-		-		0.243	Nov 2024	-		0.243	0.000	0.243	-
SCE Fielded Systems Support - Contractor	C/CPAF	TBD : TBD	-	-		-		0.282	Nov 2024	-		0.282	0.000	0.282	-
		Subtotal	-	-		-		0.525		-		0.525	0.000	0.525	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		2.392		-		2.392	0.000	2.392	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) DK3 / *Sensor Computing Environment (SCE)*	

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DK3 / *Sensor Computing Environment (SCE)*

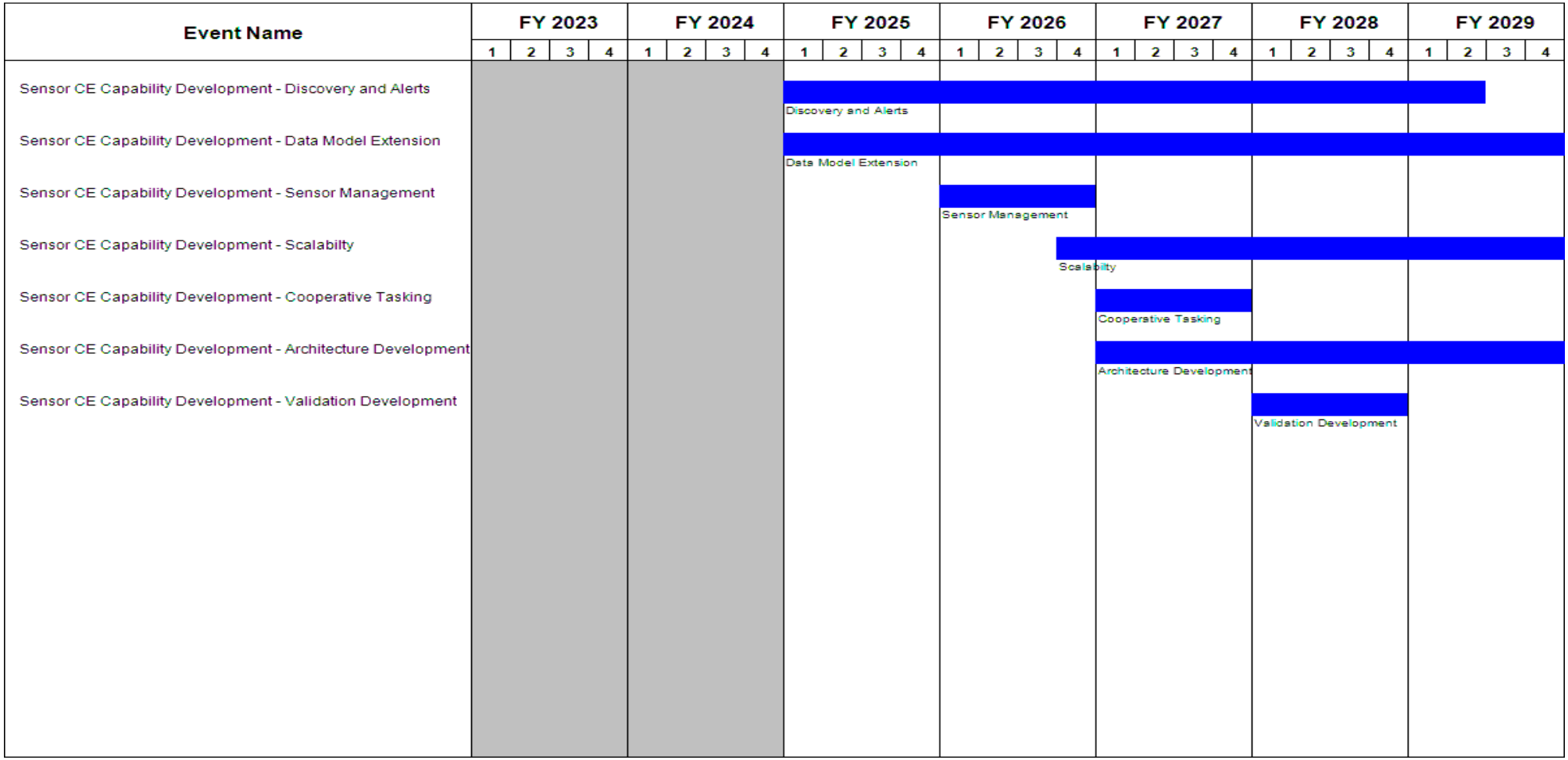


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** DK3 / *Sensor Computing Environment (SCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Sensor CE Capability Development - Discovery and Alerts	1	2025	2	2029
Sensor CE Capability Development - Data Model Extension	1	2025	4	2030
Sensor CE Capability Development - Sensor Management	1	2026	4	2026
Sensor CE Capability Development - Scalabilty	4	2026	2	2030
Sensor CE Capability Development - Cooperative Tasking	1	2027	4	2027
Sensor CE Capability Development - Architecture Development	1	2027	4	2030
Sensor CE Capability Development - Validation Development	1	2028	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
EJ4: *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	-	26.973	45.489	27.064	-	27.064	27.096	27.385	27.691	27.967	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned with the Army Network Modernization Strategy and Army 2030/2040 priorities.

Command Post Computing Environment (CPCE) is a modular environment providing scalable capabilities from Battalion through Army Service Component Command (ASCC), including data visualization/management, the Army's primary command post Common Operational Picture (COP) that provides the Commander the ability to understand, visualize, and direct the operational environment allowing them to plan and execute the mission scenario leveraging common data, collaboration within and external to the unit through voice, video and chat. Provides access to all network domains and enables the Mission Partner Environment (MPE).

CPCE provides an available, reliable, and resilient infrastructure which unifies data and services within the Command Post. CPCE implements an integrated, interoperable, cyber-secure, software infrastructure that serves as the host for a unified set of multiple warfighting functional applications within the command post at echelons Battalion to ASCC; eliminating "stove-piped" systems, duplicative or redundant implementations, simplifying future application development efforts, and provides key improvements in interoperability and data sharing across multiple echelons.

CPCE software infrastructure and applications reside on TSI hardware as well as previously fielded servers. The TSI provides the converged computing and data storage hardware/software required to host the tactical Computing Environments, their supported Warfighter Functional Area applications, integration of Cross Domain Solutions for Mission Partner Environment (MPE), Common Operating Environment (COE) Cross-Cutting Capabilities and enables a collaborative work environment.

FY2025 funding matures the tactical data fabric capability, to include continued work on the Combat Power tool; convergence of Warfighting functions applications through integration with Tactical Data Fabric; support to exercises and experiments through Developmental Operations (DevOps) engagements and Soldier Touch Points with Combatant Commands (COCOMs) to inform the implementation of self-service capabilities, collaboration tools, data analytics and Command and Control (C2) Core Capabilities as part of a bridge to Next Generation C2 Effort; development of Cloud enabled CPCE and Edge Node computing infrastructure facilitating distributed command and control. Funding also provides for continuous testing of CPCE.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025**
Title: SW Dev - Core Infrastructure	22.646	35.556	22.038
Description: Provides the core software infrastructure that serves as the host for multiple warfighting functional applications within the command post at echelons Battalion to Army Service Component Command, eliminating "stove-piped" systems,			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
duplicative or redundant implementations, simplifying future application development efforts, and enhancing interoperability and data sharing across multiple echelons. Core software development efforts include the development of Tactical Data Fabric and Sustainment capabilities; Improved Geospatial capabilities; Improved system administration tools, Integration of user feedback from Developmental Operations (DevOps) engagements, Soldier Touch Points with Combatant Commands (COCOMs), and backwards compatibility to previously fielded enduring systems. Software development efforts will focus on ensuring C2 Core capabilities in a bridge to Next Generation C2 and building a modular infrastructure suitable for Warfighting function application convergence. ***FY 2024 Plans:*** CPCE Increment 2 will focus on delivering Tactical Data Fabric and Sustainment capabilities, enhancing collaboration capabilities, migrating CPCE to a "Cloud Native" environment, and integrating transitioned Science & Technology (S&T) capabilities to include information trust capabilities as well as geospatial planning tools. FY2024 will also include addressing interoperability requirements, improving interoperability with Joint Services and Coalition partners and convergence of warfighting functions. Convergence of warfighting functions include new Intelligence applications onto CPCE; new engineering capabilities; and will accomplish convergence of Air Defense and Air Space Coordination capabilities and accelerated delivery of a combat power tool that enables a unit's logistical status and sustainment running estimate. In addition, efforts will focus on integration of user feedback from exercises and experiments through Developmental Operations (DevOps) engagements, Soldier Touch Points with Combatant Commands (COCOMs), U.S. Army Pacific (USARPAC) and U.S. Army Europe and Africa (USAREUR-AF) on the Tactical Data Fabric, Logistics Command and Control (C2) capabilities and Cloud Native Mission Command development efforts. CPCE Increment 3 development will begin in FY2024. ***FY 2025 Plans:*** FY2025 funding matures the tactical data fabric capability, to include continued work on the Combat Power tool; convergence of Warfighting functions applications through integration with Tactical Data Fabric; support to exercises and experiments through Developmental Operations (DevOps) engagements and Soldier Touch Points with Combatant Commands (COCOMs) to inform the implementation of self-service capabilities, collaboration tools, data analytics and C2 Core Capabilities as part of a bridge to Next Generation C2 Effort; development of Cloud enabled CPCE and Edge Node computing infrastructure facilitating distributed command and control. Funding also provides implementation of an "over-the-air" content delivery and provisioning capability. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to additional funding provided in FY2024 for implementation of Tactical Data Fabric and Sustainment capabilities.			
Title: Hardware/Software Integration	2.376	1.192	1.610
Description: The Tactical Server Infrastructure (TSI) server stacks host multiple software services including but not limited to: SQL, Chat, Active Directory, Microsoft Exchange, SharePoint, and CPCE. Primary Hardware/Software integration tasks include			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
developing the automation that reduces the time it takes to set up, manage and ensure updated security postures for the TSI environment on a recurring basis as well as required V3 test assets. ***FY 2024 Plans:*** In FY2024 the Hardware/Software integration effort will focus on transitioning the current TSI hardware configurations to a Server Edge Node configuration which supports cloud objectives as established in the Army Unified Network Strategy. In addition the FY2024 integration effort will focus on improving system automation to enable it to run on any server type. ***FY 2025 Plans:*** In FY2025, the Hardware/Software integration effort will continue optimizing TSI hardware configurations to a Server Edge Node which supports cloud objectives as established in the Army Unified Network Strategy, as well as integration work with the Army's Enterprise Private Cloud (AEPC) infrastructure. Integration efforts will also focus on improving system automation utilizing the TSI V3. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase due to efforts meeting TSI V3 integration requirements and AEPC in FY25.			
Title: Test and Evaluation ***Description:*** The CPCE/TSI Integrated Test Strategy featured developmental testing, multiple integration and risk reduction events, as well as interoperability testing, Soldier Touch Points (STPs) and large-scale operational test events. As part of the continuous integration/continuous delivery approach, the test strategy will be modified to focus on lab-based assessments, STPs and DevOps in operational environments and scope-focused operational assessments to inform software materiel releases and support capability fielding. ***FY 2024 Plans:*** CPCE will complete an Operational Test for CPCE Increment 2, Software Acceptance Tests, multiple Developmental Tests, multiple Soldier Touch Points, Cloud Native Mission Command Tests and Army Interoperability Certification test events. In addition to CPCE testing, the TSI hardware will complete multiple Soldier Touch Points and Developmental Tests as well as support the CPCE Operational Test. ***FY 2025 Plans:*** FY2025 continuous testing throughout CPCE development incorporating lab-based assessments, operational environments, and Soldier feedback. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	0.820	6.288	1.065

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease due to the completion of major testing in FY24 and pivot to continuous testing approach in FY25.			
Title: Program Management	1.131	2.453	2.351
Description: Program management includes efforts related to the management and operations of the Product Management office. Includes matrix and contractor personnel, program planning meetings, IPTs, and market research activities related to the potential adoption of new technology solutions into the CPCE baseline. ***FY 2024 Plans:*** Program office management of engineering, logistics teams, Software (SW) development, system engineering, exercise support, and testing remains a requirement in FY24. This support includes personnel covered by Functional Support Agreements between PM Mission Command and various Government support agencies such as the U.S. Army Combat Capabilities Development Command (DEVCOM) Armaments Center. and the U.S Army Communications and Electronics Command (CECOM) Software Engineering Center (SEC). ***FY 2025 Plans:*** Program office management of engineering, logistics teams, SW development, system engineering, exercise support, and testing remains a requirement in FY25. This support includes personnel covered by Functional Support Agreements between PM Mission Command and various Government support agencies such as the U.S. Army Combat Capabilities Development Command (DEVCOM) Armaments Center. and the U.S Army Communications and Electronics Command (CECOM) Software Engineering Center (SEC). ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to the required level of matrix and contractor support commensurate with planned activities in FY2025.			
Accomplishments/Planned Programs Subtotals	26.973	45.489	27.064

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• B70000: *COE Tactical Server Infrastructure (TSI)*	90.387	77.999	61.772	-	61.772	60.665	60.651	60.626	61.432	Continuing	Continuing

Remarks

Related to CPCE is the Tactical Server Infrastructure (TSI) funding line, B70000, which funds computer hardware and software servers/hosting platforms for CPCE software.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

D. Acquisition Strategy

The initial Increment of CPCE (CPCE Inc 0) and TSI capabilities are based on Minimum Essential Capability (MEC) requirements specified in the Army's Directed Requirements for Command Post capabilities. The subsequent increments of CPCE and TSI requirements are codified within Joint Capabilities Integration and Development System (JCIDS) documents including the COE Information System Initial Capabilities Document (COE IS ICD), CPCE Requirements Definition Package (RDP) and TSI RDP. These JCIDS documents comprise an Information Technology (IT) Box construct, valid in five (5) year blocks. Each IT Box is revised/renewed for a follow-on 5-year block.

Requirements are further codified in Mission Command Center of Excellence (MCCoE) Capability Drop (CD) documents that contain Warfighting Function Operational Need summaries and detailed requirements sponsored by respective Army Centers of Excellence. In addition to these documents, CPCE will also incorporate technical requirements from other sources such as PEO C3T technical working groups (TWGs), Network Cross Functional Team (N-CFT) design goals and directives, Cyber COE TWGs, user feedback resulting from Development Operations (DevOps) as Operational Incident Tickets (OIT), and emerging/future warfighting functional requirements already in draft form. As the capabilities continue to evolve, those capabilities are captured in the form of CDs to adapt to changes in the field.

The acquisition strategy for CPCE/TSI program is based upon the concept of Buy and Adapt, whereby the Government procures commercial technology and adapts it to meet specific Government requirements. CPCE/TSI consists of the integration of Commercial off the Shelf (COTS) hardware components, COTS software, and sequentially developed additional software capabilities.

The original CPCE strategy called for an Incremental development approach to meeting the requirements. In FY2024 CPCE transitioned to a continuous improvement construct with no further increments. The current version of CPCE software will bring enhancements to existing capabilities, in addition will continue maturation of capabilities like Tactical Data Fabric, Logistical applications, and additional convergence of warfighting functions. Future CPCE design and development will focus on Agile development, modular architecture, and user centric self-service tools enabling a set of bridge capabilities for Next Generation C2. CPCE will continue warfighting function convergence within a hybrid architecture that supports Distributed Command and Control. CPCE will also set the framework of data analytics functionality, nonrecurring engineering of Cross Domain Solutions for Mission Partner Environment, and continue addressing mission partner objectives outlined in the Army Unified Network Strategy.

CPCE/TSI is an Acquisition Category II program, initially structured in Increments delivering capability every two years. Each Increment (0-1) contained an initial (year one) and final (year two) capability release. Follow-on versions of CPCE will follow a continuous agile development, testing, and delivery/fielding construct to provide more frequent software capabilities improvements to the Warfighter. This will include emphasis on industry partner capabilities and competition to facilitate best of breed development efforts.

