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**Department of Defense
Fiscal Year (FY) 2024 Budget Estimates**

March 2023



Army

Justification Book Volume 3a of 3

Research, Development, Test & Evaluation, Army

RDT&E – Volume II, Budget Activity 5A

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Army • Budget Estimates FY 2024 • RDT&E Program

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RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY
APPROPRIATION LANGUAGE

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, \$15,772,215,000.00 to remain available for obligation until September 30, 2025.

The FY 2024 Overseas Operations accounted for in the base budget are as follows:

In-theater and in-CONUS expenses that remain after combat operations cease and have been previously funded in Overseas Operations \$3,166,000.00.

COST STATEMENT

The following Justification Books were prepared at a cost of \$365,839.52: 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.

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FY 2024 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 2024.
2. **Relationship of the FY 2024 Budget Submitted to Congress to the FY 2023 Budget Submitted to Congress.** This paragraph provides a list of program elements/projects that are major new starts, restructures, developmental transitions, and terminated programs. Explanations for these changes can be found in the narrative sections of the Program Element R-2A Exhibits.

New Start Programs:

<u><i>Budget Activity</i></u>	<u><i>OSDPE / Project</i></u>	<u><i>Project Title</i></u>
02	0602146A / AM6	Modular RF Communications Technology
02	0602148A / CI4	Adaptive Avionics Technologies
02	0602141A / CIC	Fire Control Lethality Technology
02	0602182A / DA8	Quantum PNT & Radio Frequency Sensing
02	0602182A / DB4	Enabling Long Standoff 3D (ELS3D) Tech
02	0602002A / DC6	Sci & Analysis for Autonomous Sys & Counter-Auton
02	0602183A / DE2	Airborne Threat Defeat
02	0602150A / DE3	Adv Beam Control Component Development for C-CM
02	0602182A / DE6	Understanding Environment as a Threat Tech
03	0603044A / CW1	Technical-SAVVY Soldier Advanced Research
03	0603116A / DB2	Future Armaments Scalable Technologies
03	0603042A / DB5	Enabling Long Standoff 3D (ELS3D) Adv Tech
03	0603463A / DB6	Pathfinder 3D Advanced Technology
04	0604103A / DG4	NAVWAR SA
04	0603779A / DH6	Installation Resilience
05	0604802A / DC9	30mm MMPA M-SHORAD INC 3

05	0604818A / DD1	Unified Network Technology Trans & Integ (UNTTI)
05	0605206A / DG3	CI and HUMINT Equipment Program-Army (CIHEP-A)
05	0605013A / DH1	Operational Medicine Information System
05	0605216A / EFA	Joint Target Integrated Cmd & Coordination Suite
05	0605036A / EQ5	Combating Weapons of Mass Destruction (CWMD)
05	0605049A / XT4	Advanced Threat Detection System (ATDS)
06	0605601A / WD1	West Desert Test Center
07	0203735A / DD4	AMPV Improvement Program
07	0607315A / DD5	Army Power Systems Modernization

Program Element/Project Restructures:

<u>Budget Activity</u>	<u>Old OSDPE / Project: Title</u>	<u>New OSDPE / Project</u>
02	0602145A / CU5: Next Generation Combat Vehicle Technolog	0602141A / CIA
02	0602181A / CM7: All Domain Convergence Applied Research	0602141A / CIB
02	0602143A / AZ9: Soldier Lethality Technology	0602143A / BB4
02	0602143A / BBG: Soldier Lethality Technology	0602143A / BC2
02	0602145A / BG8: Next Generation Combat Vehicle Technology	0602144A / DG1
02	0602180A / CL7: Artificial Intelligence and Machine Learning Technologies	0602180A / DE8
03	0603040A / CL6: Artificial Intelligence and Machine Learning Technologies	0603040A / DE9
03	0603463A / AR6: Network C3I Advanced Technology	0603042A / DE7
03	0603041A / CM8: All Domain Convergence Advanced Technology	0603116A / CID
03	0603462A / BH6: Next Generation Combat Vehicle Advanced Technology	0603118A / BD9
03	0603462A / BG9: Next Generation Combat Vehicle Advanced Technology	0603119A / DG2
03	0603464A / CZ8: Long Range Precision Fires Advanced Technology	0603464A / AF2
04	0604036A / BY9: Multi-Domain Sensing System (MDSS) Adv Dev	0604036A / DD6
04	0604036A / BY9: Multi-Domain Sensing System (MDSS) Adv Dev	0604036A / DD6

05	0604818A / EJ5: Family of Heavy Vehicles	0604622A / DG7
05	0605224A / CK4: Long-Range Hypersonic Weapon	0604182A / HX2
05	0605224A / CK4: All Up Round and Canister (AUR+C)	0604182A / HX2
05	0605457A / S40: Common Hypersonic Glide Body (CHGB)	0604182A / HX2
05	0605601A / F30: Ground Support Equipment (GSE)	0604182A / HX2
05	0203744A / EB6: HX6: Test and Evaluation	0604182A / HX2
05	0605224A / CK4: Multi-Domain Intelligence	0604805A / 593
05	0605224A / CK4: Multi-Domain Intelligence	0605224A / DD8
05	0605457A / S40: Multi-Domain Intelligence	0605224A / DD9
05	0605601A / F30: Army Integrated Air and Missile Defense (AIAMD)	0605457A / SS1
06	0605601A / F30: Army Integrated Air and Missile Defense (AIAMD)	0605702A / 128
07	0203744A / EB6: Army Test Ranges and Facilities	0305219A / MQ2

Program Terminations (including transfers to Procurement and Sustainment):

<u>Budget Activity</u>	<u>OSDPE / Project</u>	<u>Project Title</u>
03	0603465A / AI8	Future Vertical Lift Advanced Technology / Alternative Concept Engine Advanced Technology
03	0603463A / AV4	Network C3I Advanced Technology / Foundational S&T for Network C3I Advanced Tech
04	0305251A / DD3	Cyberspace Operations Forces and Force Support / Joint Cyber Warfighting Architecture Cyber Train
04	0604115A / AX8	Technology Maturation Initiatives / Adv Leth and Accuracy Sys for Med Calber (ALAS-MC)
04	0604115A / AX9	Technology Maturation Initiatives / Adv Mobility Experimental Prototype Adv Tech
05	0604802A / CE3	Weapons and Munitions - Eng Dev / Precision Munition (Sniper)
05	0604802A / EU4	Weapons and Munitions - Eng Dev / 40mm HV Improved High Explosive Dual Purpose
05	0604804A / FG4	Logistics and Engineer Equipment - Eng Dev / Ultra-Lightweight Camouflage Net System (ULCANS)
05	0604822A / DV6	General Fund Enterprise Business System (GFEBS) / General Fund Enterprise Business System
05	0604854A / HB6	Artillery Systems - EMD / Mobile 155MM Howitzer
05	0605013A / 184	Information Technology Development / Installation Support Modules
07	0305204A / 11A	Tactical Unmanned Aerial Vehicles / Advanced Payload Develop & Spt

07	0305206A / EH2	Airborne Reconnaissance Systems / EMARSS ADV DEV
07	0305206A / EH3	Airborne Reconnaissance Systems / EMARSS Payloads ADV DEV
08	0608041A / DD2	Defensive CYBER - Software Prototype Development / Joint Cyber Warfighting Architecture Software

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.

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Department of Defense
FY 2024 President's Budget
Exhibit R-1 FY 2024 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2023

<u>Appropriation</u>	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment	FY 2024 Request
Research, Development, Test and Evaluation, Army	14,660,654	17,142,121	9,100	17,151,221	15,775,381
Total Research, Development, Test, & Evaluation	14,660,654	17,142,121	9,100	17,151,221	15,775,381

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of Defense
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Total Obligational Authority
(Dollars in Thousands)

Mar 2023

	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment	FY 2024 Request
<u>Summary Recap of Budget Activities</u>					
Basic Research	590,078	635,395		635,395	497,455
Applied Research	1,521,472	1,823,330		1,823,330	948,358
Advanced Technology Development	2,145,309	2,532,690		2,532,690	1,455,986
Advanced Component Development & Prototypes	3,799,417	4,631,111	6,000	4,637,111	4,420,315
System Development & Demonstration	3,178,005	4,317,752	600	4,318,352	5,639,364
Management Support	1,901,655	1,820,502		1,820,502	1,624,585
Operational Systems Development	1,416,677	1,286,510	2,500	1,289,010	1,105,748
Software And Digital Technology Pilot Programs	108,041	94,831		94,831	83,570
Total Research, Development, Test, & Evaluation	14,660,654	17,142,121	9,100	17,151,221	15,775,381
<u>Summary Recap of FYDP Programs</u>					
General Purpose Forces	559,789	372,120		372,120	404,375
Intelligence and Communications	262,480	248,995		248,995	212,694
Research and Development	13,733,825	16,382,072	9,100	16,391,172	15,055,009
Central Supply and Maintenance	101,466	132,270		132,270	75,317
Administration and Associated Activities	101				
Classified Programs	2,993	6,664		6,664	27,986
Total Research, Development, Test, & Evaluation	14,660,654	17,142,121	9,100	17,151,221	15,775,381

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of the Army
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(Dollars in Thousands)

Mar 2023

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Applied Research	1,521,472	1,823,330		1,823,330	948,358
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Advanced Component Development & Prototypes	3,799,417	4,631,111	6,000	4,637,111	4,420,315
System Development & Demonstration	3,178,005	4,317,752	600	4,318,352	5,639,364
Management Support	1,901,655	1,820,502		1,820,502	1,624,585
Operational Systems Development	1,416,677	1,286,510	2,500	1,289,010	1,105,748
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Department of the Army
FY 2024 President's Budget
Exhibit R-1 FY 2024 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2023

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

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment
1	0601102A	Defense Research Sciences	01	U	358,521	391,642		391,642
2	0601103A	University Research Initiatives	01	U	88,797	107,160		107,160
3	0601104A	University and Industry Research Centers	01	U	122,521	121,160		121,160
4	0601121A	Cyber Collaborative Research Alliance	01	U	5,067	5,355		5,355
5	0601601A	Artificial Intelligence and Machine Learning Basic Research	01	U	15,172	10,078		10,078
	Basic Research				590,078	635,395		635,395
6	0602002A	Army Agile Innovation and Development-Applied Research	02	U		1,000		1,000
7	0602115A	Biomedical Technology	02	U	11,489			
8	0602134A	Counter Improvised-Threat Advanced Studies	02	U	1,904	6,192		6,192
9	0602141A	Lethality Technology	02	U	89,285	194,717		194,717
10	0602142A	Army Applied Research	02	U	28,654	27,833		27,833
11	0602143A	Soldier Lethality Technology	02	U	201,221	253,539		253,539
12	0602144A	Ground Technology	02	U	214,489	264,523		264,523
13	0602145A	Next Generation Combat Vehicle Technology	02	U	239,284	277,445		277,445
14	0602146A	Network C3I Technology	02	U	161,759	212,115		212,115
15	0602147A	Long Range Precision Fires Technology	02	U	107,454	128,529		128,529
16	0602148A	Future Verticle Lift Technology	02	U	130,108	104,348		104,348
17	0602150A	Air and Missile Defense Technology	02	U	92,926	88,768		88,768
18	0602180A	Artificial Intelligence and Machine Learning Technologies	02	U	14,486	16,068		16,068

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

Line No	Program Element Number	Item	Act	Se c	FY 2024 Request
1	0601102A	Defense Research Sciences	01	U	296,670
2	0601103A	University Research Initiatives	01	U	75,672
3	0601104A	University and Industry Research Centers	01	U	108,946
4	0601121A	Cyber Collaborative Research Alliance	01	U	5,459
5	0601601A	Artificial Intelligence and Machine Learning Basic Research	01	U	10,708
	Basic Research				497,455
6	0602002A	Army Agile Innovation and Development-Applied Research	02	U	5,613
7	0602115A	Biomedical Technology	02	U	
8	0602134A	Counter Improvised-Threat Advanced Studies	02	U	6,242
9	0602141A	Lethality Technology	02	U	85,578
10	0602142A	Army Applied Research	02	U	34,572
11	0602143A	Soldier Lethality Technology	02	U	104,470
12	0602144A	Ground Technology	02	U	60,005
13	0602145A	Next Generation Combat Vehicle Technology	02	U	166,500
14	0602146A	Network C3I Technology	02	U	81,618
15	0602147A	Long Range Precision Fires Technology	02	U	34,683
16	0602148A	Future Verticle Lift Technology	02	U	73,844
17	0602150A	Air and Missile Defense Technology	02	U	33,301
18	0602180A	Artificial Intelligence and Machine Learning Technologies	02	U	24,142

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Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment
19	0602181A	All Domain Convergence Applied Research	02	U	25,019	27,360		27,360
20	0602182A	C3I Applied Research	02	U	11,954	27,868		27,868
21	0602183A	Air Platform Applied Research	02	U	6,356	41,588		41,588
22	0602184A	Soldier Applied Research	02	U	10,660	15,716		15,716
23	0602213A	C3I Applied Cyber	02	U	12,119	13,605		13,605
24	0602386A	Biotechnology for Materials - Applied Research	02	U	19,889	21,811		21,811
25	0602785A	Manpower/Personnel/Training Technology	02	U	18,414	19,649		19,649
26	0602787A	Medical Technology	02	U	124,002	80,656		80,656
	Applied Research				1,521,472	1,823,330		1,823,330
27	0603002A	Medical Advanced Technology	03	U	147,287	31,588		31,588
28	0603007A	Manpower, Personnel and Training Advanced Technology	03	U	13,865	15,598		15,598
29	0603025A	Army Agile Innovation and Demonstration	03	U	21,420	20,900		20,900
30	0603040A	Artificial Intelligence and Machine Learning Advanced Technologies	03	U	876	6,395		6,395
31	0603041A	All Domain Convergence Advanced Technology	03	U	20,095	45,377		45,377
32	0603042A	C3I Advanced Technology	03	U	3,036	12,716		12,716
33	0603043A	Air Platform Advanced Technology	03	U	727	17,946		17,946
34	0603044A	Soldier Advanced Technology	03	U	858	479		479
35	0603115A	Medical Development	03	U	25,540			
36	0603116A	Lethality Advanced Technology	03	U	7,772	9,796		9,796
37	0603117A	Army Advanced Technology Development	03	U	76,815	134,874		134,874

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Line No	Program Element Number	Item	Act	Se c	FY 2024 Request
19	0602181A	All Domain Convergence Applied Research	02	U	14,297
20	0602182A	C3I Applied Research	02	U	30,659
21	0602183A	Air Platform Applied Research	02	U	48,163
22	0602184A	Soldier Applied Research	02	U	18,986
23	0602213A	C3I Applied Cyber	02	U	22,714
24	0602386A	Biotechnology for Materials - Applied Research	02	U	16,736
25	0602785A	Manpower/Personnel/Training Technology	02	U	19,969
26	0602787A	Medical Technology	02	U	66,266
	Applied Research				948,358
27	0603002A	Medical Advanced Technology	03	U	4,147
28	0603007A	Manpower, Personnel and Training Advanced Technology	03	U	16,316
29	0603025A	Army Agile Innovation and Demonstration	03	U	23,156
30	0603040A	Artificial Intelligence and Machine Learning Advanced Technologies	03	U	13,187
31	0603041A	All Domain Convergence Advanced Technology	03	U	33,332
32	0603042A	C3I Advanced Technology	03	U	19,225
33	0603043A	Air Platform Advanced Technology	03	U	14,165
34	0603044A	Soldier Advanced Technology	03	U	1,214
35	0603115A	Medical Development	03	U	
36	0603116A	Lethality Advanced Technology	03	U	20,582
37	0603117A	Army Advanced Technology Development	03	U	136,280

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38	0603118A	Soldier Lethality Advanced Technology	03	U	148,458	154,639		154,639
39	0603119A	Ground Advanced Technology	03	U	281,637	415,846		415,846
40	0603134A	Counter Improvised-Threat Simulation	03	U	23,920	21,486		21,486
41	0603386A	Biotechnology for Materials - Advanced Research	03	U	51,774	56,853		56,853
42	0603457A	C3I Cyber Advanced Development	03	U	61,426	41,354		41,354
43	0603461A	High Performance Computing Modernization Program	03	U	222,220	301,964		301,964
44	0603462A	Next Generation Combat Vehicle Advanced Technology	03	U	294,491	471,434		471,434
45	0603463A	Network C3I Advanced Technology	03	U	205,576	177,917		177,917
46	0603464A	Long Range Precision Fires Advanced Technology	03	U	138,482	202,830		202,830
47	0603465A	Future Vertical Lift Advanced Technology	03	U	255,323	272,551		272,551
48	0603466A	Air and Missile Defense Advanced Technology	03	U	125,027	99,147		99,147
49	0603920A	Humanitarian Demining	03	U	18,684	21,000		21,000
	Advanced Technology Development				2,145,309	2,532,690		2,532,690
51	0603305A	Army Missile Defense Systems Integration	04	U	56,579	118,001		118,001
52	0603308A	Army Space Systems Integration	04	U	25,401	30,945		30,945
53	0603327A	Air and Missile Defense Systems Engineering	04	U	15,000	15,000		15,000
54	0603619A	Landmine Warfare and Barrier - Adv Dev	04	U	44,933	55,953	6,000	61,953
55	0603639A	Tank and Medium Caliber Ammunition	04	U	61,641	51,488		51,488
56	0603645A	Armored System Modernization - Adv Dev	04	U	154,010	135,122		135,122
57	0603747A	Soldier Support and Survivability	04	U	2,791	4,060		4,060
58	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	U	113,365	72,314		72,314

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Line No	Program Element Number	Item	Act	Se c	FY 2024 Request
38	0603118A	Soldier Lethality Advanced Technology	03	U	102,778
39	0603119A	Ground Advanced Technology	03	U	40,597
40	0603134A	Counter Improvised-Threat Simulation	03	U	21,672
41	0603386A	Biotechnology for Materials - Advanced Research	03	U	59,871
42	0603457A	C3I Cyber Advanced Development	03	U	28,847
43	0603461A	High Performance Computing Modernization Program	03	U	255,772
44	0603462A	Next Generation Combat Vehicle Advanced Technology	03	U	217,394
45	0603463A	Network C3I Advanced Technology	03	U	105,549
46	0603464A	Long Range Precision Fires Advanced Technology	03	U	153,024
47	0603465A	Future Vertical Lift Advanced Technology	03	U	158,795
48	0603466A	Air and Missile Defense Advanced Technology	03	U	21,015
49	0603920A	Humanitarian Demining	03	U	9,068
	Advanced Technology Development				1,455,986
51	0603305A	Army Missile Defense Systems Integration	04	U	12,904
52	0603308A	Army Space Systems Integration	04	U	19,120
53	0603327A	Air and Missile Defense Systems Engineering	04	U	
54	0603619A	Landmine Warfare and Barrier - Adv Dev	04	U	47,537
55	0603639A	Tank and Medium Caliber Ammunition	04	U	91,323
56	0603645A	Armored System Modernization - Adv Dev	04	U	43,026
57	0603747A	Soldier Support and Survivability	04	U	3,550
58	0603766A	Tactical Electronic Surveillance System - Adv Dev	04	U	65,567

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Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment	FY 2023 Total Enactment
59	0603774A	Night Vision Systems Advanced Development	04	U	62,534	97,478		97,478
60	0603779A	Environmental Quality Technology - Dem/Val	04	U	22,491	76,749		76,749
61	0603790A	NATO Research and Development	04	U	3,639	3,805		3,805
62	0603801A	Aviation - Adv Dev	04	U	1,138,457	1,157,472		1,157,472
63	0603804A	Logistics and Engineer Equipment - Adv Dev	04	U	10,797	24,638		24,638
64	0603807A	Medical Systems - Adv Dev	04	U	27,768	5,598		5,598
65	0603827A	Soldier Systems - Advanced Development	04	U	25,288	23,444		23,444
66	0604017A	Robotics Development	04	U	78,309	26,555		26,555
67	0604019A	Expanded Mission Area Missile (EMAM)	04	U	26,855	258,320		258,320
68	0604020A	Cross Functional Team (CFT) Advanced Development & Prototyping	04	U		77,000		77,000
69	0604035A	Low Earth Orbit (LEO) Satellite Capability	04	U	18,922	35,509		35,509
70	0604036A	Multi-Domain Sensing System (MDSS) Adv Dev	04	U	50,548	47,915		47,915
71	0604037A	Tactical Intel Targeting Access Node (TITAN) Adv Dev	04	U	28,347	863		863
72	0604100A	Analysis Of Alternatives	04	U	9,723	10,659		10,659
73	0604101A	Small Unmanned Aerial Vehicle (SUAV) (6.4)	04	U	892	1,425		1,425
74	0604103A	Electronic Warfare Planning and Management Tool (EWPMT)	04	U				
75	0604113A	Future Tactical Unmanned Aircraft System (FTUAS)	04	U	76,349	134,719		134,719
76	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04	U	408,766	380,147		380,147
77	0604115A	Technology Maturation Initiatives	04	U	127,725	219,742		219,742
78	0604117A	Maneuver - Short Range Air Defense (M-SHORAD)	04	U	37,939	274,838		274,838

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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59	0603774A	Night Vision Systems Advanced Development	04	U	73,675
60	0603779A	Environmental Quality Technology - Dem/Val	04	U	31,720
61	0603790A	NATO Research and Development	04	U	4,143
62	0603801A	Aviation - Adv Dev	04	U	1,502,160
63	0603804A	Logistics and Engineer Equipment - Adv Dev	04	U	7,604
64	0603807A	Medical Systems - Adv Dev	04	U	1,602
65	0603827A	Soldier Systems - Advanced Development	04	U	27,681
66	0604017A	Robotics Development	04	U	3,024
67	0604019A	Expanded Mission Area Missile (EMAM)	04	U	97,018
68	0604020A	Cross Functional Team (CFT) Advanced Development & Prototyping	04	U	117,557
69	0604035A	Low Earth Orbit (LEO) Satellite Capability	04	U	38,851
70	0604036A	Multi-Domain Sensing System (MDSS) Adv Dev	04	U	191,394
71	0604037A	Tactical Intel Targeting Access Node (TITAN) Adv Dev	04	U	10,626
72	0604100A	Analysis Of Alternatives	04	U	11,095
73	0604101A	Small Unmanned Aerial Vehicle (SUAV) (6.4)	04	U	5,144
74	0604103A	Electronic Warfare Planning and Management Tool (EWPMT)	04	U	2,260
75	0604113A	Future Tactical Unmanned Aircraft System (FTUAS)	04	U	53,143
76	0604114A	Lower Tier Air Missile Defense (LTAMD) Sensor	04	U	816,663
77	0604115A	Technology Maturation Initiatives	04	U	281,314
78	0604117A	Maneuver - Short Range Air Defense (M-SHORAD)	04	U	281,239

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79	0604119A	Army Advanced Component Development & Prototyping	04	U	179,483	198,111		198,111
80	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	U	80,858	57,620		57,620
81	0604121A	Synthetic Training Environment Refinement & Prototyping	04	U	198,815	242,468		242,468
82	0604134A	Counter Improvised-Threat Demonstration, Prototype Development, and Testing	04	U	12,891	14,840		14,840
83	0604135A	Strategic Mid-Range Fires	04	U		404,291		404,291
84	0604182A	Hypersonics	04	U	305,406	238,168		238,168
85	0604403A	Future Interceptor	04	U	6,643	8,179		8,179
86	0604531A	Counter - Small Unmanned Aircraft Systems Advanced Development	04	U	18,449	35,110		35,110
87	0604541A	Unified Network Transport	04	U	33,879	36,966		36,966
88	0604644A	Mobile Medium Range Missile	04	U	275,989			
89	0604785A	Integrated Base Defense (Budget Activity 4)	04	U	2,040			
90	0305251A	Cyberspace Operations Forces and Force Support	04	U	55,895	55,599		55,599
999	999999999	Classified Programs	04	U				
		Advanced Component Development & Prototypes			3,799,417	4,631,111	6,000	4,637,111
91	0604201A	Aircraft Avionics	05	U	6,411	3,335		3,335
92	0604270A	Electronic Warfare Development	05	U	29,683	4,140		4,140
93	0604601A	Infantry Support Weapons	05	U	77,027	83,329		83,329
94	0604604A	Medium Tactical Vehicles	05	U	9,177	22,163		22,163
95	0604611A	JAVELIN	05	U	8,202	16,186		16,186

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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79	0604119A	Army Advanced Component Development & Prototyping	04	U	204,914
80	0604120A	Assured Positioning, Navigation and Timing (PNT)	04	U	40,930
81	0604121A	Synthetic Training Environment Refinement & Prototyping	04	U	109,714
82	0604134A	Counter Improvised-Threat Demonstration, Prototype Development, and Testing	04	U	16,426
83	0604135A	Strategic Mid-Range Fires	04	U	31,559
84	0604182A	Hypersonics	04	U	43,435
85	0604403A	Future Interceptor	04	U	8,040
86	0604531A	Counter - Small Unmanned Aircraft Systems Advanced Development	04	U	64,242
87	0604541A	Unified Network Transport	04	U	40,915
88	0604644A	Mobile Medium Range Missile	04	U	
89	0604785A	Integrated Base Defense (Budget Activity 4)	04	U	
90	0305251A	Cyberspace Operations Forces and Force Support	04	U	
999	999999999	Classified Programs	04	U	19,200
		Advanced Component Development & Prototypes			4,420,315
91	0604201A	Aircraft Avionics	05	U	13,673
92	0604270A	Electronic Warfare Development	05	U	12,789
93	0604601A	Infantry Support Weapons	05	U	64,076
94	0604604A	Medium Tactical Vehicles	05	U	28,226
95	0604611A	JAVELIN	05	U	7,827

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96	0604622A	Family of Heavy Tactical Vehicles	05	U	27,406	53,014		53,014
97	0604633A	Air Traffic Control	05	U	4,244	2,623		2,623
98	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05	U		109,849		109,849
99	0604642A	Light Tactical Wheeled Vehicles	05	U	1,980			
100	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05	U	118,296	63,131		63,131
101	0604710A	Night Vision Systems - Eng Dev	05	U	41,831	92,951		92,951
102	0604713A	Combat Feeding, Clothing, and Equipment	05	U	1,598	1,566		1,566
103	0604715A	Non-System Training Devices - Eng Dev	05	U	28,605	18,588		18,588
104	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	U	58,633	55,541		55,541
105	0604742A	Constructive Simulation Systems Development	05	U	21,424	29,481		29,481
106	0604746A	Automatic Test Equipment Development	05	U	8,486	5,178		5,178
107	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	U	12,182	8,189		8,189
108	0604798A	Brigade Analysis, Integration and Evaluation	05	U	20,976	21,086		21,086
109	0604802A	Weapons and Munitions - Eng Dev	05	U	287,787	285,778	600	286,378
110	0604804A	Logistics and Engineer Equipment - Eng Dev	05	U	49,201	75,669		75,669
111	0604805A	Command, Control, Communications Systems - Eng Dev	05	U	19,372	44,993		44,993
112	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	U	43,023	5,513		5,513
113	0604808A	Landmine Warfare/Barrier - Eng Dev	05	U	28,622	37,150		37,150
114	0604818A	Army Tactical Command & Control Hardware & Software	05	U	146,291	131,190		131,190
115	0604820A	Radar Development	05	U	124,832	71,259		71,259