The Product Management Office delivers the CPCE core infrastructure (underlying basis for convergence), Movement & Maneuver capabilities, and Logistics Command and Control (C2) capabilities. The Program Management Office continues to fund developmental and convergence work that enhances the capabilities of the core infrastructure to align with integration efforts, while external organizations such as other Army Programs of Record and S&T organizations fund the development of specific warfighting capabilities and technologies for integration into the core framework. Integrated testing is conducted continually with lab-based testing, Soldier Touch Points to gather User feedback, and operational testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (Gov't-Matrix)	IA	Various Matrix Orgs incl CECOM SEC, ILSC, PRD, et al) : APG, MD	8.483	1.043	Nov 2022	0.960	Nov 2023	1.064	Nov 2024	-		1.064	Continuing	Continuing	-
PM Support (SETA Contractor)	C/FFP	Multiple incl CACI and others : APG, MD	23.362	0.088	Nov 2022	1.493	Nov 2023	1.287	Nov 2024	-		1.287	Continuing	Continuing	-
		Subtotal	31.845	1.131		2.453		2.351		-		2.351	Continuing	Continuing	N/A

Remarks

Decrease due to the required level of matrix and contractor support commensurate with planned activities in FY2025.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development - Core Infrastructure	Option/ Various	CCDC - AC, Systematic : Picatinny, NJ APG, MD Centerville, VA	222.646	22.646	Nov 2022	35.556	Nov 2023	22.038	Nov 2024	-		22.038	Continuing	Continuing	-
Hardware / Software Integration	IA	Various Matrix Orgs incl CECOM SEC, CCDC - AC, ILSC, PRD, et al) : APG Md	28.147	2.376	Feb 2022	1.192	Feb 2023	1.610	Feb 2025	-		1.610	Continuing	Continuing	-
		Subtotal	250.793	25.022		36.748		23.648		-		23.648	Continuing	Continuing	N/A

Remarks

SW Development - Decrease due to additional funding provided in FY2024 for implementation of Tactical Data Fabric and Sustainment capabilities.
SW Development - Core Infrastructure leverages various Industry partners with a government integrator.
HW/SW Integration increase due to efforts meeting TSI V3 integration requirements and AEPC integration in FY25.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Develop and Conduct Tests and Assessments	MIPR	Multiple Test Agencies : Multiple Locations (Primary APG)	25.664	0.820	Feb 2022	6.288	Dec 2023	1.065	Dec 2024	-		1.065	Continuing	Continuing	-
		Subtotal	25.664	0.820		6.288		1.065		-		1.065	Continuing	Continuing	N/A

Remarks

Decrease due to the completion of major testing in FY24 and pivot to continuous testing approach in FY25.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	308.302	26.973		45.489		27.064		-		27.064	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

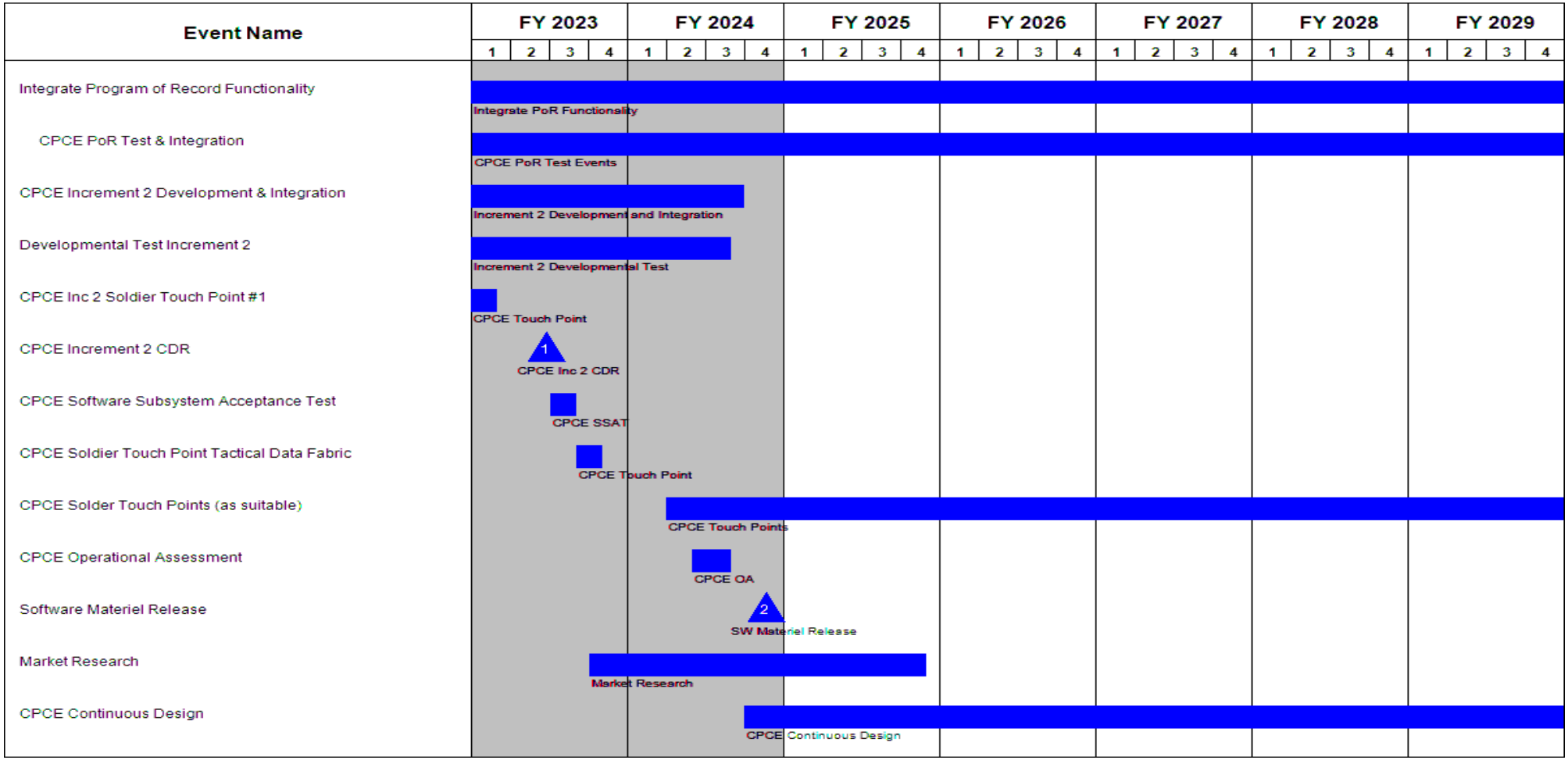


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

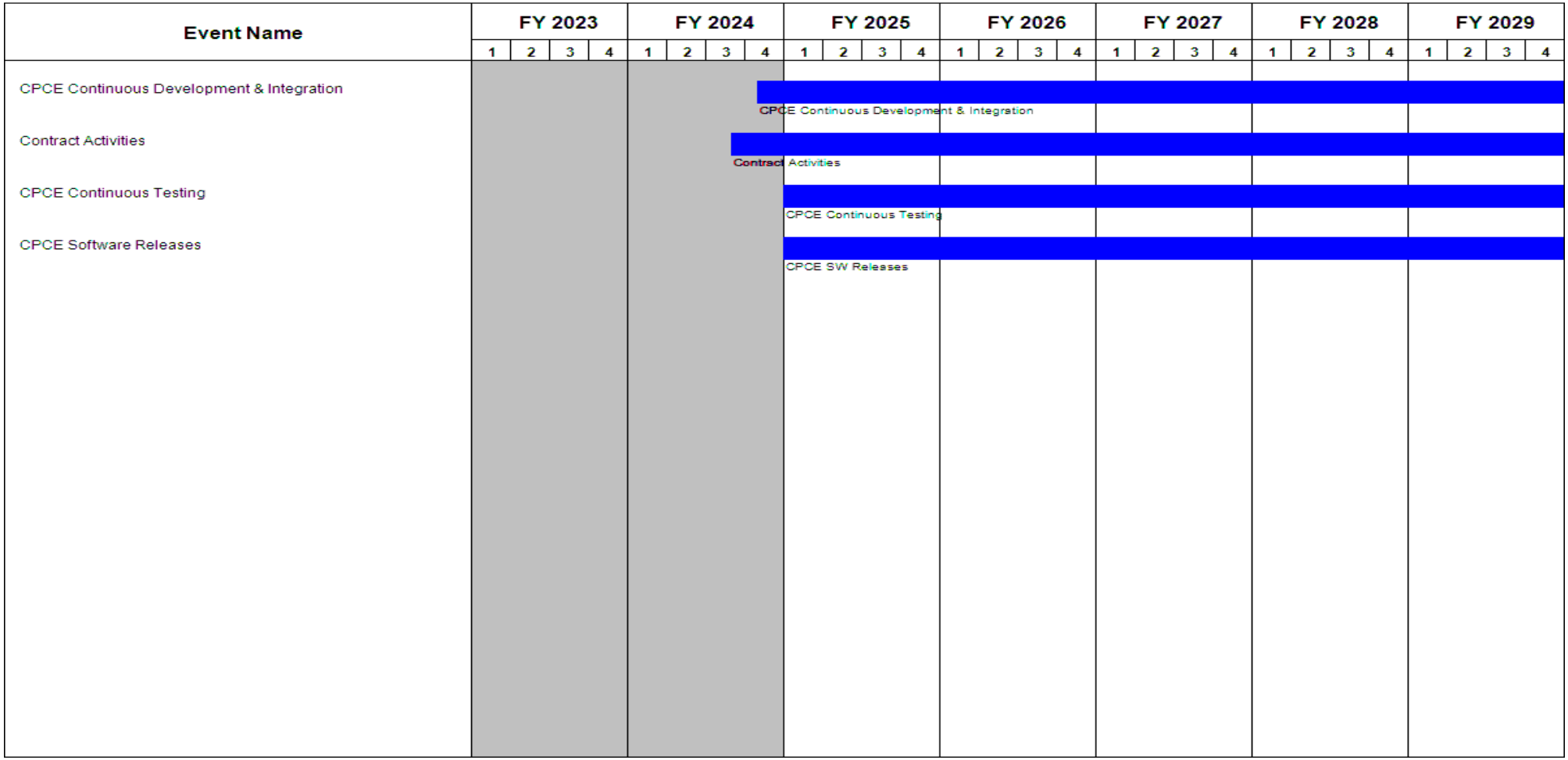


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Integrate Program of Record Functionality	2	2019	4	2029
CPCE PoR Test & Integration	1	2018	4	2029
CPCE Increment 1 Design	3	2019	2	2020
CPCE Increment 1 Development & Integration	2	2020	4	2021
Developmental Test Increment 1	3	2020	3	2022
CPCE Increment 1 Operational Assessment	3	2021	4	2021
Fielding Decision Increment 1	1	2022	1	2022
CPCE Increment 2 Design	1	2022	4	2022
CPCE Increment 2 Development & Integration	3	2022	3	2024
Developmental Test Increment 2	3	2022	3	2024
CPCE Inc 2 Soldier Touch Point #1	4	2022	1	2023
CPCE Increment 2 CDR	2	2023	2	2023
CPCE Software Subsystem Acceptance Test	3	2023	3	2023
CPCE Soldier Touch Point Tactical Data Fabric	3	2023	4	2023
CPCE Solder Touch Points (as suitable)	2	2024	4	2029
CPCE Operational Assessment	2	2024	3	2024
Software Materiel Release	4	2024	4	2024
Market Research	4	2023	4	2025
CPCE Continuous Design	4	2024	4	2029
CPCE Continuous Development & Integration	4	2024	4	2029
Contract Activities	3	2024	4	2029
CPCE Continuous Testing	1	2025	4	2029

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ4 / *COMMAND POST COMPUTING ENVIRONMENT (CPCE)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CPCE Software Releases	1	2025	4	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
EJ6: *TACTICAL ENHANCEMENT*	-	-	9.040	-	-	-	-	-	-	-	0.000	9.040
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is directly aligned to the Army Network Modernization Priority and supports the Army's strategy for Logistics Transport Convergence. Efforts are aligned to support the Network-Cross Functional Team capability set approach to achieve the network modernization strategy.

Troposcatter Transmission (TROPO): Tactical Enhancement supports the evaluation and testing requirements for TROPO capabilities procured and fielded under the Signal Modernization (SIGMOD) funding line, B00010. TROPO will provide redundancy communications in a Satellite Denied environment by providing improved Line of Sight and Beyond Line of Sight (BLOS) radio systems. Enables Mission Command in a Satellite Denied environment by providing BLOS capability over longer ranges and at higher throughput than the current BLOS System. TROPO extends the network by utilizing a significantly reduced SWaP radio verses the current system. TROPO will enable Army units to reduce reliance on costly satellite bandwidth.

COMMAND POST NETWORKING: Enables Command Post networking capabilities by providing communications solutions to enable a more survivable Command Post against near peer advisories. The solutions will utilize advanced waveform and antenna improvements to decrease radio frequency detection and interception in the battlefield and will be integrated onto the appropriate platforms to increase Command Post survivability.

STS: The Sustainment Transport System (STS) is a data transport capability through satellite communications (SATCOM) and an integrated component of the Unified Network providing unclassified communications to U.S. Army sustainment units in their support to the Warfighter. STS provides network connectivity and enables a SATCOM pathway for logistics, financial management, personnel, and health service support data to be exchanged on the battlefield between multiple echelons and enterprise data sources. The STS provides critical connectivity on the battlefield where the Integrated Tactical Network (ITN) and other communication systems do not extend to dispersed and forward deployed sustainment units.

STS is comprised of one SATCOM System to enable Beyond Line of Sight (BLOS) communication and enterprise access. Each SATCOM System is accompanied by Line of Sight (LOS) radio systems to extend service to distant enclaves, and Wireless Network Access (Wi-Fi) to connect subscriber computers within a local enclave. STS will be acquired as three Programs of Record (PORs) beginning in FY23: STS SATCOM (ACAT II), STS Wi-Fi (ACAT II), and STS LOS (ACAT III). FY24 funding supports the execution of an Initial Test and Evaluation (IOT&E) for each STS POR in FY24. No FY25 request for funding.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: STS SATCOM Test and Evaluation	-	3.500	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: These funds will be used to conduct an Initial Test and Evaluation (IOT&E) of the STS SATCOM System in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS SATCOM capability will be acquired as an ACAT II program to replace legacy equipment in the field as a distinct Major Capability Acquisition program. Milestone C decision on 4 April 2023 authorized entry into Low Rate Initial Production (LRIP). ***FY 2024 Plans:*** FY24 funding supports STS SATCOM Systems product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/ requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of STS SATCOM and will include Red Team Penetration Testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of STS SATCOM IOT&E in FY24. No FY25 request for funding.			
Title: STS Wi-Fi Test and Evaluation	-	2.640	-
Description: These funds will be used to conduct an Initial Test and Evaluation (IOT&E) of the STS Wi-Fi System in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS SATCOM capability will be acquired as an ACAT II program to replace legacy equipment in the field as a distinct Major Capability Acquisition program. Milestone C decision on 4 April 2023 authorized entry into Low Rate Initial Production (LRIP). ***FY 2024 Plans:*** FY24 funding supports STS Wi-Fi System product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of STS Wi-Fi and will include Red Team Penetration Testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease due to completion of STS Wi-Fi IOT&E in FY24. No FY25 request for funding.			
Title: STS LOS Test and Evaluation	-	2.900	-
Description: These funds will be used to conduct an Initial Test and Evaluation (IOT&E) of the STS LOS System in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS SATCOM capability will be acquired as an ACAT III program to replace legacy equipment in the field as a distinct Major Capability Acquisition program. Milestone C decision on 4 April 2023 authorized entry into Low Rate Initial Production (LRIP). ***FY 2024 Plans:*** FY24 funding supports STS LOS System product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of STS LOS and will include Red Team Penetration Testing. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of STS LOS IOT&E in FY24. No FY25 request for funding.			
Accomplishments/Planned Programs Subtotals	-	9.040	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• B00010: *Signal Modernization Program*	167.058	161.585	127.479	-	127.479	106.246	106.378	107.556	131.600	Continuing	Continuing
• BD3513: *CSS SATCOM*	60.879	56.804	60.850	-	60.850	64.114	64.283	64.507	65.070	0.000	436.507

Remarks

B00010: OPA funding line for Signal Modernization (SIGMOD): TROPO
BD3513: OPA funding line for CSS SATCOM: STS SATCOM, STS Wi-Fi, STS LOS

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

D. Acquisition Strategy

These funds will be used to conduct Initial Operational Tests and Evaluation (IOT&E) of STS SATCOM, STS LOS, and STS Wi-Fi Systems in order to facilitate integration into the Unified Network. This Acquisition Strategy enables the integration of proven Commercial-Off-The-Shelf (COTS) capabilities into existing Tactical Network nodes to expand and enhance network capacity and user access. The STS capabilities will be acquired as ACAT II and ACAT III programs to replace legacy equipment in the field as three distinct Major Capability Acquisition programs. Milestone C decisions on 4 April 2023 authorized entry into Low Rate Initial Production (LRIP).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
STS SATCOM Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	-	-		3.500	Feb 2024	-		-		-	0.000	3.500	-
STS Wi-Fi Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	-	-		2.640	Feb 2024	-		-		-	0.000	2.640	-
STS LOS Test and Evaluation	MIPR	ATEC : Aberdeen Proving Ground, MD	-	-		2.900	Feb 2024	-		-		-	0.000	2.900	-
		Subtotal	-	-		9.040		-		-		-	0.000	9.040	N/A

Remarks

TROPO Customer Test will be a Soldier Touch Point (STP) in March 2023, to evaluate multiple industry solutions. This will be supported and instrumented by Army Test and Evaluation Command (ATEC).

STS SATCOM Test and Evaluation: FY24 funding supports STS SATCOM System product development consisting of test assets that will be used during initial engineering tests and Army Test and Evaluation Command (ATEC) evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of the STS SATCOM System and will include Red Team Penetration Testing.

STS Wi-Fi Test and Evaluation: FY24 funding supports STS Wi-Fi System product development consisting of test assets that will be used during initial engineering tests and ATEC evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of the STS Wi-Fi System and will include Red Team Penetration Testing.