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96	0604622A	Family of Heavy Tactical Vehicles	05	U	44,197
97	0604633A	Air Traffic Control	05	U	1,134
98	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	05	U	142,125
99	0604642A	Light Tactical Wheeled Vehicles	05	U	53,564
100	0604645A	Armored Systems Modernization (ASM) - Eng Dev	05	U	102,201
101	0604710A	Night Vision Systems - Eng Dev	05	U	48,720
102	0604713A	Combat Feeding, Clothing, and Equipment	05	U	2,223
103	0604715A	Non-System Training Devices - Eng Dev	05	U	21,441
104	0604741A	Air Defense Command, Control and Intelligence - Eng Dev	05	U	74,738
105	0604742A	Constructive Simulation Systems Development	05	U	30,985
106	0604746A	Automatic Test Equipment Development	05	U	13,626
107	0604760A	Distributive Interactive Simulations (DIS) - Eng Dev	05	U	8,802
108	0604798A	Brigade Analysis, Integration and Evaluation	05	U	20,828
109	0604802A	Weapons and Munitions - Eng Dev	05	U	243,851
110	0604804A	Logistics and Engineer Equipment - Eng Dev	05	U	37,420
111	0604805A	Command, Control, Communications Systems - Eng Dev	05	U	34,214
112	0604807A	Medical Materiel/Medical Biological Defense Equipment - Eng Dev	05	U	6,496
113	0604808A	Landmine Warfare/Barrier - Eng Dev	05	U	13,581
114	0604818A	Army Tactical Command & Control Hardware & Software	05	U	168,574
115	0604820A	Radar Development	05	U	94,944

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Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment	FY 2023 Total Enactment
116	0604822A	General Fund Enterprise Business System (GFEBs)	05	U	15,395	10,402		10,402
117	0604827A	Soldier Systems - Warrior Dem/Val	05	U	6,219	19,408		19,408
118	0604852A	Suite of Survivability Enhancement Systems - EMD	05	U	93,207	100,384		100,384
119	0604854A	Artillery Systems - EMD	05	U	25,000	48,106		48,106
120	0605013A	Information Technology Development	05	U	125,109	104,134		104,134
121	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	U	65,230	67,519		67,519
122	0605028A	Armored Multi-Purpose Vehicle (AMPV)	05	U	34,262			
123	0605030A	Joint Tactical Network Center (JTNC)	05	U	15,752	17,936		17,936
124	0605031A	Joint Tactical Network (JTN)	05	U	27,849	30,150		30,150
125	0605035A	Common Infrared Countermeasures (CIRCM)	05	U	15,982	11,523		11,523
126	0605036A	Combating Weapons of Mass Destruction (CWMD)	05	U				
127	0605038A	Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite	05	U	7,340			
128	0605041A	Defensive CYBER Tool Development	05	U	18,811	39,029		39,029
129	0605042A	Tactical Network Radio Systems (Low-Tier)	05	U	27,688	4,426		4,426
130	0605047A	Contract Writing System	05	U	20,195	13,742		13,742
131	0605049A	Missile Warning System Modernization (MWSM)	05	U				
132	0605051A	Aircraft Survivability Development	05	U	60,127	19,123		19,123
133	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05	U	175,604	131,093		131,093
134	0605053A	Ground Robotics	05	U	15,763	26,809		26,809
135	0605054A	Emerging Technology Initiatives	05	U	219,284	244,047		244,047

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116	0604822A	General Fund Enterprise Business System (GFEBs)	05	U	2,965
117	0604827A	Soldier Systems - Warrior Dem/Val	05	U	11,333
118	0604852A	Suite of Survivability Enhancement Systems - EMD	05	U	79,250
119	0604854A	Artillery Systems - EMD	05	U	42,490
120	0605013A	Information Technology Development	05	U	104,024
121	0605018A	Integrated Personnel and Pay System-Army (IPPS-A)	05	U	102,084
122	0605028A	Armored Multi-Purpose Vehicle (AMPV)	05	U	
123	0605030A	Joint Tactical Network Center (JTNC)	05	U	18,662
124	0605031A	Joint Tactical Network (JTN)	05	U	30,328
125	0605035A	Common Infrared Countermeasures (CIRCM)	05	U	11,509
126	0605036A	Combating Weapons of Mass Destruction (CWMD)	05	U	1,050
127	0605038A	Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) Sensor Suite	05	U	
128	0605041A	Defensive CYBER Tool Development	05	U	27,714
129	0605042A	Tactical Network Radio Systems (Low-Tier)	05	U	4,318
130	0605047A	Contract Writing System	05	U	16,355
131	0605049A	Missile Warning System Modernization (MWSM)	05	U	27,571
132	0605051A	Aircraft Survivability Development	05	U	24,900
133	0605052A	Indirect Fire Protection Capability Inc 2 - Block 1	05	U	196,248
134	0605053A	Ground Robotics	05	U	35,319
135	0605054A	Emerging Technology Initiatives	05	U	201,274

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136	0605143A	Biometrics Enabling Capability (BEC)	05	U	4,326	11,091		11,091
137	0605144A	Next Generation Load Device - Medium	05	U	14,835	22,439		22,439
138	0605145A	Medical Products and Support Systems Development	05	U	927			
139	0605148A	Tactical Intel Targeting Access Node (TITAN) EMD	05	U	54,972	108,987		108,987
140	0605203A	Army System Development & Demonstration	05	U	122,175	143,616		143,616
141	0605205A	Small Unmanned Aerial Vehicle (SUAV) (6.5)	05	U	2,192	6,530		6,530
142	0605206A	CI and HUMINT Equipment Program-Army (CIHEP-A)	05	U				
143	0605216A	Joint Targeting Integrated Command and Coordination Suite (JTIC2S)	05	U				
144	0605224A	Multi-Domain Intelligence	05	U	9,313	6,008		6,008
145	0605225A	SIO Capability Development	05	U	22,713			
146	0605231A	Precision Strike Missile (PrSM)	05	U	181,574	259,506		259,506
147	0605232A	Hypersonics EMD	05	U	107,404	633,499		633,499
148	0605233A	Accessions Information Environment (AIE)	05	U	16,177	10,088		10,088
149	0605235A	Strategic Mid-Range Capability	05	U		5,016		5,016
150	0605236A	Integrated Tactical Communications	05	U		12,447		12,447
151	0605450A	Joint Air-to-Ground Missile (JAGM)	05	U	2,467	2,366		2,366
152	0605457A	Army Integrated Air and Missile Defense (AIAMD)	05	U	154,257	263,545		263,545
153	0605531A	Counter - Small Unmanned Aircraft Systems Sys Dev & Demonstration	05	U	49,667	14,892		14,892
154	0605625A	Manned Ground Vehicle	05	U	194,936	554,925		554,925
155	0605766A	National Capabilities Integration (MIP)	05	U	13,454	17,030		17,030

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136	0605143A	Biometrics Enabling Capability (BEC)	05	U	
137	0605144A	Next Generation Load Device - Medium	05	U	36,970
138	0605145A	Medical Products and Support Systems Development	05	U	
139	0605148A	Tactical Intel Targeting Access Node (TITAN) EMD	05	U	132,136
140	0605203A	Army System Development & Demonstration	05	U	81,657
141	0605205A	Small Unmanned Aerial Vehicle (SUAV) (6.5)	05	U	31,284
142	0605206A	CI and HUMINT Equipment Program-Army (CIHEP-A) Joint Targeting Integrated Command and Coordination Suite	05	U	2,170
143	0605216A	(JTIC2S)	05	U	9,290
144	0605224A	Multi-Domain Intelligence	05	U	41,003
145	0605225A	SIO Capability Development	05	U	
146	0605231A	Precision Strike Missile (PrSM)	05	U	272,786
147	0605232A	Hypersonics EMD	05	U	900,920
148	0605233A	Accessions Information Environment (AIE)	05	U	27,361
149	0605235A	Strategic Mid-Range Capability	05	U	348,855
150	0605236A	Integrated Tactical Communications	05	U	22,901
151	0605450A	Joint Air-to-Ground Missile (JAGM)	05	U	3,014
152	0605457A	Army Integrated Air and Missile Defense (AIAMD) Counter - Small Unmanned Aircraft Systems Sys Dev &	05	U	284,095
153	0605531A	Demonstration	05	U	36,016
154	0605625A	Manned Ground Vehicle	05	U	996,653
155	0605766A	National Capabilities Integration (MIP)	05	U	15,129

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156	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	U	2,470	9,376		9,376
157	0605830A	Aviation Ground Support Equipment	05	U	1,158	2,959		2,959
158	0303032A	TROJAN - RH12	05	U	3,362	3,761		3,761
159	0304270A	Electronic Warfare Development	05	U	75,520	99,938		99,938
		System Development & Demonstration			3,178,005	4,317,752	600	4,318,352
160	0604256A	Threat Simulator Development	06	U	60,749	138,937		138,937
161	0604258A	Target Systems Development	06	U	41,769	64,132		64,132
162	0604759A	Major T&E Investment	06	U	91,130	142,031		142,031
163	0605103A	Rand Arroyo Center	06	U	31,087	33,631		33,631
164	0605301A	Army Kwajalein Atoll	06	U	242,279	309,005		309,005
165	0605326A	Concepts Experimentation Program	06	U	80,386	86,824		86,824
166	0605502A	Small Business Innovative Research	06	U	374,118			
167	0605601A	Army Test Ranges and Facilities	06	U	362,223	417,567		417,567
168	0605602A	Army Technical Test Instrumentation and Targets	06	U	57,584	67,962		67,962
169	0605604A	Survivability/Lethality Analysis	06	U	35,042	36,500		36,500
170	0605606A	Aircraft Certification	06	U	2,398	4,777		4,777
171	0605702A	Meteorological Support to RDT&E Activities	06	U	6,389	6,958		6,958
172	0605706A	Materiel Systems Analysis	06	U	20,771	22,004		22,004
173	0605709A	Exploitation of Foreign Items	06	U	13,631	6,186		6,186
174	0605712A	Support of Operational Testing	06	U	54,797	70,718		70,718

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156	0605812A	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	05	U	27,243
157	0605830A	Aviation Ground Support Equipment	05	U	1,167
158	0303032A	TROJAN - RH12	05	U	3,879
159	0304270A	Electronic Warfare Development	05	U	137,186
		System Development & Demonstration			5,639,364
160	0604256A	Threat Simulator Development	06	U	38,492
161	0604258A	Target Systems Development	06	U	11,873
162	0604759A	Major T&E Investment	06	U	76,167
163	0605103A	Rand Arroyo Center	06	U	37,078
164	0605301A	Army Kwajalein Atoll	06	U	314,872
165	0605326A	Concepts Experimentation Program	06	U	95,551
166	0605502A	Small Business Innovative Research	06	U	
167	0605601A	Army Test Ranges and Facilities	06	U	439,118
168	0605602A	Army Technical Test Instrumentation and Targets	06	U	42,220
169	0605604A	Survivability/Lethality Analysis	06	U	37,518
170	0605606A	Aircraft Certification	06	U	2,718
171	0605702A	Meteorological Support to RDT&E Activities	06	U	
172	0605706A	Materiel Systems Analysis	06	U	26,902
173	0605709A	Exploitation of Foreign Items	06	U	7,805
174	0605712A	Support of Operational Testing	06	U	75,133

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(Dollars in Thousands)

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

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment	FY 2023 Total Enactment
175	0605716A	Army Evaluation Center	06	U	65,693	67,058		67,058
176	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	U	2,537	6,097		6,097
177	0605801A	Programwide Activities	06	U	90,443	89,793		89,793
178	0605803A	Technical Information Activities	06	U	31,174	37,652		37,652
179	0605805A	Munitions Standardization, Effectiveness and Safety	06	U	54,922	60,645		60,645
180	0605857A	Environmental Quality Technology Mgmt Support	06	U	1,724	1,912		1,912
181	0605898A	Army Direct Report Headquarters - R&D - MHA	06	U	48,798	53,271		53,271
182	0606002A	Ronald Reagan Ballistic Missile Defense Test Site	06	U	78,187	89,602		89,602
183	0606003A	CounterIntel and Human Intel Modernization	06	U	10,641	1,424		1,424
184	0606105A	Medical Program-Wide Activities	06	U	37,616			
185	0606942A	Assessments and Evaluations Cyber Vulnerabilities	06	U	5,466	5,816		5,816
186	0909999A	Financing for Cancelled Account Adjustments	06	U	101			
	Management Support				1,901,655	1,820,502		1,820,502
187	0603778A	MLRS Product Improvement Program	07	U	11,865	18,463		18,463
188	0605024A	Anti-Tamper Technology Support	07	U	8,544	9,284		9,284
189	0607131A	Weapons and Munitions Product Improvement Programs	07	U	39,994	54,674	2,500	57,174
190	0607136A	Blackhawk Product Improvement Program	07	U	14,599			
191	0607137A	Chinook Product Improvement Program	07	U	65,960	67,513		67,513
192	0607139A	Improved Turbine Engine Program	07	U	250,533	228,036		228,036
193	0607142A	Aviation Rocket System Product Improvement and Development	07	U	8,831	11,312		11,312