STS LOS Test and Evaluation: FY24 funding supports STS Line of Sight System product development consisting of test assets that will be used during initial engineering tests and the full ATEC evaluation of the STS capabilities/requirements including integration into the Unified Network. Test and evaluation will include verification/validation of the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). In addition, this funds ATEC personnel conducting the evaluation, any test tools and test range time that may be needed to conduct these tests, and associated travel costs. This funding will also be used to conduct a cyber assessment of the STS LOS System and will include Red Team Penetration Testing.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		9.040		-		-		-	0.000	9.040	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EJ6 / *TACTICAL ENHANCEMENT*	

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

FY24 funding supports the Initial Tests and Evaluation (IOT&E) of STS SATCOM, Wi-Fi, and LOS systems to verify/validate the approved capabilities/requirements in the Bridge to Future Networks (BFN) Capability Production Document (CPD) Rev 2 (dated 23 May 2022). This funding will support the integration of STS to function as a System of Systems including satellite time on Ka, Ku, and X bands. Test and evaluation personnel, instrumentation, data collection, travel, and analysis will also be supported. This funding will also be used to conduct a cyber assessment of the STS programs and will include Red Team Penetration Testing. No FY25 request for funding.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

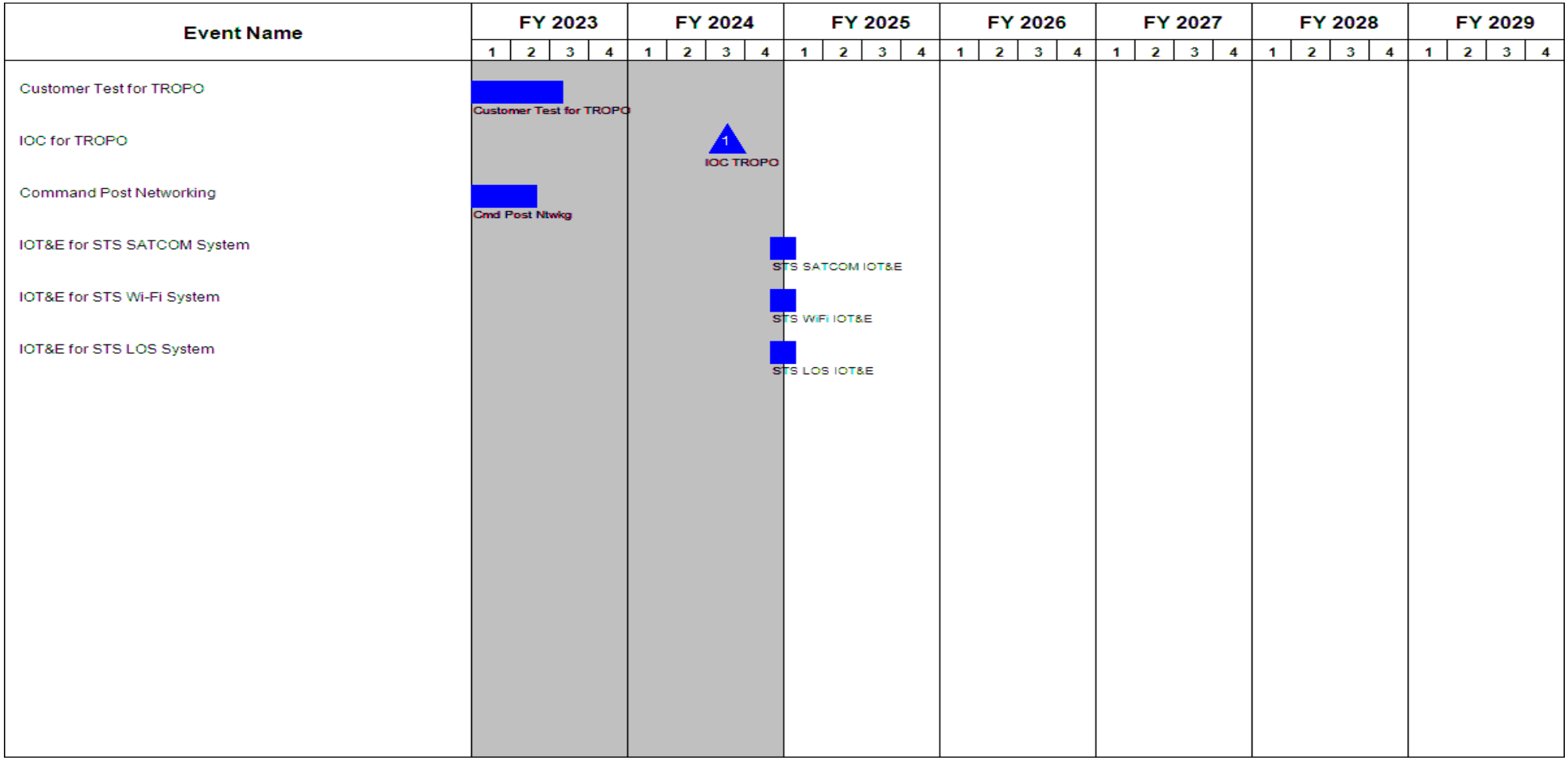


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EJ6 / *TACTICAL ENHANCEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Customer Test for TROPO	3	2022	3	2023
IOC for TROPO	3	2024	3	2024
Command Post Networking	4	2022	2	2023
IOT&E for STS SATCOM System	4	2024	1	2025
IOT&E for STS Wi-Fi System	4	2024	1	2025
IOT&E for STS LOS System	4	2024	1	2025

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	-	3.276	49.577	86.642	-	86.642	25.504	26.032	26.692	26.958	0.000	244.681
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Unified Network Operations (UNO) is a signature modernization effort designed to support the Army of 2030 and 2040 network capabilities objectives. UNO software development will provide continuous development of unified network components to meet the Army's prioritization of desired capabilities.

UNO is foundational to Army network modernization efforts that enhance network security, resiliency, and data exchange, and to the service's Unified Network (UN) vision - which integrates and converges enterprise and tactical networks. UNO is a series of integrated software-based solutions, designed to replace and consolidate existing Network Operations tools.

UNO will leverage an iterative software development approach, following Agile and Development, Security, and Operations (DevSecOps) approaches, for fully integrated cybersecurity capabilities and information dissemination management / content sharing (IDM / CS), including Army Zero Trust (ZT) initiatives (e.g., Identity, Credential, and Access Management (ICAM), to enable network mission command functions across the Enterprise and Tactical network environments.
UNO capabilities provide the key components of the UN across the Army. These components include streamlined and enhanced Network Planning and Device Configurations, Network Management and Monitoring tools, enhanced security and data exchange capabilities, including ICAM.

FY 2025 funding supports the competitive prototyping development, demonstration, assessments, and evaluation (including soldier feedback) of UNO solutions. Prototype solutions of integrated core Network Operations (NetOps) tools and functions will provide the foundational components of UNO including a Simplified User Interface (SUI), open network architectures, Application Program Interfaces (APIs) that enable access to the core NetOps tools (e.g., planning, management, monitoring, security), core NetOps tools, operations, and maintenance functions which enable plan/design, model and simulation, install, operate, maintain, sustain, and security of the network for tactical users. Prototype solutions of the core NetOps tools and functions will also demonstrate the ability integrate with prototype solutions for tactical ICAM (T-ICAM). UNO T-ICAM prototype solutions will provide instances of an Identity Service, Multi-Factor Authentication (MFA), automated account provisioning/ deprovisioning and access control based on identity attributes leveraging Army Master Identity Directory (AMID) (e.g., Attribute Based Access Control (ABAC)).

The UNO Middle Tier Acquisition (MTA) Rapid Prototyping effort is $83.712 million RDT&E from FY 2019 - FY 2024. The remainder of the UNO MTA is fully funded across the Future Years Defense Program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Management Services	-	2.466	3.015

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: Management Services provides Program Management Office (PMO) activities (e.g., contract(s) management, acquisition efforts, costs, program management) to ensure the program maintains cost, schedule, and performance parameters. ***FY 2024 Plans:*** Management Services funds will provide for PMO support activities to the Unified Network Operations (UNO) program, to include contracts management, logistical support, program and business management functions. ***FY 2025 Plans:*** Management Services funds will provide for Program Management Office (PMO) support activities to the Unified Network Operations (UNO) program, to include contracts management, logistical support, program and business management functions. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increased for additional PMO support activities, development and prototype contracts, and logistical support for UNO software solutions.			
Title: Product Development	3.276	41.088	73.945
Description: Product Development provides software development of Unified Network Operations (UNO) capabilities. UNO Middle Tier Acquisition (MTA) Rapid Prototyping provides Network Planning and Network Management capabilities to support weapon systems (e.g., tactical radios, Satellite Communications (SATCOM), Line of Sight (LOS) and Beyond Line of Sight (BLOS)) to Integrated Tactical Network (ITN) users. Network Planning includes the development of automated analysis processes, improved planning accuracy, and simplified configuration operations. Network Management includes the management, network status, and monitoring capabilities to allow users the ability to adjust the network to meet mission requirements. Embedded training of the Network Planning and Network Management prototypes provides soldiers with a consistent look and feel of the applications. The MTA prototype development served as a risk reduction effort (RRE) designed to inform the initial proof of concept of critical planning and management functions. The lessons learned from the prototype activities will inform future design and may consider these prototypes for implementation as part of future solutions. UNO Information Systems - Initial Capabilities Document (IS-ICD) requirements will expand UNO capabilities to provide the key components of the Unified Network (UN) across the Army. These components include streamlined and enhanced Network Planning and Device Configurations, Network Management and Monitoring tools, and enhanced security and data exchange capabilities, including identity, credential, and access management capabilities in support of Zero Trust. These components provide standardized, tailorable, and scalable capabilities across the UN. UNO Lower-Tier Tactical (LTT) and UNO Upper-Tier Tactical (UTT) will develop prototypes of the planning, management, monitoring, security, operations, and maintenance capabilities as a fully integrated suite of Network Operations (NetOps) tools for			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
tactical users. UNO LTT supports users at the Battalion (BN) and below formations, while UNO UTT supports users at Brigade (BDE) and above. UNO UTT will provide additional enhanced features for Artificial Intelligence (AI) and Machine Learning (ML). UNO Tactical Identity, Credential, and Access Management (T-ICAM) will develop prototypes of ICAM capabilities for tactical users within all tactical formations. Initial development will provide prototypes of ICAM data repository capabilities and solutions, Identity Provider (IdP) / Multi-Factor Authentication (MFA), automated Active Directory (AD) account provisioning and deprovisioning, and access control capabilities based on Authoritative Attributes. ***FY 2024 Plans:*** Product Development funds will provide for iterative software development of UNO capabilities. UNO MTA Rapid Prototyping product development includes software development of Network Planning and Network Management capabilities for the delivery of UNO prototype v1.1 software to support the overarching 2-year CS cycle for FY 2023 - FY 2024. Product Development supports the transition from rapid prototyping to fully integrated UNO capabilities in FY 2024 to support the UNO IS-ICD requirements. UNO IS-ICD product development includes software development of integrated Network and Enterprise Management Systems (NM/EMS), cybersecurity, and information dissemination management/content sharing (IDM/CS), including Zero Trust. UNO IS-ICD requirements will leverage and enhance existing prototypes to delivery NetOps tools/capabilities to develop and maintain critical situational awareness (SA) in all operational environments. NM/EMS software development results in designing, planning, configuration, operation, and maintenance functions (e.g., network and transports systems, cryptographic devices, servers, clients, end user devices, applications, and services). Cybersecurity capabilities will address cyber defense of the network that are threat agnostic; integrated with cyberspace operations, intelligence, and other information related capabilities to establish cyberspace defense in depth. IDM/CS provides information management planning; information discovery/delivery management; storage/cataloging of available information; and system administration functions. ***FY 2025 Plans:*** Product Development funds the competitive prototype development of UNO solutions.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Prototype development of LTT and UTT capabilities serve as the foundational components of UNO including a Simplified User Interface (SUI), open network architectures, Application Program Interfaces (APIs) that enable access to core NetOps tools (e.g., planning, management, monitoring, security), core NetOps tools, operations and maintenance functions which enable plan/design, model and simulation, install, operate, maintain, sustain, and security of the network for tactical users. These capabilities are intended to be interoperable and integrated with future UNO components and support NetOps across the tactical network (e.g., tactical radios and waveforms, transmission systems and components, deployed nodes, network devices, and software). Prototype development of T-ICAM capabilities will deliver Identity Provider (IdP) services, Multi-Factor Authentication (MFA), and automated provisioning/deprovisioning of access control leveraging identity attributes from Army Master Identity Directory (AMID) (e.g., Attribute Based Access Control)). These capabilities enable the use of multiple methods of authentication (e.g., Fast Identity Online 2 (FIDO2), MFA, etc.) and Active Directory (AD); multiple factors to verify Soldier identity (e.g., physical tokens, personal identification numbers (PIN), biometrics templates); and dynamic access control. These capabilities will demonstrate the ability to leverage industry standard protocols to provide ICAM services at the point of need in DDIL environments and enables the tactical environment to meet the DoD and Army Zero Trust requirements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increased for accelerated development of UNO capabilities to support Brigade (BDE) and above echelons and continued development of ICAM for tactical users.			
Title: Training Development ***Description:*** Training Development provides development of training materials in support of Unified Network Operations (UNO) Information Systems - Initial Capabilities Document (IS-ICD) requirements. Training development includes classroom training curriculums and subsequent training materials required to support Soldier training, allowing for maximum competency when operating UNO capabilities. ***FY 2024 Plans:*** Training Development funds will provide for development of training materials beginning in FY 2024 to support UNO IS-ICD requirements. Training development will support the iterative software development process and Development, Security, and Operations (DevSecOps) activities, including Soldier Touch Points (STPs) throughout the development cycle. ***FY 2025 Plans:*** Training Development funds will provide for development of training materials in FY 2025 to support UNO IS-ICD requirements. Training development will support the iterative software development process and Development, Security, Operations	-	1.509	1.963

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
(DevSecOps) activities, including Soldier Touch Points (STPs) and Operational User Assessments (OUAs) throughout the development cycle. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Funding increased for development of training curriculums and materials driven by acceleration of UNO capabilities to support Brigade (BDE) and above echelons and continued development of ICAM for tactical users for demonstration and soldier assessments of prototypes in FY 2025.			
Title: Test & Evaluation ***Description:*** Test & Evaluation provides funding to support testing and evaluation of Unified Network Operations (UNO) capabilities; ensures necessary certifications required to operate UNO capabilities across Army networks to support Department of Defense Information Networks (DODIN) operations are attained; ensures UNO capabilities are well integrated and interoperable across the Army's Unified Network (UN). ***FY 2024 Plans:*** Test & Evaluation funds will provide for the test and evaluation of UNO capabilities, acquiring the necessary certifications to operate UNO capabilities across Army networks for DODIN operations, and will ensure UNO capabilities are integrated and interoperable across the Army's UN. This includes the Office of the Director, Operational Test and Evaluation (DOT&E) and Army Test and Evaluation Center (ATEC) support, test lab and equipment (hardware/software), development test activities (quarterly software testing, annual Formal Qualification Testing (FQT) and cybersecurity testing), operational Soldier Touch Points (STPs), cybersecurity and penetration testing during STPs, testing range coordination, network configuration, and test documentation. ***FY 2025 Plans:*** Test & Evaluation funds will provide for the continuous integration, test, and evaluation of UNO capabilities, acquiring the necessary certifications to operate UNO capabilities across Army networks and Department of Defense Information Networks (DODIN) operations, and will ensure UNO capabilities are integrated and interoperable across the Army's Unified Network. This includes the Office of the Director, Operational Test and Evaluation (DOT&E) and Army Test and Evaluation Center (ATEC) support, test lab and equipment (hardware / software), continuous developmental test activities, operational Soldier Touch Points (STPs) / Operational User Assessments (OUAs), cybersecurity and penetration testing during STPs / OUAs, testing range coordination, network configuration, and test documentation. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	-	4.514	7.719

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Funding increased to support testing and certification driven by acceleration of UNO capabilities to support Brigade (BDE) and above echelons and continued assessment of ICAM for tactical users, which includes additional lab hardware and participation in OUAs in FY 2025.			
Accomplishments/Planned Programs Subtotals	3.276	49.577	86.642

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• EW3: *Unit Task Reorganization (UTR) Development*	13.295	-	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• B99418: *UNIFIED NETWORK OPERATIONS (UNO)*	-	-	37.695	-	37.695	5.379	6.064	6.430	6.495	0.000	62.063

Remarks

In accordance with National Defense Authorization Act (NDAA) funding policy for Middle Tier Acquisition (MTA) programs, Unified Network Operations (UNO) MTA Rapid Prototyping leverages funds from Unit Task Reorganization (UTR) 0604818A/EW3 and Tactical Network Operations Management (TNOM) 0604818A/EK9 to achieve its required funding levels.

UTR 0604818A/EW3 funding has been re-aligned to TNOM 0604818A/EK9 beginning in FY 2024.

In FY 2025, Unified Network Operations (UNO) BA9301 / B99418 provides the procurement funding to procure and deploy the UNO software releases developed under the Tactical Network Operations Management (TNOM) 0604818A / EK9 funding line.

D. Acquisition Strategy

Tactical Network Operations Management (TNOM) supports software development, test, and integration of Unified Network Operations (UNO) capabilities (Lower-Tier Tactical (LTT), Upper-Tier Tactical (UTT), Identity, Credential, and Access Management (ICAM), Managed Data, Installation, and Strategic).

On 12 October 2023, the Army Requirements Oversight Council (AROC) approved the revised UNO Information Systems - Initial Capabilities Document (IS-ICD) Information Technology (IT) Box cost thresholds to include UNO Lower-Tier Tactical (LTT), Upper-Tier Tactical (UTT), and Identity, Credential, and Access Management (ICAM) (enterprise and tactical) requirements. This decision supported approvals by the AROC Capabilities Board (ACB) of the UNO IS-ICD subordinate Requirements Definition Packages (RDPs) for LTT (24 March 2023), UTT (15 June 2023), and ICAM (01 November 2023). The UNO Managed Data, Installation, and Strategic RDPs are expected to be approved in FY 2024.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

Approval of the above requirements documents supports the close out of the UNO Middle Tier Acquisition (MTA) Rapid Prototyping effort in FY 2024 and transition to multiple follow-on acquisitions programs approved by the Army Acquisition Executive (AAE). The AAE conducted a series of Acquisition Shaping Panels (ASPs) to identify and approve the acquisition approaches for these programs. On 05 July 2023, the AAE signed a memorandum authorizing the use of the Software Acquisition Pathway for development, testing, and integration of UNO LTT capabilities. Memorandums authorizing UNO UTT and UNO Tactical ICAM (T-ICAM) acquisition approaches are expected in FY 2024.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office	Various	Various : Various	-	-		2.466	Nov 2023	3.015	Nov 2024	-		3.015	0.000	5.481	-
		Subtotal	-	-		2.466		3.015		-		3.015	0.000	5.481	N/A

Remarks

Management Services funds increased to provide additional PMO support activities to establish and manage development and integration contracts, provide additional logistical support and program management for development of UNO IS-ICD software releases.

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	Various : Various	16.530	3.276	Jan 2023	-		-		-		-	0.000	19.806	-
UNO LTT/UTT Software Development	Various	To Be Determined : To Be Determined	-	-		41.088	Nov 2023	63.486	Nov 2024	-		63.486	0.000	104.574	-
UNO T-ICAM Software Development	TBD	To Be Determined : To Be Determined	-	-		-		10.459	Nov 2024	-		10.459	0.000	10.459	-
		Subtotal	16.530	3.276		41.088		73.945		-		73.945	0.000	134.839	N/A

Remarks

Product Development funds increased to include the iterative software development to meet UNO IS-ICD requirements for the development of UNO software releases.