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of the Army
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(Dollars in Thousands)

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

Line No	Program Element Number	Item	Act	Se c	FY 2024 Request
175	0605716A	Army Evaluation Center	06	U	71,118
176	0605718A	Army Modeling & Sim X-Cmd Collaboration & Integ	06	U	11,204
177	0605801A	Programwide Activities	06	U	93,895
178	0605803A	Technical Information Activities	06	U	31,327
179	0605805A	Munitions Standardization, Effectiveness and Safety	06	U	50,409
180	0605857A	Environmental Quality Technology Mgmt Support	06	U	1,629
181	0605898A	Army Direct Report Headquarters - R&D - MHA	06	U	55,843
182	0606002A	Ronald Reagan Ballistic Missile Defense Test Site	06	U	91,340
183	0606003A	CounterIntel and Human Intel Modernization	06	U	6,348
184	0606105A	Medical Program-Wide Activities	06	U	
185	0606942A	Assessments and Evaluations Cyber Vulnerabilities	06	U	6,025
186	0909999A	Financing for Cancelled Account Adjustments	06	U	
	Management Support				1,624,585
187	0603778A	MLRS Product Improvement Program	07	U	14,465
188	0605024A	Anti-Tamper Technology Support	07	U	7,472
189	0607131A	Weapons and Munitions Product Improvement Programs	07	U	8,425
190	0607136A	Blackhawk Product Improvement Program	07	U	1,507
191	0607137A	Chinook Product Improvement Program	07	U	9,265
192	0607139A	Improved Turbine Engine Program	07	U	201,247
193	0607142A	Aviation Rocket System Product Improvement and Development	07	U	3,014

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

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment*	FY 2023 Total Enactment
194	0607143A	Unmanned Aircraft System Universal Products	07	U	4,426	10,512		10,512
195	0607145A	Apache Future Development	07	U	9,700	25,074		25,074
196	0607148A	AN/TPQ-53 Counterfire Target Acquisition Radar System	07	U	46,009	61,559		61,559
197	0607150A	Intel Cyber Development	07	U	3,611	13,343		13,343
198	0607312A	Army Operational Systems Development	07	U	28,029	26,131		26,131
199	0607313A	Electronic Warfare Development	07	U	5,673	6,432		6,432
200	0607315A	Enduring Turbine Engines and Power Systems	07	U				
201	0607665A	Family of Biometrics	07	U	1,101	1,114		1,114
202	0607865A	Patriot Product Improvement	07	U	125,851	152,312		152,312
203	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	U	24,556	19,311		19,311
204	0203735A	Combat Vehicle Improvement Programs	07	U	272,438	194,229		194,229
205	0203743A	155mm Self-Propelled Howitzer Improvements	07	U	168,683	116,510		116,510
206	0203744A	Aircraft Modifications/Product Improvement Programs	07	U	10,000			
207	0203752A	Aircraft Engine Component Improvement Program	07	U	127	148		148
208	0203758A	Digitization	07	U	3,759			
209	0203801A	Missile/Air Defense Product Improvement Program	07	U	122	3,109		3,109
210	0203802A	Other Missile Product Improvement Programs	07	U	9,956	9,027		9,027
211	0205412A	Environmental Quality Technology - Operational System Dev	07	U	253	793		793
212	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	U	58,516	20,180		20,180
213	0208053A	Joint Tactical Ground System	07	U	11,379	8,813		8,813

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of the Army
FY 2024 President's Budget
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Total Obligational Authority
(Dollars in Thousands)

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

Line No	Program Element Number	Item	Act	Se c	FY 2024 Request
194	0607143A	Unmanned Aircraft System Universal Products	07	U	25,393
195	0607145A	Apache Future Development	07	U	10,547
196	0607148A	AN/TPQ-53 Counterfire Target Acquisition Radar System	07	U	54,167
197	0607150A	Intel Cyber Development	07	U	4,345
198	0607312A	Army Operational Systems Development	07	U	19,000
199	0607313A	Electronic Warfare Development	07	U	6,389
200	0607315A	Enduring Turbine Engines and Power Systems	07	U	2,411
201	0607665A	Family of Biometrics	07	U	797
202	0607865A	Patriot Product Improvement	07	U	177,197
203	0203728A	Joint Automated Deep Operation Coordination System (JADOCS)	07	U	42,177
204	0203735A	Combat Vehicle Improvement Programs	07	U	146,635
205	0203743A	155mm Self-Propelled Howitzer Improvements	07	U	122,902
206	0203744A	Aircraft Modifications/Product Improvement Programs	07	U	
207	0203752A	Aircraft Engine Component Improvement Program	07	U	146
208	0203758A	Digitization	07	U	1,515
209	0203801A	Missile/Air Defense Product Improvement Program	07	U	4,520
210	0203802A	Other Missile Product Improvement Programs	07	U	10,044
211	0205412A	Environmental Quality Technology - Operational System Dev	07	U	281
212	0205778A	Guided Multiple-Launch Rocket System (GMLRS)	07	U	75,952
213	0208053A	Joint Tactical Ground System	07	U	203

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Department of the Army
FY 2024 President's Budget
Exhibit R-1 FY 2024 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2023

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

Line No	Program Element Number	Item	Act	Se c	FY 2022 Actuals	FY 2023 Less Supplementals Enactment	FY 2023 Supplementals Enactment	FY 2023 Total Enactment
216	0303028A	Security and Intelligence Activities	07	U	24,506			
217	0303140A	Information Systems Security Program	07	U	15,680	17,209		17,209
218	0303141A	Global Combat Support System	07	U	43,643	22,600		22,600
219	0303142A	SATCOM Ground Environment (SPACE)	07	U	16,186	18,297		18,297
222	0305179A	Integrated Broadcast Service (IBS)	07	U	5,430	9,926		9,926
223	0305204A	Tactical Unmanned Aerial Vehicles	07	U	8,410	4,500		4,500
224	0305206A	Airborne Reconnaissance Systems	07	U	11,782	17,165		17,165
225	0305219A	MQ-1C Gray Eagle UAS	07	U				
226	0307665A	Biometrics Enabled Intelligence	07	U	2,066			
227	0708045A	End Item Industrial Preparedness Activities	07	U	101,466	132,270		132,270
999	999999999	Classified Programs	07	U	2,993	6,664		6,664
		Operational Systems Development			1,416,677	1,286,510	2,500	1,289,010
228	0608041A	Defensive CYBER - Software Prototype Development	08	U	108,041	94,831		94,831
		Software And Digital Technology Pilot Programs			108,041	94,831		94,831
Total Research, Development, Test and Evaluation, Army					14,660,654	17,142,121	9,100	17,151,221

*Includes enacted funding in the Ukraine Supplemental Appropriation Act, 2023 (Division B of Public Law 117-180) and Additional Ukraine Supplemental Appropriation Act, 2023 (Division M of Public Law 117-328).

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Department of the Army
FY 2024 President's Budget
Exhibit R-1 FY 2024 President's Budget
Total Obligational Authority
(Dollars in Thousands)

Mar 2023

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

Line No	Program Element Number	Item	Act	Se c	FY 2024 Request
216	0303028A	Security and Intelligence Activities	07	U	301
217	0303140A	Information Systems Security Program	07	U	15,323
218	0303141A	Global Combat Support System	07	U	13,082
219	0303142A	SATCOM Ground Environment (SPACE)	07	U	26,838
222	0305179A	Integrated Broadcast Service (IBS)	07	U	9,456
223	0305204A	Tactical Unmanned Aerial Vehicles	07	U	
224	0305206A	Airborne Reconnaissance Systems	07	U	
225	0305219A	MQ-1C Gray Eagle UAS	07	U	6,629
226	0307665A	Biometrics Enabled Intelligence	07	U	
227	0708045A	End Item Industrial Preparedness Activities	07	U	75,317
999	999999999	Classified Programs	07	U	8,786
	Operational Systems Development				1,105,748
228	0608041A	Defensive CYBER - Software Prototype Development	08	U	83,570
	Software And Digital Technology Pilot Programs				83,570
Total Research, Development, Test and Evaluation, Army					15,775,381

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

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91	05	0604270A	Electronic Warfare Development.....	Volume 3a - 17
92	05	0604601A	Infantry Support Weapons.....	Volume 3a - 36
93	05	0604604A	Medium Tactical Vehicles.....	Volume 3a - 124
94	05	0604611A	JAVELIN.....	Volume 3a - 139
95	05	0604622A	Family of Heavy Tactical Vehicles.....	Volume 3a - 148
96	05	0604633A	Air Traffic Control.....	Volume 3a - 180
97	05	0604641A	Tactical Unmanned Ground Vehicle (TUGV).....	Volume 3a - 188
98	05	0604642A	Light Tactical Wheeled Vehicles.....	Volume 3a - 206
99	05	0604645A	Armored Systems Modernization (ASM) - Eng Dev.....	Volume 3a - 221
100	05	0604710A	Night Vision Systems - Eng Dev.....	Volume 3a - 240
101	05	0604713A	Combat Feeding, Clothing, and Equipment.....	Volume 3a - 269
102	05	0604715A	Non-System Training Devices - Eng Dev.....	Volume 3a - 277
103	05	0604741A	Air Defense Command, Control and Intelligence - Eng Dev.....	Volume 3a - 299
104	05	0604742A	Constructive Simulation Systems Development.....	Volume 3a - 328
105	05	0604746A	Automatic Test Equipment Development.....	Volume 3a - 344

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Air Traffic Control	0604633A	96	05.....	Volume 3a - 180
Aircraft Avionics	0604201A	90	05.....	Volume 3a - 1
Armored Systems Modernization (ASM) - Eng Dev	0604645A	99	05.....	Volume 3a - 221
Automatic Test Equipment Development	0604746A	105	05.....	Volume 3a - 344
Combat Feeding, Clothing, and Equipment	0604713A	101	05.....	Volume 3a - 269
Constructive Simulation Systems Development	0604742A	104	05.....	Volume 3a - 328
Distributive Interactive Simulations (DIS) - Eng Dev	0604760A	106	05.....	Volume 3a - 360
Electronic Warfare Development	0604270A	91	05.....	Volume 3a - 17
Family of Heavy Tactical Vehicles	0604622A	95	05.....	Volume 3a - 148
Infantry Support Weapons	0604601A	92	05.....	Volume 3a - 36
JAVELIN	0604611A	94	05.....	Volume 3a - 139
Light Tactical Wheeled Vehicles	0604642A	98	05.....	Volume 3a - 206
Medium Tactical Vehicles	0604604A	93	05.....	Volume 3a - 124
Night Vision Systems - Eng Dev	0604710A	100	05.....	Volume 3a - 240
Non-System Training Devices - Eng Dev	0604715A	102	05.....	Volume 3a - 277
Tactical Unmanned Ground Vehicle (TUGV)	0604641A	97	05.....	Volume 3a - 188

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604201A / <i>Aircraft Avionics</i>							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	6.411	3.335	13.673	-	13.673	2.212	2.904	2.934	2.967	Continuing	Continuing
C97: <i>ACFT Avionics</i>	-	5.595	2.278	1.271	-	1.271	-	-	-	-	0.000	9.144
VU3: <i>Networking And Mission Planning</i>	-	0.816	1.057	12.402	-	12.402	2.212	2.904	2.934	2.967	Continuing	Continuing

Note

FY 2024 base procurement funding in the amount of \$11.100 million was realigned from AA0712FPEP to PE 0604201A / Aircraft Avionics Project VU3 to support AMCS developmental activities.

A. Mission Description and Budget Item Justification

A portion of this funding line is directly aligned to the Assured Positioning, Navigation, & Timing (APNT) Army Modernization Priority. The Fiscal Year (FY) 2023 budget request funds the development of Aircraft Avionics systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Program Element support research, development, and test efforts in the Engineering and Manufacturing Development phases of these systems. Alternate capabilities (non-GPS) and/or complimentary PNT solutions will be investigated, studied, evaluated and developed as standalone or blended navigation functions.

The Enhanced Aviation Global Air Traffic Management (GATM) Localizer Performance with Vertical Guidance (LPV) Embedded Global Positioning System (GPS) Inertial Navigation System (EGI) (EAGLE-M) development program upgrades existing EGI hardware by incorporating M-Code to provide Assured Positioning, Navigation and Timing (A-PNT) capability in a GPS degraded environment.

The Alternate Position, Navigation, and Time (ALT-PNT) enables precise navigation and timing during Multidomain Operations (MDO) operations in the absence of GPS by leveraging ALT-NAV and Vision Based Navigation (VBN) efforts and providing a secure and reliable fused PNT solution utilizing new and existing high-grade sensors available on manned aviation aircraft. ALT-PNT utilizes Modular Open System Architecture (MOSA) standards allowing rapid and affordable platform integration, adopting of new technologies, and adjustment to changes in adversarial capability.

The Aviation Mission Common Server (AMCS) is an obsolescence replacement and capability upgrade for the current Army Improved Data Modem (IDM) 401, which enables the hosting of applications to communicate, navigate, sense, and deploy weapon systems across the Joint Force in support of Army 2030 and future aviation operations. It supports the future Common Digital Backbone for the enduring and future Army Aviation fleets with the ability for further growth to host flight critical capabilities. It will provide the ability to rapidly apply technology upgrades utilizing a Modular Open Systems Approach (MOSA) with a nonproprietary Open Systems Architecture (OSA) to keep pace with evolving threats in the Multi-Domain Battlefield.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604201A / Aircraft Avionics				
The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation and is fielded on every modernized, rotary-wing Army aircraft, including the CH-47 Chinook, AH-64 Apache and UH-60 Black Hawk. The IDM provides the Army rotary wing fleet with critical communication capabilities, enables connectivity to multiple radios used by rotary-wing aircraft and the Blue Force Tracking transceiver, and provides the means for rapid data transfer.						
The Aviation Mission Planning System (AMPS) is a system used to conduct pre-mission and aircraft performance planning. It receives data from multiple sources and provides that data digitally to the aircraft to support aviation missions. AMPS is used for automated mission planning, risk assessment, and transfer of mission data to aviation platforms within an Aviation unit. This includes route generation, performance planning, communications planning, terrain analysis, data transfer, and mission rehearsal. These efforts include development and testing of a new underlying architecture to support the move of Army Aviation Mission Planning from the current structure to one that supports synchronization both vertically and horizontally between Aviation and Ground forces. It will allow aircrews to continually plan and update route, threat, and performance data throughout all phases of an Aviation mission. Development of a mobile aircraft performance planning/weight and balance calculator is currently underway and will be the first migration of AMPS capabilities to a mobile hardware agnostic environment.						
The AN/ARC-220 High Frequency (HF) Radio is a US Army rotary wing high frequency solution which is operational on over 2,400 Army helicopters (primarily CH-47, UH-60, and AH-64). Key capabilities are voice and data, Automatic Link Establishment, text messaging, position reporting, and Selective Calling. It is also Voice Interoperable with standard ground HF systems in use today. Efforts include development of an Airborne Radio Control Manager (ARCM) driver to enhance the modernization of the AN/ARC-220 HF Radio.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		6.654	3.335	2.576	-	2.576
Current President's Budget		6.411	3.335	13.673	-	13.673
Total Adjustments		-0.243	0.000	11.097	-	11.097
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.243	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	11.097	-	11.097
Change Summary Explanation						
FY 2024 base procurement funding in the amount of \$11.100 million was realigned from AA0712FPEP to PE 0604201A / Aircraft Avionics Project VU3 to support AMCS developmental activities.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) C97 / ACFT Avionics			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
C97: ACFT Avionics	-	5.595	2.278	1.271	-	1.271	-	-	-	-	0.000	9.144
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Fiscal Year (FY) 2024 budget request funds the development of Aircraft Avionics systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Program Element support research, development, and test efforts in the Engineering and Manufacturing Development phases of these systems. Alternate capabilities (non-GPS) and/or complimentary PNT solutions will be investigated, studied, evaluated and developed as standalone or blended navigation functions.

The Enhanced Aviation Global Air Traffic Management (GATM) Localizer Performance with Vertical Guidance (LPV) Embedded Global Positioning System (GPS) Inertial Navigation System (EGI) (EAGLE-M) development program upgrades existing EGI hardware by incorporating M-Code to provide Assured Positioning, Navigation and Timing (A-PNT) capability in a GPS degraded environment.

The Alternate Position, Navigation, and Time (ALT-PNT) enables precise navigation and timing during Multidomain Operations (MDO) operations in the absence of GPS by leveraging ALT-NAV and Vision Based Navigation (VBN) efforts, and providing a secure and reliable fused PNT solution utilizing new and existing high grade sensors available on manned aviation aircraft. ALT-PNT utilizes Modular Open System Architecture (MOSA) standards allowing rapid and affordable platform integration, adopting of new technologies, and adjustment to changes in adversarial capability.

Due to Selective Availability Anti-Spoofing Module (SAASM) obsolescence for currently fielded EGI Navigation Systems, reduction in EAGLE-M funding will result in a break in platform production lines and an inability to sustain the fielded fleet. Additionally, any reduction in funding would result delay fielding of critical A-PNT requirements resulting in inability to operate in a GPS degraded/denied environment.

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

	FY 2022	FY 2023	FY 2024
Title: EAGLE Navigation System A-PNT Integration	5.595	2.195	1.271
Description: The Enhanced Aviation Global Air Traffic Management (GATM) Localizer Performance with Vertical Guidance (LPV) Embedded Global Positioning System (GPS) Inertial Navigation System (EGI) (EAGLE-M) development program upgrades existing EGI hardware by incorporating M-Code to provide Assured Positioning, Navigation and Timing (A-PNT) capability in a GPS degraded environment.			
FY 2023 Plans: Conclude EAGLE-M full airworthiness testing/qualification and begin ALT-PNT technological maturation development efforts.			
FY 2024 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) C97 / ACFT Avionics			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024
Conclude EAGLE-M full airworthiness testing/qualification and begin Alternate Position, Navigation, and Time (ALT-PNT) technological maturation development efforts.											
FY 2023 to FY 2024 Increase/Decrease Statement: FY23 to FY24 decrease reflects completion of EAGLE-M Phase II efforts which provide the conclusion of Formal Qualification Testing (FQT) efforts and completion of qualification documentation. Also establishes ALT-PNT Modular Open System Architecture (MOSA) standards but is not sufficient to bring a full ALT-PNT program to fruition.											
Title: SBIR/STTR Transfer									-	0.083	-
Description: Title: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)											
FY 2023 Plans: Funding to be transferred in accordance with Title 15 USC §638											
FY 2023 to FY 2024 Increase/Decrease Statement: Funding to be transferred in accordance with Title 15 USC §638											
Accomplishments/Planned Programs Subtotals									5.595	2.278	1.271
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• AA0723: Comms, Nav Surveillance	58.117	72.387	74.912	-	74.912	62.802	37.707	37.714	37.637	Continuing	Continuing
• AA0704: GATM - Rotary Wing Aircraft	16.776	14.683	8.924	-	8.924	4.956	4.997	-	-	Continuing	Continuing
• A01006: Aviation ASSURED PNT	45.862	66.294	67.383	-	67.383	58.478	60.061	60.075	59.953	Continuing	Continuing
• C97: ACFT Avionics	5.595	2.278	1.271	-	1.271	-	-	-	-	Continuing	Continuing
Remarks											
APA funding associated with the Aircraft Avionics Project C97 RDT&E efforts is now in the Aviation Assured PNT line (SSN A01006) beginning in FY21. Aviation Assured PNT funding on the Comms, Nav Surveillance line (SSN AA0723) was realigned to A01006 beginning in FY21.											
D. Acquisition Strategy											
This project is comprised of multiple systems supporting aircraft avionics. While the detailed acquisition strategy varies from program to program, the general strategy is for each individual program to complete the development and testing efforts in coordination with the aircraft platforms on integration issues, use the various contracts of the aircraft platforms original equipment manufacturers on integration efforts, and utilize the United States Army Combat Capabilities Development Command Aviation											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics	Project (Number/Name) C97 / ACFT Avionics
<p>& Missile Center for software development. This requires the use of various contract methods and types to accomplish the aircraft avionics development efforts. All required acquisition program documentation is prepared.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) C97 / ACFT Avionics					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.083	Sep 2023	-		-		-	0.000	0.083	-
Subtotal			-	-		0.083		-		-		-	0.000	0.083	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EAGLE M-Code/ALT PNT	SS/CPFF	Honeywell International : Clearwater, FL	1.787	5.595	Feb 2022	2.195	Jan 2023	1.271	Jan 2024	-		1.271	0.000	10.848	-
Subtotal			1.787	5.595		2.195		1.271		-		1.271	0.000	10.848	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.787	5.595		2.278		1.271		-		1.271	0.000	10.931	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army										Date: March 2023			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)			
2040 / 5					PE 0604201A / Aircraft Avionics					C97 / ACFT Avionics			

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
AN/ARC-220 High Frequency Radio Modernization																												
Airborne Radio Control Manager Driver (AN/ARC-220 HF Radio)																												
EAGLE-M Development																												
ALT-PNT																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics	Project (Number/Name) C97 / ACFT Avionics	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AN/ARC-220 High Frequency Radio Modernization	3	2021	3	2022
Airborne Radio Control Manager Driver (AN/ARC-220 HF Radio)	3	2021	3	2022
EAGLE-M Development	3	2021	1	2024
ALT-PNT	1	2024	4	2024

Note
DGNS: Doppler Global Positioning System (GPS) Navigation Set
A-PNT: Assured-Position Navigation and Timing
M-Code: Military-Code
EGI: Embedded GPS Inertial

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
VU3: Networking And Mission Planning	-	0.816	1.057	12.402	-	12.402	2.212	2.904	2.934	2.967	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note FY 2024 base procurement funding in the amount of \$11.100 million was realigned from AA0712FPEP to PE 0604201A / Aircraft Avionics Project VU3 to support AMCS developmental activities.												
A. Mission Description and Budget Item Justification The Fiscal Year (FY) 2024 budget request funds the development of Networking and Mission Planning systems required to horizontally and vertically integrate the battlefield and the integration of those systems into Army aircraft. Tasks in this Project support research, development, and test efforts in the Engineering and Manufacturing Development phases of these systems. The AMCS is an obsolescence replacement and capability upgrade for the current Army Improved Data Modem (IDM) 401, which enables the hosting of applications to communicate, navigate, sense, and deploy weapon systems across the Joint Force in support of Army 2030 and future aviation operations. It supports the future Common Digital Backbone for the enduring and future Army Aviation fleets with the ability for further growth to host flight critical capabilities. It will provide the ability to rapidly apply technology upgrades utilizing a Modular Open Systems Approach (MOSA) with a nonproprietary Open Systems Architecture (OSA) to keep pace with evolving threats in the Multi-Domain Battlefield. FY 2024 base procurement funding in the amount of \$11.100 million was realigned from AA0712FPEP to 0604201A project VU3 to support the Aviation Mission Common Server (AMCS) developmental activities. The Improved Data Modem (IDM) is the common solution for digitizing Army Aviation and is fielded on every modernized, rotary-wing Army aircraft, including the CH-47 Chinook, AH-64 Apache and UH-60 Black Hawk. The IDM provides the Army rotary wing fleet with critical communication capabilities, enables connectivity to multiple radios used by rotary-wing aircraft and the Blue Force Tracking transceiver, and provides the means for rapid data transfer. The Aviation Mission Planning System (AMPS) is a system used to conduct pre-mission and aircraft performance planning. It receives data from multiple sources and provides that data digitally to the aircraft to support aviation missions. AMPS is used for automated mission planning, risk assessment, and transfer of mission data to aviation platforms within an Aviation unit. This includes route generation, performance planning, communications planning, terrain analysis, data transfer, and mission rehearsal. These efforts include development and testing of a new underlying architecture to support the move of Army Aviation Mission Planning from the current structure to one that supports synchronization both vertically and horizontally between Aviation and Ground forces. It will allow aircrews to continually plan and update route, threat, and performance data throughout all phases of an Aviation mission. Development of a mobile aircraft performance planning/weight and balance calculator is currently underway and will be the first migration of AMPS capabilities to a mobile hardware agnostic environment.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Aviation Mission Common Server (AMCS)									0.816	1.018	12.402	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics	Project (Number/Name) VU3 / Networking And Mission Planning	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>Description: The AMCS is an obsolescence replacement and capability upgrade for the current Army Improved Data Modem (IDM) 401, which enables the hosting of applications to communicate, navigate, sense, and deploy weapon systems across the Joint Force in support of Army 2030 and future aviation operations. It supports the future Common Digital Backbone for the enduring and future Army Aviation fleets with the ability for further growth to host flight critical capabilities. It will provide the ability to rapidly apply technology upgrades utilizing a Modular Open Systems Approach (MOSA) with a nonproprietary Open Systems Architecture (OSA) to keep pace with evolving threats in the Multi-Domain Battlefield.</p> <p>FY 2023 Plans: Perform and support production representative assessments, testing, demonstration, and qualification activities in support of the Aviation Mission Common Server (AMCS) Modular Capabilities Demonstration Qualification and Delivery Phases. Support software functionality integration and testing activities required for integration into the AMCS hardware and initial platform integration lab.</p> <p>FY 2024 Plans: Perform modification work order, testing and airworthiness development to support fielding of the Aviation Mission Common Server (AMCS). Perform and support software functionality integration and testing activities required to support integration into the AMCS hardware and initial platform integration lab and Safety of Flight testing for platform airworthiness qualification.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY23 to FY24 due to the AMCS initial system and platform level integration that provides the future architecture, hardware, and software capabilities for the next generation of IDM functionality and expanded mission processing.</p>			
<p>Title: SBIR/STTR Transfer</p> <p>Description: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)</p> <p>FY 2023 Plans: Funding to be transferred in accordance with Title 15 USC §638</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding to be transferred in accordance with Title 15 USC §638</p>		-	0.039
Accomplishments/Planned Programs Subtotals		0.816	12.402