The program anticipates awarding multiple Other Transactional Authority (OTA) Agreements in FY 2024, that will continue into FY 2025.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Training Development	Various	To Be Determined : To Be Determined	-	-		1.509	Mar 2024	1.963	Nov 2024	-		1.963	0.000	3.472	-
		Subtotal	-	-		1.509		1.963		-		1.963	0.000	3.472	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Support costs increased to support development of training curriculums and training materials required to support the DevSecOps approach, including STPs, throughout the software development cycle for UNO software releases.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Test and Evaluation	Various	To Be Determined : To Be Determined	-	-		4.514	Apr 2024	7.719	Nov 2024	-		7.719	0.000	12.233	-
		Subtotal	-	-		4.514		7.719		-		7.719	0.000	12.233	N/A

Remarks

Test & Evaluation funds increased to support testing and certification of fully integration Network and Enterprise Management System (NM/EMS) software, cybersecurity capabilities, and information dissemination management and content sharing (IDM/CS) to support UNO software releases.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.530	3.276		49.577		86.642		-		86.642	0.000	156.025	N/A

Remarks

Tactical Network Operations Management (TNOM) funding increased from $49.577 million in FY 2024 to $86.642 million in FY 2025. The increase is the result of the approval of subsequent Requirements Definition Packages (RDPs) to the Unified Network Operations (UNO) Information Systems - Initial Capabilities Document (IS-ICD) beginning in FY 2025.

This increased funding supports the continuation of software development, test and evaluation efforts towards development of fully integrated Unified Network (UN) capabilities within the tactical networks.

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

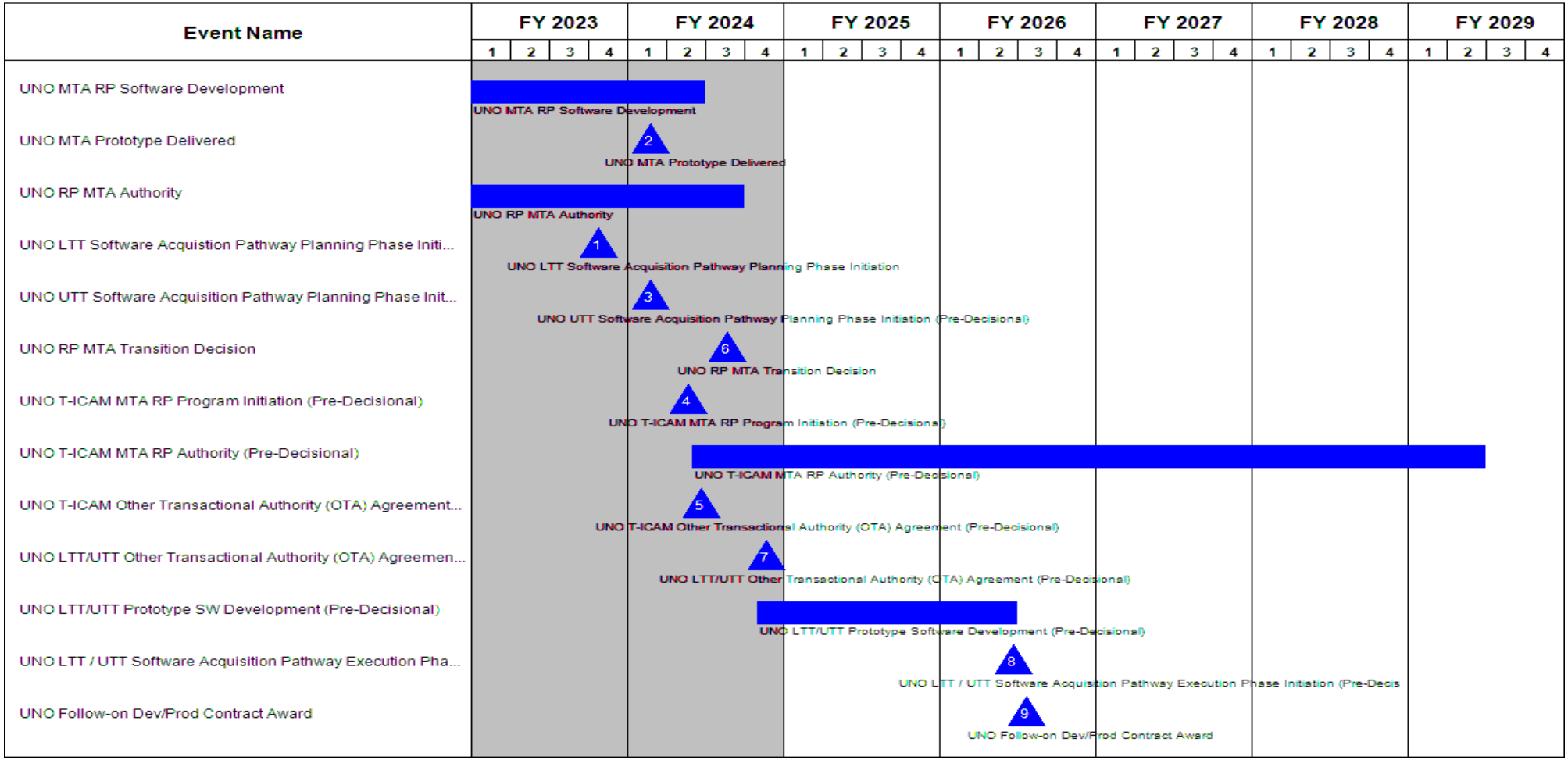


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

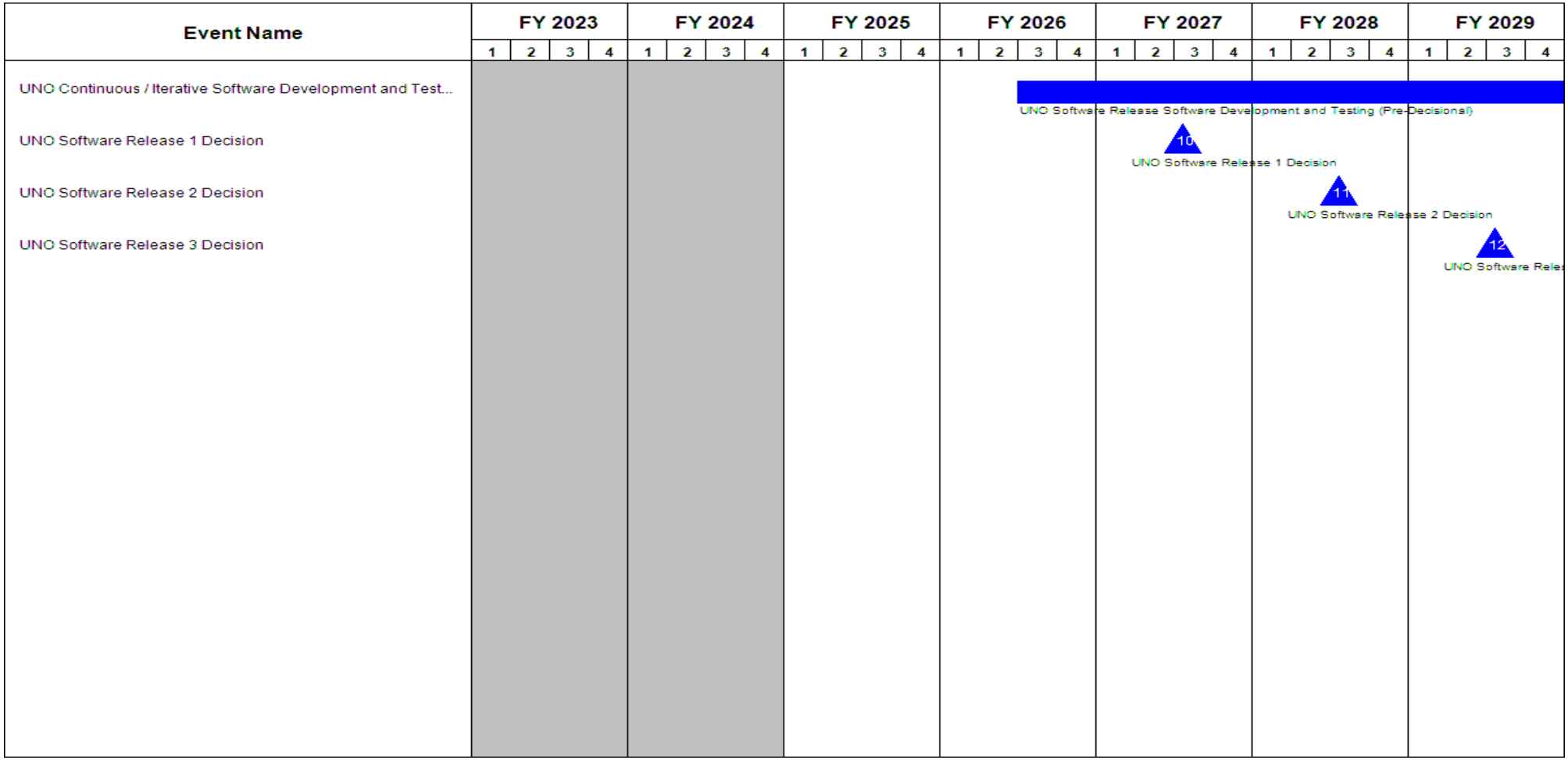


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EK9 / *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UNO MTA RP Software Development	2	2021	2	2024
UNO MTA Prototype Delivered	1	2024	1	2024
UNO RP MTA Authority	3	2019	3	2024
UNO LTT Software Acquistion Pathway Planning Phase Initiation	4	2023	4	2023
UNO UTT Software Acquisition Pathway Planning Phase Initiation (Pre-Decisional)	1	2024	1	2024
UNO RP MTA Transition Decision	3	2024	3	2024
UNO T-ICAM MTA RP Program Initiation (Pre-Decisional)	2	2024	2	2024
UNO T-ICAM MTA RP Authority (Pre-Decisional)	2	2024	2	2029
UNO T-ICAM Other Transactional Authority (OTA) Agreement (Pre-Decisional)	2	2024	2	2024
UNO LTT/UTT Other Transactional Authority (OTA) Agreement (Pre-Decisional)	4	2024	4	2024
UNO LTT/UTT Prototype SW Development (Pre-Decisional)	4	2024	2	2026
UNO LTT / UTT Software Acquisition Pathway Execution Phase Initiation (Pre-Decisional)	2	2026	2	2026
UNO Follow-on Dev/Prod Contract Award	3	2026	3	2026
UNO Continuous / Iterative Software Development and Testing (Pre-Decisional)	3	2026	4	2029
UNO Software Release 1 Decision	3	2027	3	2027
UNO Software Release 2 Decision	3	2028	3	2028
UNO Software Release 3 Decision	3	2029	3	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
EQ8: *Mobile/Handheld Computing Environment (M/HHCE)*	-	5.105	7.549	10.332	-	10.332	13.113	14.587	5.419	5.473	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project EQ8, Mobile/Handheld Computing Environment (M/HHCE), is one of the six computing environments (CEs) formalized by the Army Acquisition Executive (AAE) under the Common Operating Environment (COE) initiative and supports the Nett Warrior (NW) also known as the Ground Soldier Systems (GSS) program. The program leverages commercial smart devices and secure Army tactical radios, Commercial 4G/LTE/WIFI and cloud-based infrastructure to provide the dismounted leader an integrated mission command and situational awareness system for use during combat operations. The NW system provides leaders electronic real-time information on friendly positions; information about enemy activity and movement; navigational data and map imagery; a collaborative planning tool; and other mission related graphics which effectively puts the power of the entire Army tactical network in the hands of the dismounted leader. The NW hardware is the computational platform that other M/HHCE systems run their applications. The M/HHCE will provide incremental improvements with additional application capabilities over time, and will be interoperable with Command Post CE and Mounted CE systems.

Nett Warrior (NW) and Integrated Visual Augmentation System (IVAS) are the instantiation of the M/HHCE and comply with the technical standards documented by the M/HHCE and provide the dismounted common computational platform for other products relevant to dismounted Soldiers. Through compliance with the M/HHCE, software applications from other programs are integrated with the NW and IVAS systems, reducing the need for duplicate hardware resulting in reduced Soldier Load. The M/HHCE is directly aligned to the Army Network Modernization Strategy Line of Effort (LOE) 1 (Unified Network). M/HHCE also supports the Army Network Modernization Strategy LOE 2 (Common Operating Environment). These efforts are aligned to the Army's Tactical Network Capability Set development and fielding plans by utilizing (1) interoperable data, message, and waveforms, (2) sensors and applications that enable operations across domains and automated tools to aid decision-making and (3) integration with Joint C4ISR and strike capabilities. NW leverages commercial smart phone devices and secure Army tactical radios to provide the dismounted leader an integrated mission command and situational awareness capability for use during combat operations. NW applied feedback from conventional and Special Operations units to procure and implement Secret and Secure But Unclassified (SBU) networking equipment for Brigade Combat Teams (BCTs) and the Security Force Assistance Brigades to enable faster, more flexible Mission Command data exchanges with Joint and Coalition forces while maintaining the existing integrated mission command capability with Mounted CE (e.g., Joint Battle Command - Platform (JBC-P)) system. NW uses Commercial-Off-The-Shelf (COTS) and Non-Developmental (NDI) computational & communication equipment to create a robust and flexible Integrated Tactical Network that enables faster and more accurate decision making in fights at the tactical level.

Requirements for the M/HHCE are established in the Army Requirements Oversight Council (AROC) approved COE Information Systems Initial Capability Document (IS ICD), the M/HHCE Requirements Definition Package (RDP), and the NW Capability Development Document in lieu of Capability Production Document. M/HHCE is a signature effort under the Network CFT (Common Operating Environment focused on dismounted Soldier). The Network CFT is one of the six Army modernization priorities per Army Modernization Strategy 2019. M/HHCE employs a Developmental and Security Operations (DevSecOps) process to incrementally develop capability

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

over time to satisfy requirements and meet fielding decisions. FY2025 funding will continue DevSecOps activities to incorporate new capability and enhancements based on user feedback and address provisioning of the Windows operating system in the Watchtower mobile device management system. Additionally, FY2025 funding provides for integration/test equipment and risk reduction events such as Project Convergence FY25, as well as funding to initiate Artificial Intelligence/Machine Learning (AI/ML)-based analytics into the Nett Warrior ecosystem and develop tools within the Intra-Soldier Wireless environment. FY2025 funding will also go to supporting product integration in pursuit of a Fused Awareness System (FAS) in accordance with the Situational Awareness Strategy (SAS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Test and Evaluation	0.315	1.210	2.619
Description: Test and evaluation efforts include the planning and conduct of combined COE events with Command Post/Mounted Computing Environment, Software Acceptance Testing, System Integration Events, Risk Reduction Events, Security Penetration Testing and Operational Assessment like annual Army Expeditionary Warrior Experiment (AEWE) to gain Soldier Touch point feedback on new capabilities. ***FY 2024 Plans:*** Conduct NW test and 3rd party applications evaluation for technical verification at developmental test events and user verification. Support NW as a baseline ITN/mobile CE system including conduct yearly environmental testing and Information Assurance penetration prevention testing for new commercial smart devices, software, and accessories. Support annual DevOps operational assessments to gain Soldier touch point feedback on emerging dismounted capabilities. ***FY 2025 Plans:*** Conduct NW test and 3rd party applications evaluation for technical verification at developmental test events and user verification. Support NW as a baseline ITN/mobile CE system including conduct yearly environmental testing and Information Assurance penetration prevention testing for new commercial smart devices, software, and accessories. Support annual DevSecOps operational assessments to gain Soldier touch point feedback on emerging dismounted capabilities. Support Project Convergence testing by providing NW equipment and by sending Field Support personnel to integrate, participate in interoperability events, train, operate, troubleshoot and provide fixes as required. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase due to start of Project Convergence FY25 test events.			
Title: Hardware and Software Integration and Evaluation for Capability Improvements	1.215	2.031	4.410
Description: Hardware and Software Integration and Evaluation for Capability Improvements ***FY 2024 Plans:*** Evaluate next End User Devices (EUD) and associated hardware components to stay aligned with commercial and Army evolving requirements. Provide NW software / hardware updates to support incorporation of 3rd party software applications onto NW EUD platform and cyber security testing. Support Defense Advanced Research Projects Agency (DARPA) integration and transition			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
of future technologies. Update software to M/HHCE standards as revised to maintain compliance with COE. Continue DARPA SHARE network server reduction infrastructure transition capability. Continue integration of PANTHER into NW, PANTHER leverages terrain features and EUD camera to provide a non-GPS based approach for determining a user's location. Continue integration and certification testing of Intra Service Wireless (ISW) Multi-Mode Body Area Network chipsets/packaging within NW system. Supports development, evaluation, and integration efforts for robotics controllers configurable to the mobile handheld computing environment. ***FY 2025 Plans:*** Evaluate next End User Devices (EUD) and associated hardware components to stay aligned with commercial and Army evolving requirements. Provide NW software / hardware updates to support incorporation of 3rd party software applications onto NW EUD platform and cyber security testing. Support Defense Advanced Research Projects Agency (DARPA) integration and transition of future technologies. Update software to M/HHCE standards as revised to maintain compliance with COE. Continue integration of PANTHER into NW; PANTHER leverages terrain features and EUD camera to provide a non-GPS based approach for determining a user's location. Continue DARPA SHARE network server reduction infrastructure transition capability. Continue integration and certification testing of ISW Multi-Mode Body Area Network chipsets/packaging within NW system. Supports Watchtower provisioning in the Windows operating system. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase due to Windows OS Watchtower provisioning in FY25 and expansion of ISW toolset, in addition to the start of universal controllers development and 2nd source qualification integration..			
Title: Software Development & Integration	1.190	3.290	2.128
Description: Funding is provided for the following efforts. ***FY 2024 Plans:*** Evaluate next generation NW / Android Team Awareness Kit (ATAK) map engines and Operating System (OS) trade studies software development efforts with NW. Update NW Software Development Kit (SDK) with new functionality. Continue software upgrades to ITN component software based on security and operational requirements. Continue incorporating the Army's Common Operating Environment (COE) Cross-Cutting Capabilities and Mobile HH RDP into NW software to support Capability Set (CS) 25 ITN. Complete NW tactical cloud IL5 ecosystem (SBU) to IL6 (to handle up to secret) integration efforts to allow for over the air updates to fielded NW systems for Security Technical Implementation Guide (STIG) compliance, OS, application updates and remote troubleshooting.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Support for emerging Mobile Handheld Computing Environment (CE) RDP (Requirements Definition Package) supporting CS25-CS29 next iteration of software requirements. ***FY 2025 Plans:*** Evaluate next generation NW / Android Tactical Assault Kit (ATAK) map engines and Operating System (OS) trade studies software development efforts with NW. Update NW Software Development Kit (SDK) with new functionality. Continue software upgrades to ITN component software based on security and operational requirements. FY2025 funding provides for integration/ test equipment and risk reduction events such as Project Convergence FY25, as well as funding to initiate of Artificial Intelligence/ Machine Learning (AI/ML)-based analytics into the Nett Warrior ecosystem. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to completion of FY24 one-year Windows OS software development and M/HHCE labor for the RDP.			
Title: Conduct SEPM Support to NW ***Description:*** Conduct Systems Engineering and Program Management Support ***FY 2024 Plans:*** Continue to conduct government systems / software engineering and program management support for NW program. Will collect input from Soldiers to improve NW and IVAS size, weight, power, lethality, safety and effectiveness via surveys. Will manage system configuration, and execute test, development and integration planning including investigation and analysis of emerging innovative commercial technologies to reduce the size, weight, power, cost, and increase NW, IVAS and ITN functionality. ***FY 2025 Plans:*** Continue to conduct government systems / software engineering and program management support for NW program. Will collect input from Soldiers to improve NW and IVAS size, weight, power, lethality, safety and effectiveness via surveys. Will manage system configuration, and execute test, development and integration planning including investigation and analysis of emerging innovative commercial technologies to reduce the size, weight, power, cost, and increase NW, IVAS and ITN functionality. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increased funding for product integration of FAS in accordance with SAS.	2.025	0.677	0.808
Title: M/HHCE Governance ***Description:*** Development of the M/HHCE standards and M/HHCE governance. ***FY 2024 Plans:*** Continue to provide Mobile Handheld Computing Environment (M/HHCE) governance and standards development for external	0.360	0.341	0.367