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• AA0712: Network And Mission Plan	29.206	42.450	32.418	-	32.418	33.464	41.135	73.524	75.162	Continuing	Continuing
Remarks											
FY 2024 AA0712 base procurement funding in the amount of \$11.100 million was realigned from AA0712FPEP to 654201VU3 to support of the Aviation Mission Common Server (AMCS) developmental activities.											
D. Acquisition Strategy											
The AMCS Acquisition Strategy for development and production leverages a competitively awarded Other Transaction agreement for a Hardware and Software Open Systems Architecture (OSA) Family of Systems Line Replaceable Unites (LRUs) which align with DoD's Modular Open System Approach (MOSA) and PEO Aviation's Aviation Mission Computing Environment (AMCE).											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Support (AMCS)	Various	Combat Communications Development Command, Aviation & Missile Center : Redstone Arsenal, AL	0.010	0.110	Feb 2023	-		0.493	Dec 2023	-		0.493	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	To Be Determined : To Be Determined	-	-		0.039	Sep 2023	-		-		-	0.000	0.039	-
Subtotal			0.010	0.110		0.039		0.493		-		0.493	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware and Software Development/ Demonstration for the Aviation Mission Common Server (AMCS)	C/Various	Combat Communications Development Command, Aviation & Missile Center : Redstone Arsenal, AL	0.618	0.706	Dec 2021	-		-		-		-	0.000	1.324	-
AMCS Hardware and Software Prototype Development OTA	C/FFP	Mercury Systems : Mesa, AZ	0.199	-		0.171	Feb 2023	-		-		-	0.000	0.370	-
Subtotal			0.817	0.706		0.171		-		-		-	0.000	1.694	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware and Software Development Support	C/Various	Combat Communications Development	0.447	-		0.847	Mar 2023	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
for the Aviation Mission Common Server (AMCS)		Command, Aviation & Missile Center, Redstone Test Center and Platform SIL : Redstone Arsenal, AL													
PM Airworthiness Support (AMCS Documentation)	C/Various	Combat Communications Development Command : Redstone Arsenal, AL	-	-		-		0.825	Feb 2024	-		0.825	Continuing	Continuing	-
AMCS Cybersecurity	C/Various	Combat Communications Development Command : Redstone Arsenal, AL	-	-		-		0.648	Aug 2024	-		0.648	Continuing	Continuing	-
AMCS Enduring Fleet SIL Assets (RSA)	C/Various	Combat Communications Development Command, Aviation & Missile Center, Redstone Test Center and Platform SIL : Redstone Arsenal, AL	-	-		-		0.828	Apr 2024	-		0.828	Continuing	Continuing	-
Engineering Services	C/Various	Combat Communications Development Command, Aviation & Missile Center : Redstone Arsenal, AL	-	-		-		3.919	Feb 2024	-		3.919	Continuing	Continuing	-
Subtotal			0.447	-		0.847		6.220		-		6.220	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics				Project (Number/Name) VU3 / Networking And Mission Planning					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Level Integration (Step 5 SW integration & testing)	C/Various	Redstone Test Center : Redstone Arsenal, AL	-	-		-		0.871	Jul 2024	-		0.871	Continuing	Continuing	-
AMCS Aircraft Integration	C/Various	AIC, Platform System Interoperability Lab, Utility, Apache, Cargo or OEM SILs : Redstone Arsenal, AL	-	-		-		2.539	Feb 2024	-		2.539	Continuing	Continuing	-
AMCS Enduring Fleet HW Aircraft Integration/testing	C/Various	UH-60M : Redstone Arsenal, AL	-	-		-		2.279	Feb 2024	-		2.279	Continuing	Continuing	-
Subtotal			-	-		-		5.689		-		5.689	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.274	0.816		1.057		12.402		-		12.402	Continuing	Continuing	N/A
Remarks															

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

Date: March 2023

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604201A / Aircraft Avionics

Project (Number/Name)
VU3 / Networking And Mission Planning

[illegible]

Note

The Aviation Mission Common Server Modular Capabilities Demonstration Other Transaction Authority awarded 24 June 20. The schedule depicts the OTA's 5 Individual phases and their associated award and effort duration.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604201A / Aircraft Avionics	Project (Number/Name) VU3 / Networking And Mission Planning	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop IDM Software	4	2018	4	2018
AMCS Airworthiness Studies and Assessments	2	2019	2	2019
AMCS OTA Prototype Contract Award Phase 1	3	2020	3	2020
AMCS Alternative Systems Review (ASR)	4	2020	1	2021
AMCS OTA Prototype Contract Award Phase 2	1	2021	1	2021
AMCS preliminary Design Review (PDR)	1	2021	2	2021
AMCS OTA Contract Award Phase 3	3	2021	3	2023
AMCS Critical Design Review (CDR)	2	2023	2	2023
AMCS OTA Contract Award Phase 4	4	2022	3	2023
AMCS Deemonstrations	3	2023	3	2023
AMCS OTA Contract Award Phase 5	3	2023	3	2024
AMCS Production Decision	3	2024	3	2024
AMCS Deliveries	3	2024	3	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604270A / Electronic Warfare Development							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	29.683	4.140	12.789	-	12.789	13.832	10.438	10.646	8.970	0.000	90.498
DX5: Electronic Warfare And Management Tool	-	16.168	1.960	5.022	-	5.022	7.933	7.564	7.754	6.058	0.000	52.459
DX6: Multi-Function Electronic Warfare (MFEW)	-	11.581	-	5.596	-	5.596	4.287	1.260	1.261	1.262	0.000	25.247
VS6: Integrated Electronic Warfare Systems	-	1.934	2.180	2.171	-	2.171	1.612	1.614	1.631	1.650	0.000	12.792

A. Mission Description and Budget Item Justification

A portion of this funding line is a key enabler of the Army Modernization Priorities in support of Electronic Warfare Planning and Management Tool (EWPMT) program.

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

The IEWS capability set is structured along four program lines of effort: 1) Project DX5 Electronic Warfare Planning and Management Tool (EWPMT), 2) Project DX6 Multi-Function EW (MFEW), 3) Project VS6 Counter Radio-Controlled Improvised Explosive Devices (RCIED) Electronic Warfare (CREW) which provides current defensive electronic attack capability.

Project DX5 - This funding line is in support of the Electronic Warfare Planning and Management Tool (EWPMT) which is a key enabler of Army Modernization Priorities, APNT CFT and Network CFT. EWPMT is the Commander's tool to control, manage, and dominate the Electromagnetic Spectrum (EMS). It will provide the ability to remotely control & manage Electronic Warfare (EW) assets in order to execute offensive and defensive Electronic Attack, EW targeting, and synchronize EW and Spectrum Management Operations (SMO) across Intelligence, Operations, and Signals in support of Multi-Domain Operations (MDO). As a Commander's tool, EWPMT is predominantly utilized by the Cyber Electromagnetic Activities (CEMA) cell for mission planning, access to national and strategic sensors, data repositories, as well as enabling the synchronization of EW, Signals Intelligence (SIGINT) operations, and Cyber Domains. EWPMT supports the MDO Task Force (MDTF) and other units getting authorization for early equipping via Operational Needs Statement (ONS).

Project DX6 - MFEW-AL is the Army's only program providing tactical Commanders with deep look, organic, airborne, offensive electronic warfare (EW), empowering Commanders to shape the Electromagnetic Spectrum (EMS) to their advantage. The MFEW Air Large system will provide: 1) Offensive Electronic Attack (OEA) - Non-Kinetic Fires capability with the intent of denying, degrading, or disrupting enemy communications capability and non-communications emitters; 2) Electronic Warfare Support (ES) - Capability to search, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic (EM) energy for the

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604270A / Electronic Warfare Development				
purpose of immediate threat recognition, targeting, planning, and execution of future operations; 3) Dissemination of Military Information Support Operations (MISO) products; and 4) Support of Offensive Cyber Operations (OCO) and Multi-Domain Operations.						
Project VS6 - Counter Radio Controlled Improvised Explosive Device (RCIED) Electronic Warfare (CREW) provides protection of ground forces operating in vehicle convoys, single vehicles and fixed locations in operational theaters which enables freedom of movement across the depth and breadth of the operational environment. Current CREW systems are programmable with techniques to mitigate emerging threats. In order to keep pace with the threat evolution, development efforts will provide fielded CREW systems as well as other Electronic Warfare (EW) systems with techniques that mitigate the range of threats as required. These development efforts may include development of new techniques, integration of existing techniques, as well as hardware and software development and integration in order to pace the threat.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		30.840	4.243	2.216	-	2.216
Current President's Budget		29.683	4.140	12.789	-	12.789
Total Adjustments		-1.157	-0.103	10.573	-	10.573
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-1.157	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	10.573	-	10.573
• FFRDC Transfer		-	-0.103	-	-	-
Change Summary Explanation						
Fiscal Year (FY) 2024 Total funding increase for 0604270A is \$10.573M (DX5 +\$5.022M, DX6 +\$5.596M, and VS6 -\$0.045M) to support engineering and logistics development, capability maturation, performance technology improvements, system hardening, and sensor integration.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Develop ment</i>				Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
DX5: <i>Electronic Warfare And Management Tool</i>	-	16.168	1.960	5.022	-	5.022	7.933	7.564	7.754	6.058	0.000	52.459
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is in support of the Electronic Warfare Planning and Management Tool (EWPMT) which is a key enabler of Army Modernization Priorities, APNT CFT and Network CFT. EWPMT is the Commander's tool to control, manage, and dominate the Electromagnetic Spectrum (EMS). It will provide the ability to remotely control & manage Electronic Warfare (EW) assets in order to execute offensive and defensive Electronic Attack, EW targeting, and synchronize EW and Spectrum Management Operations (SMO) across Intelligence, Operations, and Signals in support of Multi-Domain Operations (MDO). As a Commander's tool, EWPMT is predominantly utilized by the Cyber Electromagnetic Activities (CEMA) cell for mission planning, access to national and strategic sensors, data repositories, as well as enabling the synchronization of EW, Signals Intelligence (SIGINT) operations, and Cyber Domains. EWPMT supports the MDO Task Force (MDTF) and other units getting authorization for early equipping via Operational Needs Statement (ONS).

Justification:

Fiscal Year (FY) 2024 Base RDT&E funds in the amount of \$5.022 million fund EWPMT capability maturation, performance improvements, system hardening, and Terrestrial Layer System (TLS) / Multi-Function Electronic Warfare (MFEW) and other sensor integration.

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

	FY 2022	FY 2023	FY 2024
Title: EWPMT	16.168	1.888	5.022
Description: EWPMT software application provides Electronic Warfare and Spectrum Management soldiers the ability to plan, coordinate, integrate, and synchronize Cyber Electromagnetic Activities (CEMA) across all Warfighting Functions in support of Multi-Domain Operations across all Army echelons.			
FY 2023 Plans: Maintain EWPMT software capability and prepare for Army fielding in FY24.			
FY 2024 Plans: EWPMT capability maturation, performance improvements, system hardening, and Terrestrial Layer System (TLS) / Multi-Function Electronic Warfare (MFEW) and other sensor integration.			
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 Increase of \$3.062 million funds EWPMT capability maturation, performance improvements, and system hardening.			
Title: SBIR/STTR Transfer	-	0.072	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
Description: Small Business Innovative Research (SBIR) / Small Business Technology Transfer (STTR)			
FY 2023 Plans: Funding to be transferred in accordance with Title 15 USC S638			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding to be transferred in accordance with Title 15 USC S638			
Accomplishments/Planned Programs Subtotals	16.168	1.960	5.022

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• K00002: <i>EW Planning & Management Tools (EWPMT)</i>	0.783	-	21.278	-	21.278	26.945	18.356	8.798	3.183	0.000	79.343

Remarks

Supports EWPMT fielding to Army 2030.

D. Acquisition Strategy

EWPMT is an Acquisition Category II program of record that follows an agile acquisition strategy under the governance and requirements in the Information System Capability Development Document. The acquisition strategy includes the delivery of software biannually as part of Development, Security, Operations (DEVSECOPS) model that will include refined or new capability and functionality. Operations will include executing fielding activities and supporting experimentation while moving to a continuous Authority to Operate. This acquisition and requirements strategy enables frequent delivery of critical EW planning and management capabilities in response to changing threat, technology, and techniques in support of MDO.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / Electronic Warfare Develop ment				Project (Number/Name) DX5 / Electronic Warfare And Management Tool					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office Support	Various	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	13.914	0.647	Nov 2021	0.166	Feb 2023	0.285	Nov 2023	-		0.285	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	TBD : TBD	0.604	-		0.072	Apr 2023	-		-		-	0.000	0.676	-
Subtotal			14.518	0.647		0.238		0.285		-		0.285	Continuing	Continuing	N/A
Remarks															
Fiscal Year (FY) 2024 funds in the amount of \$0.285 million represent Program Management Office (PMO) support staff labor, government travel, and shared support costs.															
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EMD Contract- EWPMT Software Development & Interim Contractor Support	C/IDIQ	Raytheon : Fort Wayne, IN	0.674	7.686	Nov 2021	0.201	Feb 2023	-		-		-	0.000	8.561	14.953
Contract - EWPMT Fielding, Training, Support and Product Improvement	C/CPFF	TBD : TBD	-	-		-		2.647	Apr 2024	-		2.647	Continuing	Continuing	Continuing
Subtotal			0.674	7.686		0.201		2.647		-		2.647	Continuing	Continuing	N/A
Remarks															
FY24 funds in the amount of \$2.647 million represent funding for EWPMT performance and functionality improvements on the EWPMT Fielding, Training, Support and Product Improvement Contract.															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EWPMT Technical and Engineering Support	Various	Various : Various	37.540	7.394	Dec 2021	1.521	Feb 2023	1.620	Nov 2023	-		1.620	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			37.540	7.394		1.521		1.620		-		1.620	Continuing	Continuing	N/A
Remarks FY24 funds in the amount of \$1.440 million represent EWPMT capability maturation and sensor integration.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
EWPMT Test Support	Various	Various : Various	8.244	0.441	Jan 2022	-		0.470	Jun 2024	-		0.470	Continuing	Continuing	Continuing
Subtotal			8.244	0.441		-		0.470		-		0.470	Continuing	Continuing	N/A
Remarks FY24 funds in the amount of \$0.470 million provides the ability to execute functional testing and participate in integration events.															
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			60.976	16.168		1.960		5.022		-		5.022	Continuing	Continuing	N/A
Remarks															

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

Date: March 2023

Appropriation/Budget Activity
2040 / 5

R-1 Program Element (Number/Name)
PE 0604270A / Electronic Warfare Develop
ment

Project (Number/Name)
DX5 / Electronic Warfare And Management
Tool

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Full Deployment Decision (FDD)								1 FDD																				
Full Operational Capability (FOC)															3 FOC													
EWPMT Contract Software Development & Interim Contractor...																												
EWPMT Contract Fielding, Training, Support and Product I...																												
EWPMT Fielding ARMY 2030																												
EWPMT Fielding TOTAL ARMY																												
Cybersecurity, Functional, and Acceptance Testing																												
TLS Operational Assessment (OA) Support															2 TLS OA Support													
EWPMT Software Updates																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX5 / <i>Electronic Warfare And Management Tool</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Full Deployment Decision (FDD)	3	2023	3	2023
Full Operational Capability (FOC)	4	2025	4	2025
EWPMT Contract Software Development & Interim Contractor Support	4	2014	1	2024
EWPMT Contract Fielding, Training, Support and Product Improvement	2	2024	2	2029
Test CD1 (Government Confidence test)	2	2016	2	2016
Limited Deployment Decision for CD1	4	2016	4	2016
CD1 Fielding	4	2016	3	2018
Initial Operational Capability (IOC)	1	2017	1	2017
Development and Test for CD2	4	2016	4	2018
Development and Test for CD3	3	2018	3	2020
Development for CD4 and Test for EWPMT Increment I	4	2019	4	2021
Initial Operational Test & Evaluation (IOT&E)	3	2021	4	2021
Development and Test for CD1	4	2014	3	2016
EWPMT Fielding ARMY 2030	3	2024	2	2027
EWPMT Fielding TOTAL ARMY	3	2027	4	2029
Cybersecurity, Functional, and Acceptance Testing	3	2022	4	2029
TLS Operational Assessment (OA) Support	4	2024	4	2024
EWPMT Software Updates	1	2024	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
DX6: <i>Multi-Function Electronic Warfare (MFEW)</i>	-	11.581	-	5.596	-	5.596	4.287	1.260	1.261	1.262	0.000	25.247
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MFEW-AL is the Army's only program providing tactical Commanders with deep look, organic, airborne, offensive electronic warfare (EW), empowering Commanders to shape the Electromagnetic Spectrum (EMS) to their advantage. The MFEW Air Large system will provide: 1) Offensive Electronic Attack (OEA) - Non-Kinetic Fires capability with the intent of denying, degrading, or disrupting enemy communications capability and non-communications emitters; 2) Electronic Warfare Support (ES) - Capability to search, intercept, identify, and locate or localize sources of intentional and unintentional radiated electromagnetic (EM) energy for the purpose of immediate threat recognition, targeting, planning, and execution of future operations; 3) Dissemination of Military Information Support Operations (MISO) products; and 4) Support of Offensive Cyber Operations (OCO) and Multi-Domain Operations.

MFEW-AL has received CFT "Priority 2 Critical Enabler" endorsements from: Long Range Precision Fires, Assured Position Navigation & Timing, Future Vertical Lift and Network CFTs.

Justification:

Fiscal Year (FY) 2023 has no funded activities. Fiscal Year (FY) 2024 funding increase of \$5.596 million is for Gray Eagle integration, engineering and logistics development, and test leveraging existing Other Government Agencies (OGA).

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

	FY 2022	FY 2023	FY 2024
Title: Multi-Function Electronic Warfare (MFEW) Air Large	11.581	-	5.596
Description: MFEW-Air Large is an airborne Electronic Warfare payload to be integrated onto the Gray Eagle Unmanned Aerial Vehicle to provide offensive Electronic Attack (EA) and Electronic Warfare Support (ES) capability to the Brigade Combat Team (BCT).			
FY 2024 Plans: Gray Eagle Integration			
FY 2023 to FY 2024 Increase/Decrease Statement: No RDT&E funded activities in (FY) 2023.			
Accomplishments/Planned Programs Subtotals	11.581	-	5.596

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>			Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• B05000: <i>Multi-Function Electronic Warfare (MFEW) Systems</i>	-	3.060	15.941	-	15.941	23.317	3.981	3.985	3.988	0.000	54.272
Remarks											
D. Acquisition Strategy											
MFEW-AL is the Army's only airborne EW/Cyber enabled capability to support the maneuver commander to enable Multi-Domain Operations and Long Range Precision Fires. MFEW Acquisition strategy employs a phased development approach:											
Phase 1 Other Transaction Agreement (OTA), awarded SEP 2018, was an 18-month contract to develop initial capability and support. Two (2) prototypes were built, delivered and flown at Yuma Proving Grounds (YPG) on a surrogate aircraft. The MFEW-AL prototype system successfully demonstrated EW capabilities in FEB 2020.											
Phase 2 of the OTA, follow-on effort to build four (4) Engineering and Manufacturing Development (EMD) Systems for testing, qualification, flight testing and assessment to support future deployment and procurement decisions was awarded JAN 2020. Systems will be delivered and tested 3QFY23.											
FY24-FY25 activities include Gray Eagle integration, engineering and logistics development, and test leveraging existing Other Government Agencies (OGA).											
MFEW-AL will employ Sensor Open Systems Architecture (SOSA) open architecture to enable the pursuit of continuous capability improvements to pace the threat.											
MFEW production will be in accordance with 10 U.S.C. 2371b ("Authority of the Department of Defense to carry out certain prototype projects). Upon a determination that MFEW has successfully met the OTA transition requirements, a follow-on production contract without the use of competitive procedures, is planned. Following receipt of a MS C ADM on 14 May 2021, procurement of two (2) LRIP systems awarded under existing contract mechanism.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / Electronic Warfare Development				Project (Number/Name) DX6 / Multi-Function Electronic Warfare (MFEW)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Office Support - MFEW Air	Various	PM Electronic Warfare & Cyber (PM EW&C) : Aberdeen Proving Ground, MD	1.744	0.158	Mar 2023	-		0.582	Jan 2024	-		0.582	12.520	15.004	-
Subtotal			1.744	0.158		-		0.582		-		0.582	12.520	15.004	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MFEW OTA EMD Contract	C/FFP	C5 Consortium OTA : Acquisition Contracting Center-New Jersey	67.679	1.541	Nov 2021	-		-		-		-	0.000	69.220	-
Gray Eagle Integration	Option/CPFF	General Atomics : San Diego, CA	2.261	0.400	Mar 2023	-		4.000	Jan 2024	-		4.000	0.000	6.661	-
Engineering & Logistics Development	SS/CPFF	Lockheed Martin Corporation : Owego, NY	3.907	4.654	Mar 2023	-		0.457	Dec 2023	-		0.457	0.000	9.018	-
Subtotal			73.847	6.595		-		4.457		-		4.457	0.000	84.899	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Engineering - MFEW Air	Various	Various : Aberdeen Proving Ground, MD	4.079	1.584	Dec 2021	-		0.557	Jan 2024	-		0.557	0.000	6.220	-
Subtotal			4.079	1.584		-		0.557		-		0.557	0.000	6.220	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test range and test support	Various	Yuma Proving Grounds : Yuma, AZ	2.246	-		-		-		-		-	0.000	2.246	-
Limited User Test	MIPR	Army Test Command : Aberdeen Proving Ground, MD	-	3.244	Jan 2023	-		-		-		-	0.000	3.244	-
Subtotal			2.246	3.244		-		-		-		-	0.000	5.490	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			81.916	11.581		-		5.596		-		5.596	12.520	111.613	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>		Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
MFEW Air OTA EMD																												
Developmental Test / Limited User Test																												
MFEW Air Production and Fielding																												
Gray Eagle Integration																												
Gray Eagle Developmental Test																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) DX6 / <i>Multi-Function Electronic Warfare (MFEW)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Tailored Milestone B	3	2018	3	2018
MFEW Air OTA Award	4	2018	4	2018
MFEW Air OTA Prototype Design & Development	4	2018	2	2020
MFEW Air OTA EMD	2	2020	2	2023
Tailored Milestone C	3	2021	3	2021
Developmental Test / Limited User Test.	3	2023	3	2023
MFEW Air Production and Fielding	3	2026	4	2031
Gray Eagle Integration	1	2024	4	2025
Gray Eagle Developmental Test	2	2025	2	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>				Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
VS6: <i>Integrated Electronic Warfare Systems</i>	-	1.934	2.180	2.171	-	2.171	1.612	1.614	1.631	1.650	0.000	12.792
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Counter Radio Controlled Improvised Explosive Device (RCIED) Electronic Warfare (CREW) provides protection of ground forces operating in vehicle convoys, single vehicles and fixed locations in operational theaters which enables freedom of movement across the depth and breadth of the operational environment. Current CREW systems are programmable with techniques to mitigate emerging threats. In order to keep pace with the threat evolution, development efforts will provide fielded CREW systems as well as other Electronic Warfare (EW) systems with techniques that mitigate the range of threats as required. These development efforts may include development of new techniques, integration of existing techniques, as well as hardware and software development and integration in order to pace the threat.

Justification:

Fiscal Year (FY) 2024 Base funding in the amount of \$2.171 million funds the continued support of CREW systems as well as other EW systems with techniques that mitigate the range of threats as required. These efforts include development of new techniques, integration of existing techniques, as well as hardware and software enhancement and integration in order to pace the threat.

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

	FY 2022	FY 2023	FY 2024
Title: IEWS - CREW	1.934	2.100	2.171
Description: The Integrated Electronic Warfare System (IEWS) will provide multiple capabilities, to include Electronic Warfare Planning and Management Tool (EWPMT), Multi-Function EW (MFEW), and Defensive Electronic Attack (DEA). The Army's current Defensive Electronic Attack solution is Counter Radio Controlled Improvised Explosive Device (RCIED) Electronic Warfare (CREW).			
FY 2023 Plans: Continue IEWS development of new techniques, integration of existing techniques, and hardware and software development and integration in order to pace the threat.			
FY 2024 Plans: Continue IEWS development of new techniques, integration of existing techniques, and hardware and software development and integration in order to pace the threat.			
FY 2023 to FY 2024 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Fiscal Year (FY) 2024 funding increase of \$71,000 for development of new techniques, integration of existing techniques, and hardware and software development.				
Title: SBIR/STTR Transfer		-	0.080	-
FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638				
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638				
Accomplishments/Planned Programs Subtotals		1.934	2.180	2.171
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy VS6 funding supports hardware and software enhancement, to include open architecture waveforms/techniques and hardware, and integration to pace the threat. Will leverage Other Government Agencies' competitively awarded contracts and task orders.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Develop ment</i>				Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Staff/Travel for CREW	Allot	PM Electronic Warfare & Cyber : Aberdeen Proving Ground, MD	2.900	0.020	Dec 2021	0.020	Dec 2022	0.020	Dec 2023	-		0.020	0.000	2.960	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.080		-		-		-	0.000	0.080	-
Subtotal			2.900	0.020		0.100		0.020		-		0.020	0.000	3.040	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IEWS Engineering and Development	MIPR	I2WD : Aberdeen Proving Ground, MD	7.655	1.914	Dec 2021	1.780	Dec 2022	1.841	Dec 2023	-		1.841	0.000	13.190	-
Subtotal			7.655	1.914		1.780		1.841		-		1.841	0.000	13.190	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Continous evaluation of CREW Technologies	MIPR	Yuma Proving Ground Yuma, AZ : YPG, AZ	1.718	-		0.300	Dec 2022	0.310	Dec 2023	-		0.310	0.000	2.328	-
Subtotal			1.718	-		0.300		0.310		-		0.310	0.000	2.328	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			12.273	1.934		2.180		2.171		-		2.171	0.000	18.558	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army																Date: March 2023												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604270A / Electronic Warfare Development								Project (Number/Name) VS6 / Integrated Electronic Warfare Systems										
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Integrated Electronic Warfare System Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604270A / <i>Electronic Warfare Development</i>	Project (Number/Name) VS6 / <i>Integrated Electronic Warfare Systems</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Integrated Electronic Warfare System Development	2	2021	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	77.027	83.329	64.076	-	64.076	52.728	56.332	56.876	57.513	Continuing	Continuing
CF3: <i>Integrated Soldier Systems (SL CFT)</i>	-	4.211	4.403	4.407	-	4.407	4.451	4.544	4.591	4.642	0.000	31.249
ES9: <i>Advanced Tactical Parachute System</i>	-	1.705	3.029	2.776	-	2.776	3.732	4.070	4.114	4.160	0.000	23.586
EW4: <i>Crew Served Weapons Engineering Development</i>	-	8.854	7.458	4.300	-	4.300	3.772	4.074	4.116	4.162	0.000	36.736
FF2: <i>Small Arms Fire Control</i>	-	6.752	8.179	10.050	-	10.050	4.966	4.971	5.025	5.081	0.000	45.024
FL8: <i>84mm MAAWS Ammunition</i>	-	5.893	-	-	-	-	-	-	-	-	0.000	5.893
FM4: <i>Next Generation Squad Weapons</i>	-	13.103	17.616	16.141	-	16.141	11.058	11.072	11.191	11.316	0.000	91.497
S58: <i>Soldier Enhancement Program</i>	-	13.522	10.182	4.897	-	4.897	5.094	5.101	5.105	5.162	0.000	49.063
S60: <i>Clothing & Equipment</i>	-	5.196	6.313	3.427	-	3.427	6.364	8.879	8.974	9.074	0.000	48.227
S61: <i>Acis Engineering Development</i>	-	2.418	9.927	3.788	-	3.788	0.466	0.466	0.471	0.477	Continuing	Continuing
S63: <i>Individual Weapons Engineering Development</i>	-	3.518	3.956	3.549	-	3.549	3.510	3.791	3.830	3.873	0.000	26.027
S70: <i>Personnel Recovery Support System (PRSS)</i>	-	3.018	2.963	2.591	-	2.591	0.605	0.652	0.659	0.667	Continuing	Continuing
VS5: <i>Soldier Protective Equipment</i>	-	8.837	9.303	8.150	-	8.150	8.710	8.712	8.800	8.899	0.000	61.411