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
program integration with NW and IVAS to eliminate separate handheld devices and reduce Soldier load. Maintain compliance with overarching COE standards to continue support of CS25 ITN. ***FY 2025 Plans:*** Continue to provide Mobile Handheld Computing Environment (M/HHCE) governance and standards development for external program integration with NW and IVAS to eliminate separate handheld devices and reduce Soldier load. Maintain compliance with overarching COE standards to continue support of CS25 ITN. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase reflects planned lifecycle lines of effort.			
Accomplishments/Planned Programs Subtotals	5.105	7.549	10.332

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• R80501: *Ground Soldier System*	124.828	167.129	141.613	-	141.613	107.273	101.572	107.946	143.549	Continuing	Continuing

Remarks

D. Acquisition Strategy

To capitalize on commercial industry's investment in advanced smart device technology as well as innovation and changes within Army, Nett Warrior (NW) and IVAS require annual RDT&E funding for integration and evaluation of new technology. Through this process and at low cost, the Army is able to integrate and evaluate for combat utility the hundreds of millions spent in product development by the major commercial device manufactures. The NW program provides situational awareness and mission command to dismounted combat leaders through secure smart devices, a central power source, cables and the Integrated Tactical Network (ITN). NW system is currently the central element within the Mobile Handheld Computing Environment (Mobile HHCE) that other programs host their software. The Mobile HHCE is one of the six computing environments within the Army Common Operating Environment. NW and IVAS fund development and evaluation of new technology and software integration through a combination of competitively awarded contracts and Other Transaction Authorities (OTAs). Various existing follow on procurement contracts are utilized to procure a combination of COTs and GOTs equipment to include supporting services. Now in production, NW seeks operational feedback and uses the DevSecOps process to identify and implement new capabilities. M/HHCE standards are updated annually under the M/HHCE governance process.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering & Program Management Support	Various	Various : Various	8.271	2.025	Sep 2023	0.677	Sep 2024	0.808	Sep 2025	-		0.808	Continuing	Continuing	-
		Subtotal	8.271	2.025		0.677		0.808		-		0.808	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware/Software Integration & Evaluation	Various	Various : Various	16.603	1.215	Apr 2023	2.031	Apr 2024	4.410	Apr 2025	-		4.410	Continuing	Continuing	-
MHH Governance	MIPR	Various : Various	10.772	0.360	Jan 2023	0.341	Jan 2024	0.367	Jan 2025	-		0.367	Continuing	Continuing	-
		Subtotal	27.375	1.575		2.372		4.777		-		4.777	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Integration	Various	Various : Various	9.248	1.190	Apr 2023	3.290	Apr 2024	2.128	Apr 2025	-		2.128	Continuing	Continuing	-
		Subtotal	9.248	1.190		3.290		2.128		-		2.128	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various : Various	7.862	0.315	Jul 2023	1.210	Jul 2024	2.619	Jul 2025	-		2.619	Continuing	Continuing	-
		Subtotal	7.862	0.315		1.210		2.619		-		2.619	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*	

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	52.756	5.105		7.549		10.332		-		10.332	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

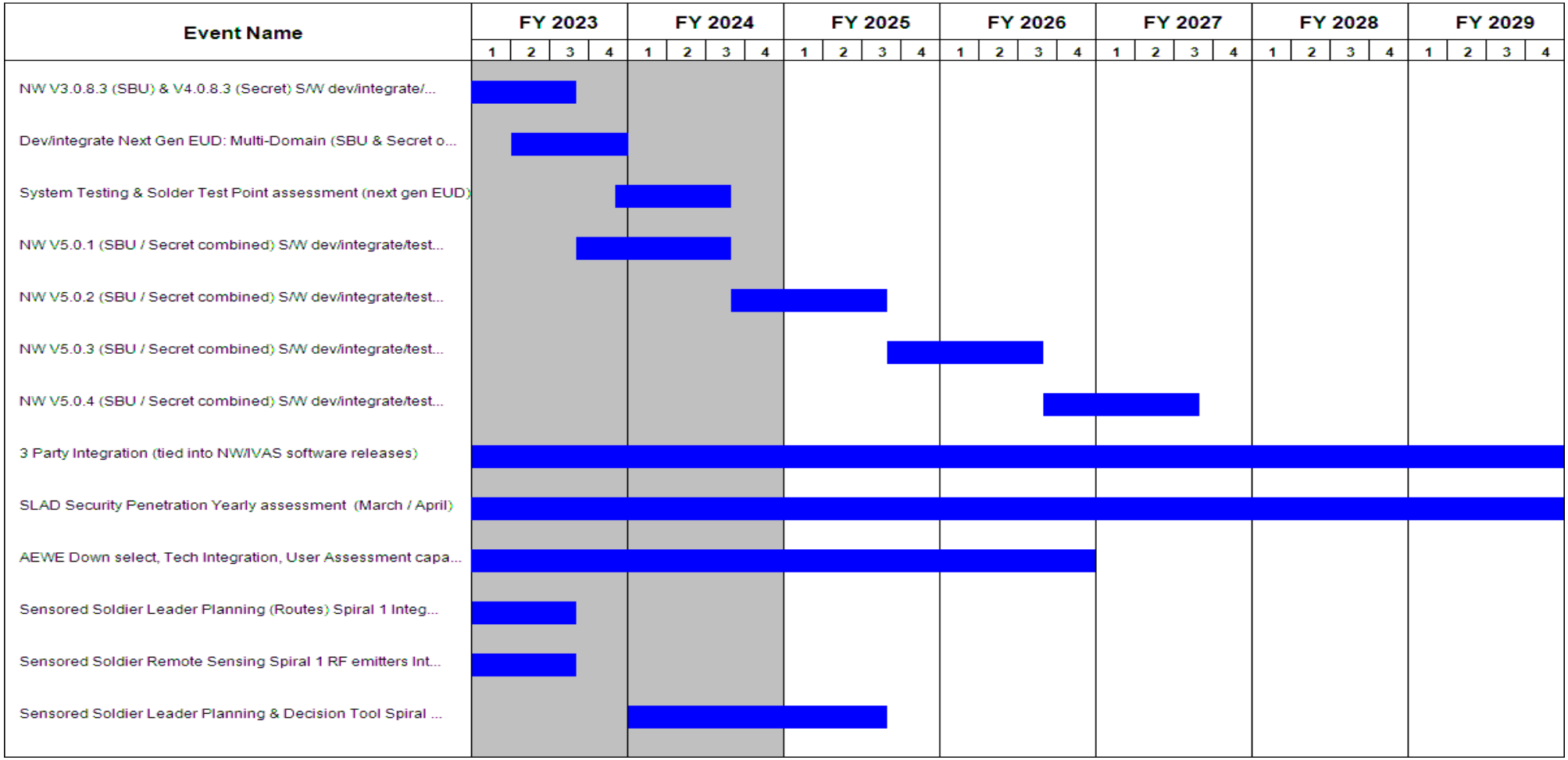


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

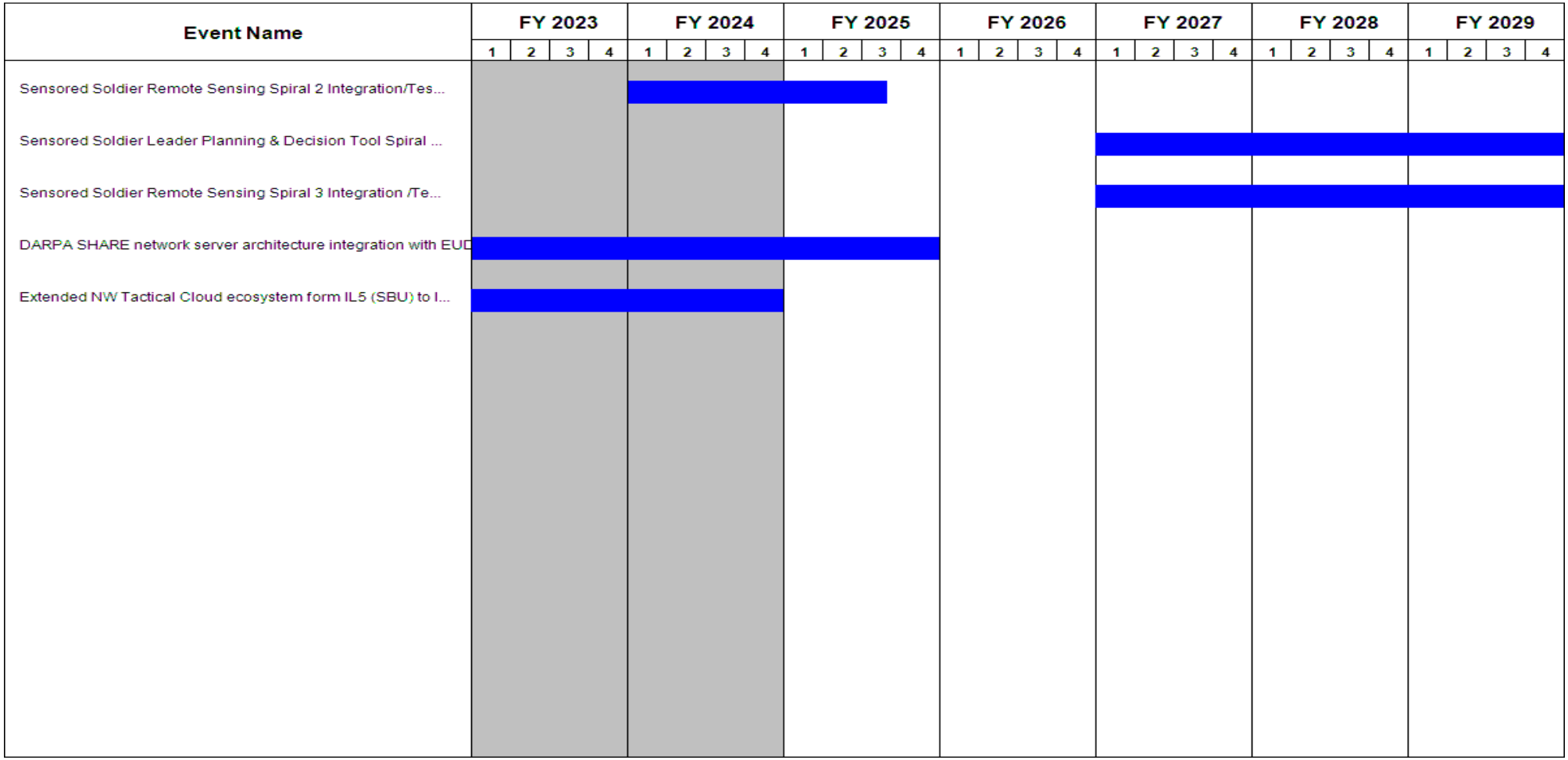


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EQ8 / *Mobile/Handheld Computing Environment (M/HHCE)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NW V3.0.8.3 (SBU) & V4.0.8.3 (Secret) S/W dev/integrate/test (M/HHCE & CS23 ITN)	3	2022	3	2023
Dev/integrate Next Gen EUD: Multi-Domain (SBU & Secret one device) (CS25 & CS27)	2	2023	4	2023
System Testing & Solder Test Point assessment (next gen EUD)	4	2023	3	2024
NW V5.0.1 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS25 ITN)	3	2023	3	2024
NW V5.0.2 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS25 ITN)	3	2024	3	2025
NW V5.0.3 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS27 ITN)	3	2025	3	2026
NW V5.0.4 (SBU / Secret combined) S/W dev/integrate/test (M/HHCE & CS27 ITN)	3	2026	3	2027
3 Party Integration (tied into NW/IVAS software releases)	1	2020	4	2029
SLAD Security Penetration Yearly assessment (March / April)	2	2021	4	2029
AEWE Down select, Tech Integration, User Assessment capability (Yearly)(May-Feb)	3	2020	4	2026
Sensored Soldier Leader Planning (Routes) Spiral 1 Integr /Testing (NW/IVAS tie)	1	2022	3	2023
Sensored Soldier Remote Sensing Spiral 1 RF emitters Integr/Testing (NW/IVAS tie	1	2022	3	2023
Sensored Soldier Leader Planning & Decision Tool Spiral 2 Integr/Testing (NW/IVA	1	2024	3	2025
Sensored Soldier Remote Sensing Spiral 2 Integration/Testing (NW/IVAS tie)	1	2024	3	2025
Sensored Soldier Leader Planning & Decision Tool Spiral 3 Integr/Testing (NW/IVA	1	2027	4	2029
Sensored Soldier Remote Sensing Spiral 3 Integration /Testing (NW/IVAS tie)	1	2027	4	2029
DARPA SHARE network server architecture integration with EUD	1	2023	4	2025
Extended NW Tactical Cloud ecosystem form IL5 (SBU) to IL6 (Secret)	2	2022	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) ER9 / *Expeditionary Army Command Post*				
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
ER9: *Expeditionary Army Command Post*	-	25.314	28.870	5.010	-	5.010	5.010	5.010	4.008	4.008	0.000	77.230
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Command Post Integrated Infrastructure (CPI2) invests in the design, prototype, and testing of the Mission Command Platform (MCP) and Command Post Support Vehicle (CPSV). Increment (Inc) 0 invested in the MCP/CPSV capability on the Family of Medium Tactical Vehicles (FMTV). Inc 1(Milestone B approved 12 June 2021) expanded the design capability to Stryker, Armored Multi-Purpose Vehicle (AMPV) and Joint Light Tactical Vehicle (JLTV).

A. Mission Description and Budget Item Justification

CPI2 addresses the Army requirements for more mobile, scalable, interoperable, and agile command posts. Currently fielded command posts are too large and take too long to setup and teardown making them vulnerable to near peer detection and targeting technologies. By integrating mission command warfighting functions onto formation appropriate vehicle platforms, a dispersed command post construct will enable the battle staff to blend in with the overall maneuver formation while giving the commander the ability to synchronize the close fight on the move. This dispersed mobile command post consists of MCP and CPSV. CPI2 capability, design, and development for the MCP and CPSV is accomplished on the FMTV platforms and shelter systems. The MCP is a formation appropriate vehicle that provides digital workstations for all mission command warfighting functions. The CPSV is the hub of the dispersed Command Post; it hosts mission command servers, radios, local area network components and a secure wireless capability.

Increment 1 initiated at Milestone B (ADM signed 12 June 2021); expands on the development, prototype, and testing of the MCP/CPSV from FMTV to the formation appropriate platforms (Stryker, AMPV and JLTV) and scalable command post sets, kits and outfits that were not designed in Increment 0. These combined capabilities will enable the Army to employ command posts across the operational spectrum, from early entry to major combat operations that will resolve current command post issues with set up and tear down, survivability, mobility, suitability, and footprint. The prototypes will be tested and will inform platform production decisions to align with CPI2 fieldings in future years.

FY 2025 funding continues Increment 1 efforts for prototyping to evolve CPI2 designs for on the move operation of the command post. Funding also provides for testing, logistical support, and program management.

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025**
Title: Product Development	13.513	17.252	2.610
Description: Includes the costs for design/integration/fabrication and prototyping of MCP, CPSV, and MCG platforms. These prototypes address capability gaps identified in current Army Command Post formations. Also includes equipment and ancillary items necessary to prototype a distributed CPI2 capability.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 Plans: FY 2024 funds support the Inc 1 design, engineering and prototype development of Mission Command Platforms and Command Post Support Vehicles for formation appropriate platforms (Stryker, AMPV and JLTV) through their existing platform contracts. Includes costs for development of a Towable Expeditionary Shelter Family of Systems for support to Division and Corps echelon. ***FY 2025 Plans:*** Continued prototyping to evolve CPI2 designs for on the move operation of the command post to accommodate power on the move, increased wireless capability and mobile command group functionality and scalable command post sets, kits and outfits. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to reduced scope of prototyping efforts.			
Title: Support Costs ***Description:*** Program costs for training and development of data packages. ***FY 2024 Plans:*** Funding supports Increment 1 updates to technical data packages, training for test events, as well as support to the Soldier Touch Points at CPI2 Division formation. ***FY 2025 Plans:*** Funding supports updates to the Inc 1 technical data packages and various unit engagements. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to reduced scope of Division Main experimentation.	3.375	3.800	0.600
Title: Systems Test and Evaluation ***Description:*** Costs required for test activities to inform CPI2 solution set. ***FY 2024 Plans:*** Conduct Increment 1 test events for formation appropriate vehicles (Stryker, APMV, JLTV) to obtain approval for production orders. Conduct the Safety Testing on the FMTV A2 Vehicle platform. ***FY 2025 Plans:*** Testing for the MCP/CPSV platforms and a Soldier Touch Point. ***FY 2024 to FY 2025 Increase/Decrease Statement:***	4.646	5.023	1.300

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease due to reduction of the number of test activities.			
Title: Program Office Management ***Description:*** Contractor/Matrix Labor support and program travel. ***FY 2024 Plans:*** Contract and Matrix personnel to support CPI2 Increment 1 in achieving mission requirements to include managing multiple design/prototyping efforts, test events and training. ***FY 2025 Plans:*** Contract and Matrix personnel to support CPI2 in achieving mission requirements to include managing multiple design/prototyping efforts, test events and training. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Decrease due to program transition to production.	3.780	2.795	0.500
Accomplishments/Planned Programs Subtotals	25.314	28.870	5.010

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• B29801: *CPI2*	50.455	78.512	20.039	-	20.039	15.029	-	-	-	Continuing	Continuing

Remarks

CPI2 OPA funding provides Mission Command Platforms and Command Post Support Vehicles. CPI2 OPA funding does not procure the FMTV, Stryker, AMPV or JLTV vehicle platforms, that funding resides with the programs of record for each vehicle platform.

D. Acquisition Strategy

CPI2 addresses the Army's requirements for a more mobile, scalable, interoperable, and agile command post. Currently fielded command posts are too large and take too long to setup and teardown making them vulnerable to near peer detection and targeting technologies. By designing/installing and fielding mission command warfighting functions on a vehicle platform, a battle staff can disperse its command posts and blend in with the overall maneuver formation, while giving commanders the ability to synchronize the close fight on the move via the Mission Command Platform (MCP) and Command Post Support Vehicle (CPSV). The MCP is a formation appropriate vehicle that provides digital workstations for mission command warfighting functions. The CPSV is the hub of the dispersed Command Post; it hosts mission command servers, radios, local area network components and a secure wireless capability.

CPI2 Increment 0 delivers initial MCP and CPSV capability to units as directed by the Army. The vehicle for this capability will be the Family of Medium Tactical Vehicles (FMTV). The vehicles are issued to CPI2 in alignment with the proposed fielding schedule. CPI2 is an integration program responsible for procuring hardware solutions

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

from existing Army contracts for installation on to the platform vehicles to produce the MCP and CPSV capability for Echelons Above Brigade. Annual CPI2 hardware quantities are driven by the number of units, and unit type, that CPI2 is forecasted to field.

CPI2 Increment 1 expands on the development and prototype/testing of the MCP/CPSV from FMTV-based capability to the Stryker, AMPV and JLTV platforms, and scalable command post sets, kits and outfits that were not designed in Increment 0. The prototypes will be tested and will inform platform production decisions to align with CPI2 fieldings in future years. The CPI2 capabilities will enable the Army to employ command posts across the operational spectrum, from early entry to major combat operations, that will resolve current command post issues with set up and tear down, survivability, mobility, suitability, and footprint.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) ER9 / *Expeditionary Army Command Post*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SETA Support	MIPR	TBD : Aberdeen Proving Ground, MD	2.163	1.780	Dec 2022	1.185	Dec 2023	0.250	Dec 2024	-		0.250	Continuing	Continuing	Continuing
Matrix Support	MIPR	Various : Aberdeen Proving Ground, MD	8.396	2.000	Dec 2022	1.610	Dec 2023	0.250	Dec 2024	-		0.250	Continuing	Continuing	Continuing
		Subtotal	10.559	3.780		2.795		0.500		-		0.500	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Stryker MCP Design/ Development	Allot	PM SBCT : Detroit, MI	27.125	9.156	Jan 2023	10.103	Jan 2024	-		-		-	Continuing	Continuing	Continuing
AMPV MCP Design/ Development	Allot	PM AMPV : Detroit Arsenal, MI	3.989	2.784	Jan 2023	2.949	Jan 2024	0.810	Jan 2025	-		0.810	Continuing	Continuing	Continuing
JLTV MCP/CPSV Design/ Development	Allot	PM JLTV : Detroit , MI	3.060	1.573	Jan 2023	1.900	Jan 2024	0.700	Jan 2025	-		0.700	Continuing	Continuing	Continuing
TESS Design/ Development	Allot	PdM FSS : Natick, MA	5.287	-		2.300	Nov 2023	-		-		-	0.000	7.587	-
MCP/CPSV/MCG Design Experimentation	TBD	TBD : TBD	-	-		-		1.100	Jan 2025	-		1.100	0.000	1.100	-
		Subtotal	39.461	13.513		17.252		2.610		-		2.610	Continuing	Continuing	N/A

Remarks

1) CPI2 funds existing contracts managed by Stryker, AMPV and JLTV to execute design/development/vehicle prototyping.
2) MCP/CPSV/MCG Design Experimentation supports the continued prototyping to evolve CPI2 designs for on the move operation of the command post to accommodate power on the move, increased wireless capability and mobile command group functionality and scalable command post sets, kits and outfits.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech Manuals/Training Development Packages	Various	Various : Various	4.958	1.320	Dec 2022	1.381	Dec 2023	0.200	Dec 2024	-		0.200	Continuing	Continuing	Continuing
Division Main Soldier Touch Point & Experimentation	Option/ Various	Various : Ft Bliss, TX	2.502	2.055	Dec 2022	2.419	Dec 2023	0.400	Dec 2024	-		0.400	Continuing	Continuing	-
		Subtotal	7.460	3.375		3.800		0.600		-		0.600	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Test and Evaluation	MIPR	Various : Various	6.634	4.646	Feb 2023	5.023	Nov 2023	1.300	Nov 2024	-		1.300	Continuing	Continuing	Continuing
		Subtotal	6.634	4.646		5.023		1.300		-		1.300	Continuing	Continuing	N/A

Remarks

1) System Test and Evaluation decrease is aligned with fewer test activities for the Stryker, AMPV and JLTV designs.

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	64.114	25.314		28.870		5.010		-		5.010	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

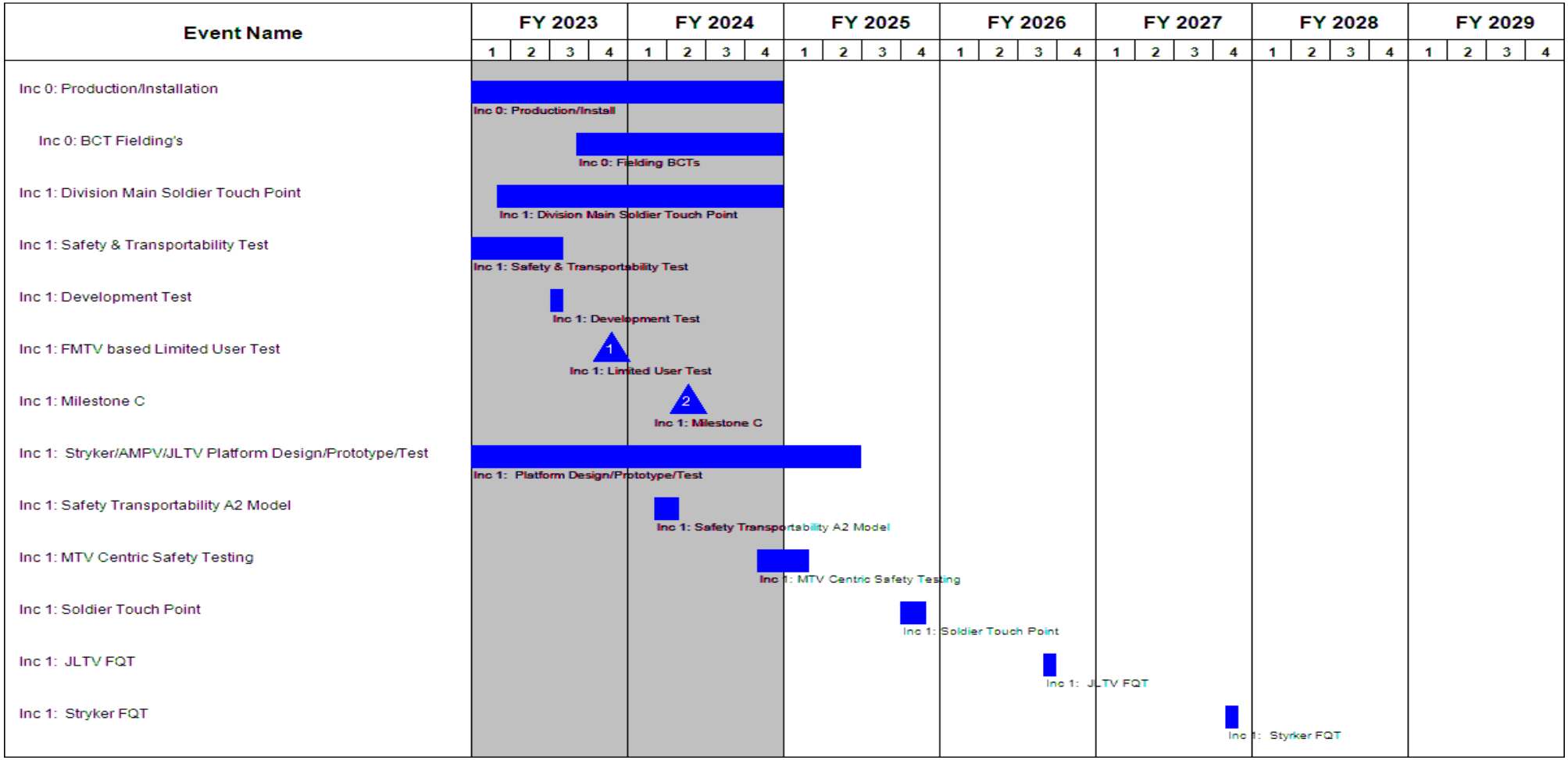


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

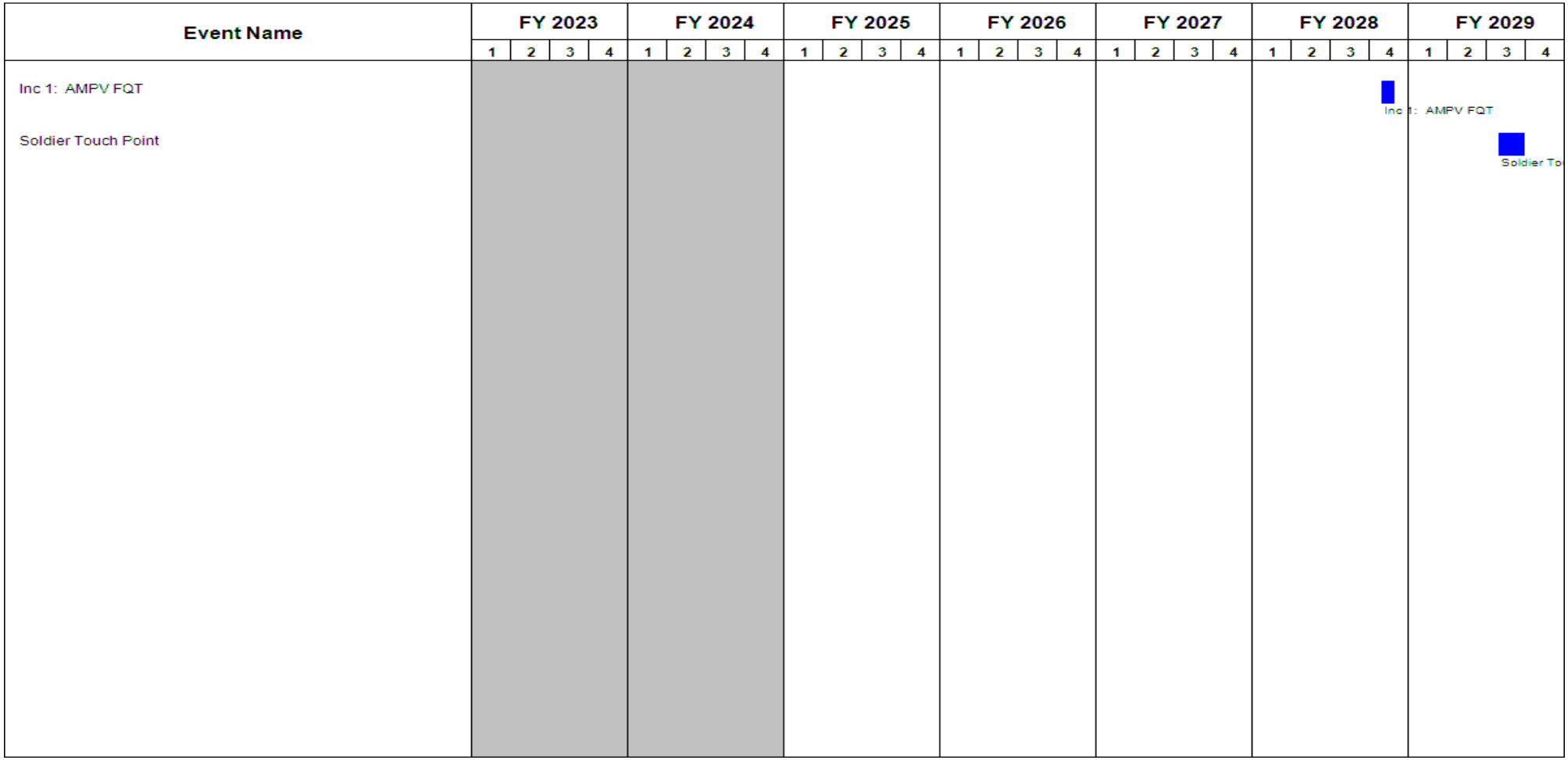


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Command Post Directed Requirement Signed	1	2018	1	2018
CPI2 MDD	3	2018	3	2018
Inc 0: MS A	2	2019	2	2019
Inc 0: Product Development (BCT Unit) -Gov't Design	2	2019	2	2021
Inc 0: BCT Unit Safety Release Testing	4	2020	2	2021
Inc 0: BCT Operational Assessment	4	2021	4	2021
Inc 0: Product Development (BCT Unit)- Elbit Design	4	2019	3	2021
Inc 0: BCT Safety Release Testing	1	2021	2	2021
Inc 0: BCT Operational Assessment	3	2021	3	2021
Inc 0: Engineering Changes	4	2021	2	2022
Inc 0: Milestone C	3	2022	3	2022
Inc 0: Production/Installation	4	2022	4	2024
Inc 0: BCT Fielding's	3	2023	4	2024
Inc 0: Division/MCG Development	4	2019	1	2022
Inc 0: Div/MCG Safety Release Test	3	2021	4	2021
Inc 0: Division Main /MCG New Equipment Training	4	2021	1	2022
Inc 0: Division Main/MCG Operational Assessment	1	2022	1	2022
Inc 1: Division Main Soldier Touch Point	1	2022	4	2024
Inc 1: Capablity Development Document Approved	3	2020	3	2020
Inc 1: Milestone B Brief	3	2021	3	2021
Inc 1: Safety & Transportability Test	4	2022	3	2023
Inc 1: Development Test	3	2023	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** ER9 / *Expeditionary Army Command Post*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Inc 1: FMTV based Limited User Test	4	2023	4	2023
Inc 1: Milestone C	2	2024	2	2024
Inc 1: Stryker/AMPV/JLTV Platform Design/Prototype/Test	3	2021	2	2025
Inc 1: Safety Transportability A2 Model	1	2024	2	2024
Inc 1: MTV Centric Safety Testing	4	2024	1	2025
Inc 1: Soldier Touch Point	4	2025	4	2025
Inc 1: JLTV FQT	3	2026	3	2026
Inc 1: Stryker FQT	4	2027	4	2027
Inc 1: AMPV FQT	4	2028	4	2028
Soldier Touch Point	3	2029	3	2029

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army												Date: March 2024
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*				Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*			
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
EW3: *Unit Task Reorganization (UTR) Development*	-	13.295	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Unit Task Reorganization (UTR) funding line supports the Army Network Plan Framework objective to deliver a Standards Based Network Architecture. This will enable modernizing the Mission Command Network through the coordination of a common set of network operations (NetOps) tools and infrastructure development supporting the unit communication staff's ability to conduct Network Planning, Network Provisioning, and Network Management, aligning with the Army's plan for a unified network. UTR provides an integrated planning tool suite; tools and technologies to provision and automate delivery of configurations; and replace stove-piped management systems with integrated tools providing detailed views of the network and its components. The UTR funding line, in accordance with the National Defense Authorization Act (NDAA) policy for Middle Tier Acquisition (MTA) funding, is leveraged by the Unified Network Operations (UNO) MTA Rapid Prototyping program to achieve its required funding levels.

The total cost of the UNO MTA Rapid Prototyping program is $83.7 million RDT&E from FY 2019 - FY 2024. The remainder of the UNO MTA is fully funded across the Future Years Defense
Program.

The UTR funding has been re-aligned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Network Management	11.386	-	-
Description: UTR introduces improvements to the way the network is managed, reducing closed management systems and replacing them with integrated tools that provide a consolidated, as well as detailed, view of the network and its components. The UTR software provides integrated management solutions for Transportable Tactical Command Communications (T2C2) and Scalable Class of Unified Terminals (SCOUT) systems, Satellite Transport Terminals (STTs), Tactical Communications Node - Lite (TCN-L) systems. UTR also provides initial Tactical Radio Integration Kit (TRIK) management interfaces. UTR leverages Integrated Tactical Network (ITN) and Capability Set (CS) schedules to conduct Soldier Touch Points (STPs) and demonstrate network management prototype capabilities to gain user feedback to improve network management software capabilities.			
Title: Program Management	1.909	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Description: The UNO Program Office will support the continuation of NetOps component development. The UNO Program Office will also support the transition of UNO MTA RP to a suitable acquisition pathway for software capability fielding in FY2024 to meet Unified Network requirements.			
Accomplishments/Planned Programs Subtotals	13.295	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• EK9: *TACTICAL NETWORK OPERATIONS AND MANAGEMENT*	3.276	49.577	86.642	-	86.642	25.504	26.032	26.692	26.958	0.000	244.681

Remarks

In accordance with the National Defense Authorization Act (NDAA) policy for Middle Tier Acquistion (MTA) programs, Unified Network Operations (UNO) MTA Rapid Prototyping leverages funds from Unit Task Reorganization (UTR) 654818 / EW3 and Tactical Network Operations Management (TNOM) 654818 / EK9 to achieve its required funding levels.

The UTR funding has been re-aligned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

D. Acquisition Strategy

Unit Task Reorganization (UTR) is an overarching effort that supports the establishment of a standards-based network architecture and integration of requirements across multiple efforts in the tactical network. UTR resources are applied directly to current products which are modified through Engineering Change Proposals and Modified Work Orders to comply with network standards. This enables current systems to share the information, reducing time and task for soldiers as well as new systems to access the network. Efforts are enduring to react to evolving prioritization of requirements.

The UTR funding has been realigned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604818A / *Army Tactical Command & Control Hardware & Software*	Project (Number/Name) EW3 / *Unit Task Reorganization (UTR) Development*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Various : Various	-	1.909	Nov 2022	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	-	1.909		-		-		-		-	Continuing	Continuing	N/A

Product Development ($ in Millions)

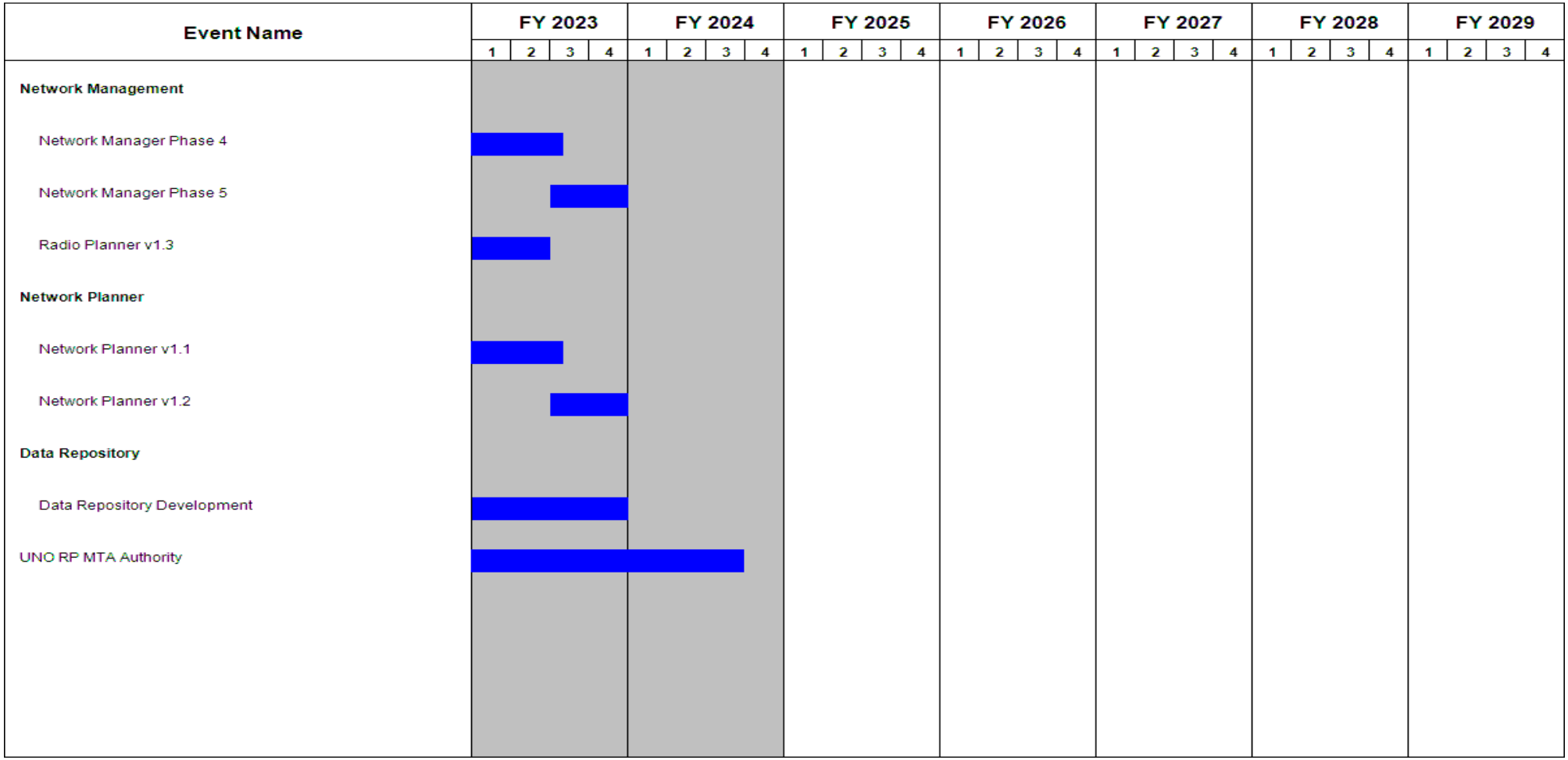
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Network Management	C/FFP	Various : TBD	55.721	11.386	Nov 2022	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	55.721	11.386		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	55.721	13.295		-		-		-		-	Continuing	Continuing	N/A

Remarks

Beginning in FY 2024, UTR RDTE funding has been realigned to UNO (PE 0604818A, Project EK9).

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*



Note

The UTR funding has been realigned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604818A / *Army Tactical Command & Control Hardware & Software*	**Project (Number/Name)** EW3 / *Unit Task Reorganization (UTR) Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Network Management	1	2019	3	2024
Network Manager Phase 3	2	2021	3	2022
Network Manager Phase 4	3	2022	3	2023
Network Manager Phase 5	3	2023	4	2023
Radio Planner	1	2019	2	2021
Radio Planner v1.3	1	2021	2	2023
Network Planner	1	2020	4	2023
Network Planner v1.0	3	2021	3	2022
Network Planner v1.1	3	2022	3	2023
Network Planner v1.2	3	2023	4	2023
Network Provisioning	1	2019	4	2021
Radio Provisioning	1	2019	4	2022
Radio Provisioner x.1	1	2021	4	2021
Data Repository	1	2019	3	2024
Data Repository Development	1	2021	4	2023
Radio Standards version x.1	4	2020	4	2021
UNO RP MTA Authority	3	2019	3	2024

Note

The UTR funding has been re-aligned to the Tactical Network Operations Management (TNOM) 654818 / EK9 funding line beginning in FY 2024.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Army											Date: March 2024	
Appropriation/Budget Activity 2040: *Research, Development, Test & Evaluation, Army* / BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*							
COST ($ in Millions)	**Prior Years**	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**	**FY 2026**	**FY 2027**	**FY 2028**	**FY 2029**	**Cost To Complete**	**Total Cost**
Total Program Element	-	77.158	94.944	76.090	-	76.090	53.492	44.895	41.684	40.167	0.000	428.430
E10: *Sentinel*	-	77.158	94.944	44.927	-	44.927	19.024	22.051	19.641	28.244	0.000	305.989
PS1: *Army Long Range Persistent Surveillance (ALPS)*	-	-	-	31.163	-	31.163	34.468	22.844	22.043	11.923	0.000	122.441

Note

In Fiscal Year (FY) 2025, Project PS1 /Army Long Range Persistent Surveillance (ALPS) is a new effort realigned within PE 0604820A / Radar Development. Funding realigned from PE 0604741A / Air Defense Command Control and Intelligence - Eng Dev, Project 126 /PEO Electronic Protect for the design development and hardware fabrication of ALPS.

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of the Sentinel Radar program and will provide for an incrementally fielded Integrated Air and Missile Defense Fire Control System/capability for the composite Army Air and Missile Defense Brigades. The Sentinel system is a key component of the Army Integrated Air and Missile Defense (AIAMD) architecture, providing critical air surveillance of the forward areas. The AIAMD architecture is 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.

Sentinel A3 consists of a radar-based sensor with its prime mover/power, Identification Friend or Foe (IFF), and Forward Area Air Defense (FAAD) Command, Control and Intelligence (C2I) interfaces. The radar is deployed in both an air defense role and a force protection role for Counter-Rocket, Artillery, and Mortar (C-RAM) missions. The sensor is an advanced three-dimensional battlefield X-Band air defense phased-array radar with an instrumented range of 75 kilometers. Sentinel is capable of operating day or night, in adverse weather conditions, in the battlefield environments of dust, smoke, aerosols and enemy countermeasures. It provides 360-degree azimuth coverage for acquisition tracking. Sentinel contributes to the digital battlefield by automatically detecting, classifying, identifying and reporting targets (cruise missiles, unmanned aircraft systems, rotary wing and fixed wing aircraft). Sentinel acquires targets sufficiently forward of the battle area to allow weapons reaction time and engagement at optimum ranges. Sentinel's integrated IFF reduces the potential for fratricide of U.S. and Coalition aircraft.

The Sentinel A4 Active Electronically Scanned Array (AESA) is the next generation of radar technology to replace the current phase and frequency scanned array used by Sentinel today. Sentinel A4 hardware and software upgrades will extend the range for ground-based surveillance and situational awareness; will have faster and more accurate Non-Cooperative Target Recognition (NCTR) for clearing fires and preventing fratricide; will improve track accuracy, and management of larger track loads; and improve operation in severe/urban clutter. The system will provide simultaneous multi-mission capability and provides hemispherical surveillance to detect and track small targets, such as Unmanned Aircraft Systems (UAS) and Cruise Missiles, in clutter and will detect and track slow targets, such as UAS and Rotary Wing aircraft, at low altitudes in clutter. The system will detect, track, and classify Rocket, Artillery, and Mortar (RAM) threats and will support M-SHORAD, AIAMD, IFPC and Guam Defense Systems (GDS) Operational requirements with Fire Control quality tracks. Sentinel A4 will incorporate the upgraded AN//TPX-61 IFF with M-Code

capability added by replacing the GB-Gram card with M-Code GB-Gram cards. Sentinel A4 will also address system survivability enhancements via the Air and Missile Defense - Integration (AMD-I) efforts. Sentinel A4 will incorporate an adjunct sensor to provide additional technology for the detection and identification of current and emerging threats.

The Army Long-Range Persistent Surveillance (ALPS) is a persistent, passive air surveillance sensor system. ALPS capabilities include long-range, 360-degree surveillance against conventional fixed wing and rotary wing aircraft, UAS, and cruise missiles. ALPS supports tactical to strategic operations via its capability to connect with multiple Army and Joint Command and Control systems including the IAMD Battle Command System (IBCS).

The ALPS program tasks include all programmatic and engineering activities needed to modernize systems currently supporting multiple Combatant Commands and design/development effort to provide a passive capability to Army Air and Missile Defense forces in accordance with the requirements in the Capability Development Document (CDD).

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	71.259	94.944	48.837	-	48.837
Current President's Budget	77.158	94.944	76.090	-	76.090
Total Adjustments	5.899	0.000	27.253	-	27.253
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	8.500	-			
• SBIR/STTR Transfer	-2.601	-			
• Adjustments to Budget Years	-	-	27.253	-	27.253

Change Summary Explanation

In FY2025 an addition of $31.1M for Army Long-range Persistent Surveillance (ALPS) (Project PS1) and a reduction of $3.9M for Sentinel (Project E10) results in a net change of $27.2M to Radar Development Program Element.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
E10: *Sentinel*	-	77.158	94.944	44.927	-	44.927	19.024	22.051	19.641	28.244	0.000	305.989
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Sentinel A4 detects, tracks, and classifies Rocket, Artillery, and Mortar (RAM) threats and will support Integrated Air and Missile Defense Battle Command System (IBCS) requirements and contributes sensor support for mitigating current and future Indirect Fire Protection Capability Increment 2 mission requirements as well as Mobile Short Range Air Defense (M-SHORAD) battalions. FY 2024 funding supports the integration for Initial Operational Test and Evaluation (IOT&E) Systems, the development of additional survivability enhancements (AMDI-I) for inclusion into Sentinel A4, integration of adjunct sensor into Sentinel A4 configurations, as well as the non-recurring engineering efforts to enhance the Sentinel A4 configuration to support Guam Defense Systems (GDS) mission set to enable fielding in country by requested timelines. FY2025 funding will support IOT&E and the Operational Assessment required for a Full Rate Production (FRP) decision.

Electronic Attack/Electronic Protect (EA/EP) addresses the electronic countermeasures (ECM) gap for Sentinel A3. This effort continues through the life of the radar, addressing both changing threats and electronic counter measure gaps.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Product Development	61.880	89.383	31.795
Description: Funding is provided for the following Product Development efforts: ***FY 2024 Plans:*** Will continue build and integration of five (5) Initial Operational Test and Evaluation (IOT&E) assets for delivery in support of system IOT&E. Will develop additional survivability enhancements (AMD-I) for inclusion into Sentinel A4. Will enhance Sentinel A4 to support Defense of Guam mission. Will continue to perform technical assessments, concept studies, cost reduction, risk reduction, threat analysis, and required documentation for Sentinel A3. ***FY 2025 Plans:*** Will execute Initial Operational Test and Evaluation (IOT&E) for Sentinel A4 and the Operational Assessment required for a Full Rate Production (FRP) decision. Will execute additional enhancements to Sentinel A4 to support new and evolving requirements for the Guam Defense Systems mission. Will continue development of additional survivability enhancements (AMD-I) and integration of adjunct sensor for inclusion into Sentinel A4. Will continue to perform technical assessments, concept studies, cost reduction, risk reduction, threat analysis, and required documentation for Sentinel A3. ***FY 2024 to FY 2025 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Decrease due to transition of program from Engineering and Manufacturing Development (EMD) and Low Rate Initial Production (LRIP) to a full rate production status in FY2025. Ongoing software modifications required in FY2025 for AMD-I, emerging threats, and Guam Defense Systems.			
Title: Test & Evaluation ***Description:*** Funding is provided for the following Test and Evaluation efforts: ***FY 2024 Plans:*** Supports soldier touchpoint for Sentinel A4 User Operational Evaluation Systems (UOES) to gain soldier feedback. Initiates target and range support for Sentinel A4 Initial Operational Test and Evaluation (IOT&E). Provides support for System of System integration test events. Will conduct software qualification test and hardware verification testing, field testing against representative targets. Prepares logistics products and required documentation for materiel release of software and hardware upgrades for Sentinel A3 and Sentinel A4. ***FY 2025 Plans:*** Supports Sentinel A4 Initial Operational Test and Evaluation (IOT&E). Will conduct software qualification test and hardware verification testing, field testing against representative targets. Prepares required documentation for materiel release of software and hardware upgrades for Sentinel A3 and Sentinel A4. ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase from FY2024 to FY2025 supports Sentinel A4 Initial Operational Test and Evaluation (IOT&E).	15.278	5.561	13.132
Accomplishments/Planned Programs Subtotals	77.158	94.944	44.927

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• WK5057: *Sentinel Mods*	214.736	161.886	180.253	-	180.253	493.037	505.210	461.565	467.189	Continuing	Continuing
• EX2: *Lower Tier Air Missile Defense (LTAMD) Capability*	366.637	816.663	149.463	-	149.463	122.785	124.002	128.507	123.399	0.000	1,831.456
• FM3: *Future Interceptor*	7.880	8.040	8.058	-	8.058	8.068	8.154	8.245	8.327	0.000	56.772
• C53101: *MSE Missile*	2,471.372	1,212.832	963.060	-	963.060	975.410	1,132.518	1,461.976	1,204.578	Continuing	Continuing
• EY7: *IFPC Increment 2 - Block 1*	126.308	196.248	138.553	-	138.553	117.923	10.862	11.139	136.733	0.000	737.766
• C62002: *IFPC INC 2-I BLOCK 1 SYSTEM*	22.709	313.189	411.430	-	411.430	663.872	786.454	802.826	997.832	0.000	3,998.312
• FI4: *Maneuver - Short Range Air Defense (M-SHORAD)*	9.985	10.188	22.412	-	22.412	15.265	10.229	10.343	10.446	0.000	88.868

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• C14300: *M-SHORAD - Procurement*	246.867	400.697	69.091	-	69.091	42.676	-	-	-	Continuing	Continuing
• S40: *Army Integrated Air and Missile Defense*	245.791	254.163	525.963	-	525.963	412.252	394.003	310.057	316.151	0.000	2,458.380
• BZ5075: *IAMD Battle Command System*	459.343	412.556	403.028	-	403.028	584.262	651.373	449.114	509.060	Continuing	Continuing
• 0604741A: *Air Defense Command, Control and Intelligence - Eng Dev*	54.244	74.738	69.653	-	69.653	63.879	70.400	71.366	72.084	Continuing	Continuing
• AD5070: *AIR & MSL Defense Planning & Control Sys*	72.619	68.892	80.011	-	80.011	-	-	-	-	0.000	221.522

Remarks

These programs are an integral part of the Army Integrated Air and Missile Defense (AIAMD) architecture.

D. Acquisition Strategy

Sentinel A3 and its predecessors were procured from Raytheon as a non-developmental item. The U.S. Government does not have adequate data rights for the Sentinel A3 and its predecessors; therefore no other contractor has the technical ability to modify the Sentinel A3 radar or Sentinel A3 software. The modifications for Sentinel A3 fall into these categories: Electronic Attack/Electronic Protect; Signal Data Processor; North Finding Module; Medium Bandwidth; Resiliency and Software Assurance Modification (RSAM); Counter Rocket Artillery and Mortar (C-RAM), Low Slow Small, Unmanned Aircraft Systems, Cruise Missiles; and Mode S. Electronic Attack/ Electronic Protect will be an ongoing effort to ensure Sentinel A3 remains relevant in the field until A4 is fielded.

For the Sentinel A4 modification, Lockheed Martin was competitively awarded a Fixed Price Incentive Firm (FPIF) contract to develop a modified Sentinel with a new Active Electronically Scanned Array (AESA) antenna. The contract award to Lockheed Martin includes EMD with priced options for LRIP. RDTE funded assets are on contract with Lockheed Martin including EMD prototypes, UOES assets to support System of System Integration Testing and IOT&E assets.

Sentinel 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 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support	Various	Various : Multiple	21.780	4.768	Nov 2022	4.858	Nov 2023	3.400	Nov 2024	-		3.400	Continuing	Continuing	Continuing
		Subtotal	21.780	4.768		4.858		3.400		-		3.400	Continuing	Continuing	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Electronic Attack/ Electronic Protect	Various	Raytheon & Various : Fullerton, CA / Various	36.499	4.000	Jan 2023	3.839	Jan 2024	3.324	Jan 2025	-		3.324	Continuing	Continuing	-
Active Electronically Scanned Array (A4)	C/FPIF	Lockheed Martin & Search, Track, Acquire, Radiate, Eliminate (PM STARE) : Syracuse, NY and Huntsville, AL	305.783	47.213	Jan 2023	54.108	Jan 2024	7.371	Jan 2025	-		7.371	Continuing	Continuing	-
System survivability Enhancements (AMD-I) (A4)	SS/ Various	Lockheed Martin & Search, Track, Acquire, Radiate, Eliminate (PM STARE) : Syracuse, NY and Huntsville, AL	-	-		12.064	Jan 2024	17.700	Jan 2025	-		17.700	Continuing	Continuing	-
Guam Defense Systems (GDS) Development (A4)	C/FPIF	Lockheed Martin & Search, Track, Acquire, Radiate, Eliminate (PM STARE) : Syracuse, NY and Huntsville, AL	-	5.899	Nov 2022	14.514	Jan 2024	-		-		-	Continuing	Continuing	-
		Subtotal	342.282	57.112		84.525		28.395		-		28.395	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) E10 / *Sentinel*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Electronic Attack/ Electronic Protect	Various	Raytheon & Various : Fullerton, CA / Various	7.380	0.225	Jan 2023	0.229	Jan 2024	0.233	Jan 2025	-		0.233	Continuing	Continuing	-
Active Electronically Scanned Array (A4)	C/FPIF	Lockheed Martin & Search, Track, Acquire, Radiate, Eliminate (PM STARE : Syracuse, NY and Huntsville, AL	6.342	15.053	Jan 2023	5.332	Jan 2024	12.899	Nov 2024	-		12.899	Continuing	Continuing	-
		Subtotal	13.722	15.278		5.561		13.132		-		13.132	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	377.784	77.158		94.944		44.927		-		44.927	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

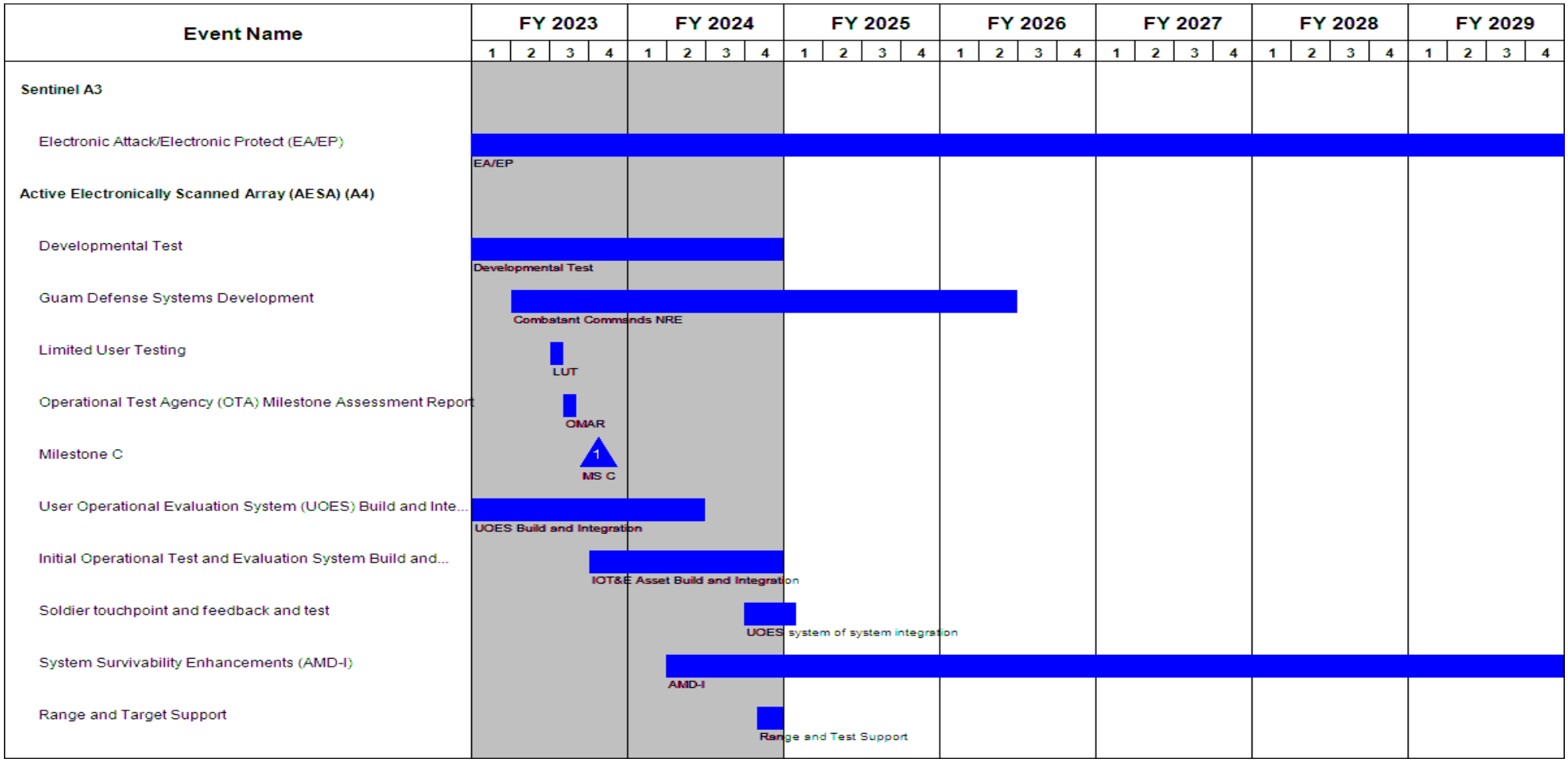


Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

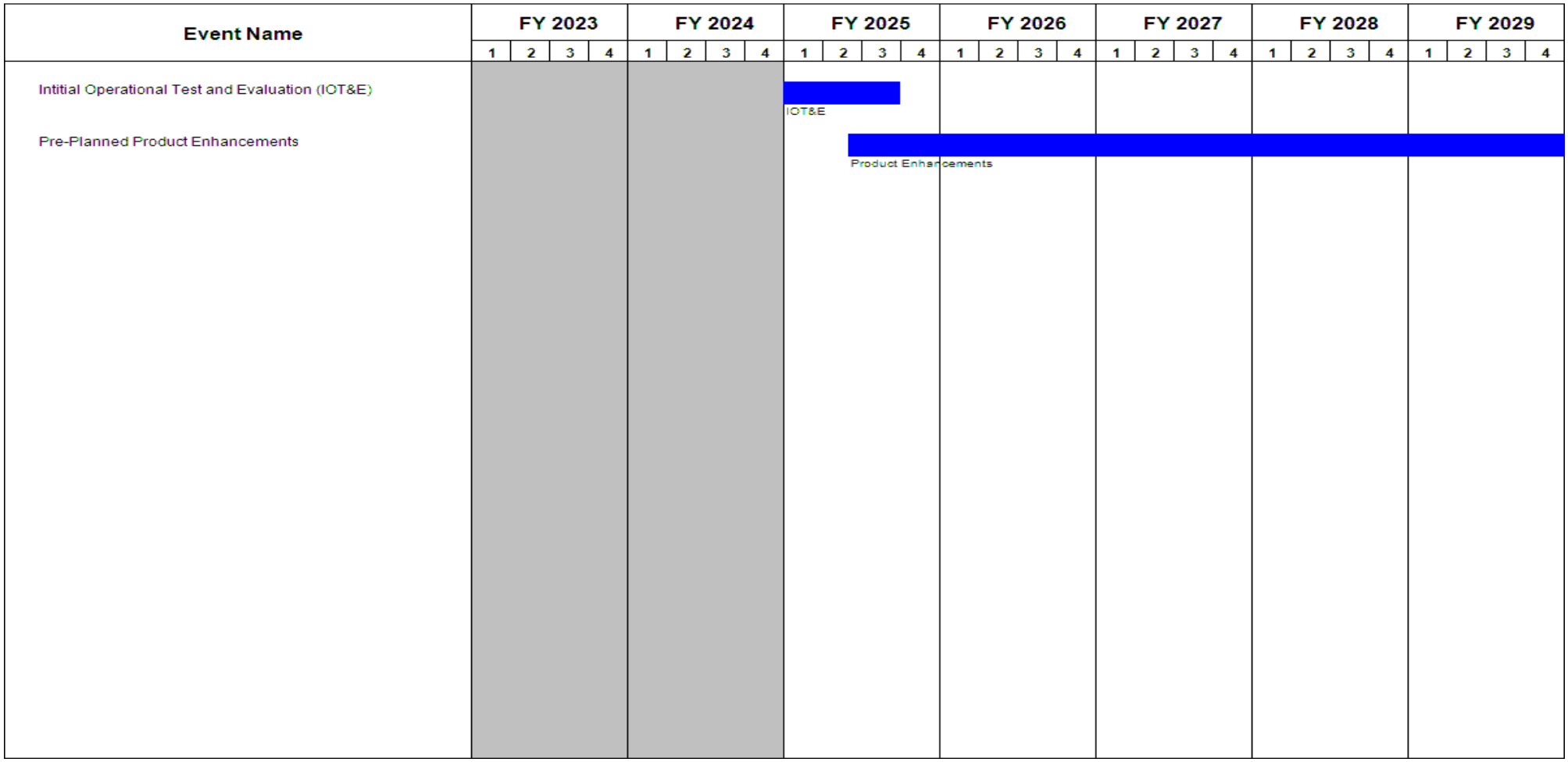


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** E10 / *Sentinel*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Sentinel A3	2	2019	4	2030
Electronic Attack/Electronic Protect (EA/EP)	2	2015	4	2030
Active Electronically Scanned Array (AESA) (A4)	4	2019	4	2033
Milestone B	4	2019	4	2019
Engineering Manufacturing and Development Prototype Build and Integration	2	2020	2	2022
Preliminary Design Review	2	2020	2	2020
Critical Design Review	2	2021	2	2021
Contractor Verification Testing	4	2021	2	2022
Developmental Test	2	2022	4	2024
Guam Defense Systems Development	2	2023	2	2026
Limited User Testing	3	2023	3	2023
Operational Test Agency (OTA) Milestone Assessment Report	3	2023	3	2023
Milestone C	4	2023	4	2023
User Operational Evaluation System (UOES) Build and Integration	1	2022	2	2024
Initial Operational Test and Evaluation System Build and Integration	4	2023	4	2024
Soldier touchpoint and feedback and test	4	2024	1	2025
System Survivability Enhancements (AMD-I)	2	2024	4	2029
Range and Target Support	4	2024	4	2024
Intitial Operational Test and Evaluation (IOT&E)	1	2025	3	2025
Pre-Planned Product Enhancements	2	2025	4	2030

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) PS1 / *Army Long Range Persistent Surveillance (ALPS)*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
PS1: *Army Long Range Persistent Surveillance (ALPS)*	-	-	-	31.163	-	31.163	34.468	22.844	22.043	11.923	0.000	122.441
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In Fiscal Year (FY) 2025, Project PS1 /Army Long Range Persistent Surveillance (ALPS) is a new effort realigned within PE 0604820A / Radar Development. Funding realigned from PE 0604741A / Air Defense Command Control and Intelligence - Eng Dev, Project 126 /PEO Electronic Protect for the design development and hardware fabrication of ALPS.

A. Mission Description and Budget Item Justification

The Army Long-Range Persistent Surveillance (ALPS) is a persistent, passive air surveillance sensor system. ALPS capabilities include long-range, 360-degree surveillance against conventional fixed wing and rotary wing aircraft, UAS, and cruise missiles. ALPS supports tactical to strategic operations via its capability to connect with multiple Army and Joint Command and Control systems including the IAMD Battle Command System (IBCS).

The ALPS program was started as an urgent capability in response to multiple Combatant Commands identified operational needs. The ALPS program tasks include all programmatic and engineering activities needed to modernize systems currently supporting multiple Combatant Commands and design/development effort to provide a passive capability to Army Air and Missile Defense forces in accordance with the requirements in the Capability Development Document (CDD). The ALPS system will be improved to maintain capability against the evolving threat.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Program Development and Support	-	-	31.163
Description: Provide program development and support for the ALPS program including technical work, design development, and modernization efforts. ***FY 2025 Plans:*** - Continue development and trade studies - Hardware fabrication - Develop statutory/regulatory documentation ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY2024 to FY2025 change reflects realignment from PE 0604741A / Air Defense Command Control and Intelligence - Eng Dev, Project 126 /PEO Electronic Protect. The increase in effort is due to the initiation of design development and hardware fabrication.			
Accomplishments/Planned Programs Subtotals	-	-	31.163

Exhibit R-2A, RDT&E Project Justification: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** PS1 / *Army Long Range Persistent Surveillance (ALPS)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

ALPS will use an Indefinite Delivery, Indefinite Quantity (IDIQ) contract to conduct the development and integration for ALPS, followed by a production contract to support future delivery of ALPS systems. The ALPS systems developed to support multiple Combatant Commands operational needs will be improved to maintain capability against emerging and evolving threats. An Acquisition Shaping Panel will be held in FY2024 for guidance from the Army Acquisition Executive to inform acquisition pathway.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Army			Date: March 2024
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604820A / *Radar Development*	Project (Number/Name) PS1 / *Army Long Range Persistent Surveillance (ALPS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies & Government Program Management	Various	Various : various	-	-		-		5.500	Dec 2024	-		5.500	0.000	5.500	-
		Subtotal	-	-		-		5.500		-		5.500	0.000	5.500	N/A

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Programmatic and Engineering Activities	Various	various : various	-	-		-		25.663	Dec 2024	-		25.663	0.000	25.663	-
		Subtotal	-	-		-		25.663		-		25.663	0.000	25.663	N/A

	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		-		31.163		-		31.163	0.000	31.163	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** PS1 / *Army Long Range Persistent Surveillance (ALPS)*

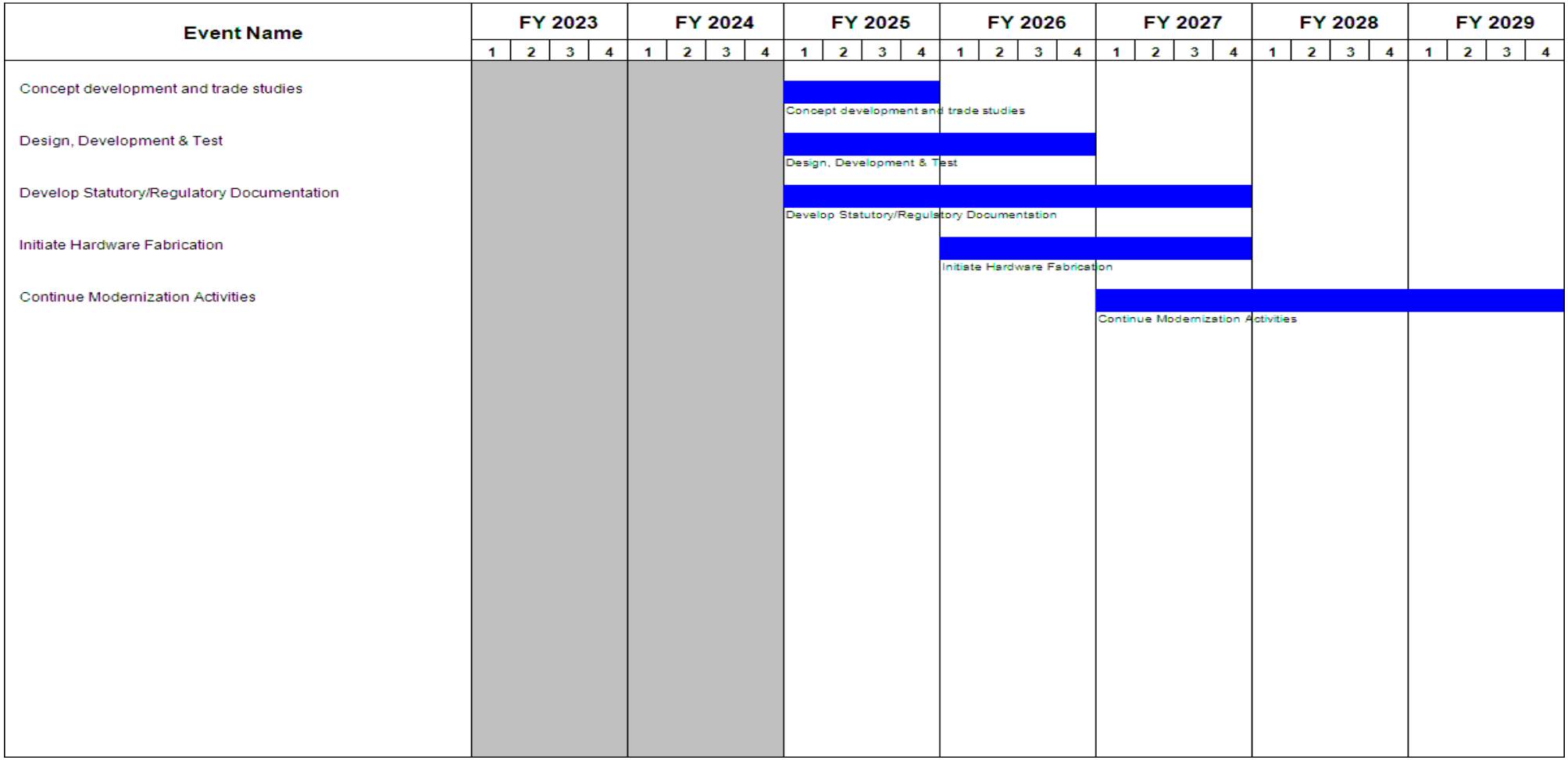


Exhibit R-4A, RDT&E Schedule Details: PB 2025 Army		Date: March 2024
Appropriation/Budget Activity 2040 / 5	**R-1 Program Element (Number/Name)** PE 0604820A / *Radar Development*	**Project (Number/Name)** PS1 / *Army Long Range Persistent Surveillance (ALPS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Concept development and trade studies	1	2025	4	2025
Design, Development & Test	1	2025	4	2026
Develop Statutory/Regulatory Documentation	1	2025	4	2027
Initiate Hardware Fabrication	1	2026	4	2027
Continue Modernization Activities	1	2027	4	2029