A. Mission Description and Budget Item Justification

A portion of this funding line directly aligns to the Soldier Lethality Army Modernization Priority. This Program Element (PE) Engineering and Manufacturing Development (EMD) manages the Soldier as a system, with the goal of increasing Soldiers' combat effectiveness, increasing survivability, and improving the Soldiers' quality of life. It develops and tests prototypes of weapons, clothing, equipment, and other items useful to support the Soldier.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	
<p>Project CF3 (Integrated Soldier Systems (SL CFT)) test, maintain and evolve a Soldier/squad equipment configuration baseline, the Architecture Assessment Tool and conduct configuration management at the system level. Physically integrate components, improve compatibility and interoperability across programs. Establish and maintain tools that provide Systems Engineering, Configuration Management and Evaluation in a virtual and physical environment. Conduct evaluations and integrate mission-specific equipment into the Adaptive Squad Architecture (ASA) with continued emphasis on development of ICDs, evaluations, and improved fidelity.</p> <p>Project ES9 (Advanced Tactical Parachute System) improves personnel parachute systems and associated equipment for low and high altitude operations to include canopy improvements based on integration of new technology with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment.</p> <p>Project EW4 (Crew Served Weapons Engineering Development) supports efforts to transition components or prototypes from Small Arms Improvement, Project S54, Program Element 0603827A, (Budget Activity 4) and other domestic and foreign sources of small arms weapons to demonstrate, test and evaluate capability near or at planned operational requirements.</p> <p>Project FF2 (Small Arms Fire Control) supports the development of an advanced fire control for the Next Generation Automatic Rifle (NGSW-AR) and Rifle (NGSW-R). The Next Generation Fire Control will increase the probability of hit and decrease the time to engage through a variable powered direct view optic with integrated range finder, ballistic calculator, and digital display capable of providing an adjusted aim point.</p> <p>Project FI2 (Lightweight 30mm Cannon) provides increased lethality modification to Product Directorate Counter-Rocket Artillery Mortars (PD C-RAM) under a JUONS. An upgraded medium caliber weapon will be developed, tested and evaluated for integration into a modified remote weapon station under an Urgent Materiel Release (UMR).</p> <p>Project FL8 (84mm MAAWS Ammunition) supports test, evaluation and quality up to seven types of 84 millimeter (mm) munitions for the U.S. Army use with the M3/M3A1 Multi-Role Anti-Personnel Weapon Systems (MAAWS).</p> <p>Project FM4 (Next Generation Squad Weapons) supports the rapid prototyping and development of a NGSW-AR, NGSW-R and common cartridge to provide capability improvements in accuracy, range and lethality, in order to maintain overmatch and meet future warfighter requirements.</p> <p>Project S58 (Soldier Enhancement Program) supports accelerated integration, modernization, and enhancement efforts of lighter, more lethal weapons, and improved Soldier items including lighter, more comfortable load-bearing equipment, field gear, survivability items, communications equipment, and navigational aids.</p> <p>Project S60 (Clothing & Equipment) supports pre-production development of state-of-the-art individual clothing and equipment to improve the survivability, mobility and sustainment affecting the quality of life of the individual Soldier.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army			Date: March 2023			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				
Project S61 (Acis Engineering Development) provides System Development programs with improved aircrew safety, survivability, and human performance that amplify the warfighting effectiveness and facilitates full-spectrum dominance of the Army aircraft including the AH-64 Apache/Longbow, CH-47 Chinook, UH/HH-60 Blackhawk, Light Utility Helicopter, and Future Vertical Lift (FVL) platforms.						
Project S63 (Individual Weapons Engineering Development) demonstrates engineering development models or integrated commercial items designed to enhance lethality, target acquisition, fire control, training effectiveness, and reliability for small arms weapon systems and ammunition. Programs include Improved Weapons Coatings, Personal Defense Weapon, 30 Round 5.56mm Magazine, Modular Handgun System (MHS), Precision Sniper Rifle (PSR), Sub Compact, and Interim Combat Service Rifle (ICR).						
Project S70 (Personnel Recovery Support System (PRSS)) provides system research, development and testing of the Personal Recovery Support System/Personnel Recovery Support Equipment supporting operations to report and locate isolated, missing, detained or captured Soldiers.						
Project VS5 (Soldier Protective Equipment) supports engineering and manufacturing development of Individual Soldier Ballistic Protection equipment. It will leverage advancements in technology to continue incremental improvements to body armor (to include improved outer tactical vests, plate carriers, and helmets) and other personal protective equipment.						
The total cost of the the Next Generation Squad Weapons Rapid Prototyping Middle Tier of Acquisition effort is \$156.83 million RDT&E from FY19 to FY23. The remainder of the Next Generation Squad Weapons Rapid Prototyping is fully funded across the Future Years Defense Program.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		79.339	66.529	58.051	-	58.051
Current President's Budget		77.027	83.329	64.076	-	64.076
Total Adjustments		-2.312	16.800	6.025	-	6.025
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-3.200			
• Congressional Rescissions		-	-			
• Congressional Adds		-	20.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-2.312	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	6.025	-	6.025
Congressional Add Details (\$ in Millions, and Includes General Reductions)					FY 2022	FY 2023
Project: EW4: Crew Served Weapons Engineering Development						
Congressional Add: Congressional Add: Cannon Life Extension Program					1.500	1.500

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>		R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	
<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u>		FY 2022	FY 2023
Congressional Add: <i>Congressional Add: Turret Gunner Survivability and Simulation Environment</i>		5.000	-
Congressional Add: <i>Congressional Add: CROWS - Acoustic Hailing Device</i>		-	1.000
Congressional Add Subtotals for Project: EW4		6.500	2.500
Project: FM4: <i>Next Generation Squad Weapons</i>			
Congressional Add: <i>NGSW Commercial Magazine Testing</i>		-	5.000
Congressional Add Subtotals for Project: FM4		-	5.000
Project: S58: <i>Soldier Enhancement Program</i>			
Congressional Add: <i>Program increase - soldier enhancement program</i>		10.000	5.000
Congressional Add Subtotals for Project: S58		10.000	5.000
Congressional Add Totals for all Projects		16.500	12.500
<u>Change Summary Explanation</u> Increase in FY 2024 funding request from Previous President's Budget to Current President's Budget to support Army investment in Soldier Enhancement Program and Acis Engineering Development.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) CF3 / Integrated Soldier Systems (SL CFT)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CF3: Integrated Soldier Systems (SL CFT)	-	4.211	4.403	4.407	-	4.407	4.451	4.544	4.591	4.642	0.000	31.249
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Adaptive Squad Architecture (ASA), and Soldier Integration Facility (SIF) are efforts which will allow optimization of soldiers as Integrated Weapons Systems" and "Squad as an Integrated Combat Platform". The ASA focus will be the system-of-systems full virtual integration of all mission-specific equipment as well as full configuration management of the Configuration Database (CD), maintaining the Architecture Assessment Tool (AAT) and the development of Interface Control Documents (ICDs). The SIF focus is both team and squad level constructive and live experimentation to support ongoing optimization priorities. The ASA/SIF will develop a metric-based approach that will include virtual, constructive and live evaluations and tools across the Department of Defense (DoD), academia and industry which will be used for senior leaders to make deliberate decisions based on the analysis of Soldier/Squad performance. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy and is a priority of the Soldier Lethality Cross Functional Team.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Integrated Soldier Systems									4.211	4.242	4.407	
Description: Test, maintain and evolve a Soldier/squad equipment configuration baseline, the Architecture Assessment Tool and conduct configuration management at the system level. Physically integrate components, improve compatibility and interoperability across programs. Establish and maintain tools that provide Systems Engineering, Configuration Management and Evaluation in a virtual and physical environment. Conduct evaluations and integrate mission-specific equipment into the Adaptive Squad Architecture (ASA) with continued emphasis on development of ICDs, evaluations, and improved fidelity.												
FY 2023 Plans: Continue to develop and integrate mission-specific equipment with other combat platforms into initial version of ASA.												
FY 2024 Plans: Continue to develop and integrate mission-specific equipment with other combat platforms into initial version of ASA.												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase between FY23 and FY24 due to anticipated changes in requirements. New mission support of Futures, AI/ML Learning and other integration activities.												
Title: SBIR/STTR Transfer									-	0.161	-	
Description: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.												
FY 2023 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) CF3 / Integrated Soldier Systems (SL CFT)				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC §638												
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.												
Accomplishments/Planned Programs Subtotals										4.211	4.403	4.407
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• CF2: Integrated Soldier Systems Prototyping (SL CFT)	2.963	3.831	3.688	-	3.688	3.728	3.988	4.030	4.075	0.000	26.303	
Remarks												
D. Acquisition Strategy												
PEO Soldier will utilize available Adaptive Squad Architecture (ASA) and tools plus exercise the SIF with Team level and Squad level experimentation to assess system-of-systems capabilities for evaluation and integration, using current Systems Engineering and Technical Assistance (SETA) contracts, Federally Funded Research and Development Center personnel (FFRDCs) as necessary, plus tools/deliverables built under project CF2. The ASA/SIF will develop a metric-based approach that will include virtual, constructive and live evaluations and tools across the Department of Defense (DoD), academia and industry which will be used for senior leaders to make deliberate decisions based on the analysis of Soldier/Squad performance. The PEO will utilize project CF3 to leverage any data, architectural products or designs from the IVAS program and other PEO-S and Soldier Lethality Cross Functional Team priorities.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) CF3 / Integrated Soldier Systems (SL CFT)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ASA Engineering, Manufacturing, Development	MIPR	Various : Various	6.446	0.886	Jan 2022	0.152	Jan 2023	0.152	Jan 2024	-		0.152	0.000	7.636	-
Subtotal			6.446	0.886		0.152		0.152		-		0.152	0.000	7.636	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ASA/SIF evaluations	MIPR	Various : To Be Determined	4.801	3.325	Jan 2022	4.251	Jan 2023	4.255	Jan 2024	-		4.255	0.000	16.632	-
Subtotal			4.801	3.325		4.251		4.255		-		4.255	0.000	16.632	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			11.247	4.211		4.403		4.407		-		4.407	0.000	24.268	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army										Date: March 2023			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)			
2040 / 5					PE 0604601A / Infantry Support Weapons					CF3 / Integrated Soldier Systems (SL CFT)			

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
ASA Integration																												
Soldier Integration Facility Evaluations																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) CF3 / Integrated Soldier Systems (SL CFT)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ASA Integration	2	2020	4	2028
Soldier Integration Facility Evaluations	2	2020	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) ES9 / Advanced Tactical Parachute System			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
ES9: Advanced Tactical Parachute System	-	1.705	3.029	2.776	-	2.776	3.732	4.070	4.114	4.160	0.000	23.586
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Funding in this project supports the Army's Cross Functional Teams (CFT) initiatives. Advanced Tactical Parachute System funding improves Low Altitude and High Altitude personnel parachutes and associated equipment to include test and evaluation of items transitioning from Advanced Component Development and prototype (6.4) efforts, with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment. Funding also supports improvements and testing/evaluation of personnel parachute systems including integration and interface on the Soldier system. This project will continue to support cross-service initiatives to improve commonality.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Advanced Tactical Parachute System									1.705	2.918	2.776	
Description: Advanced Tactical Parachute System funds improvements and testing/evaluation of personnel parachute systems. Project supports improved Low Altitude and High Altitude personnel parachute systems and associated equipment to include test and evaluation of items transitioning from Advance Component Development and prototype (6.4) efforts, with the goal of enhancing the insertion capability and safety of the airborne Soldier and increasing the performance, reliability, and durability of personnel airdrop equipment.												
FY 2023 Plans: Developmental Testing and Operational Testing (DT/OT) for Parachutist Emergency Release System (PERS). Conduct test and evaluation of T-11 modification to address cross corner inversion malfunctions. Enhance high and low altitude insertion capabilities and continue to support modernization initiatives to parachute systems and ancillary equipment.												
FY 2024 Plans: Continue Developmental Testing and Operational Testing (DT/OT) for Parachutist Emergency Release System (PERS). Continue with test and evaluation of T-11 modification to address cross corner inversion malfunctions. Continue enhancement of high and low altitude insertion capabilities and continue supporting modernization initiatives to parachute systems and ancillary equipment.												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decrease reflects schedule extension of PERS testing.												
Title: SBIR/STTR Transfer									-	0.111	-	
Description: Funding transferred in accordance with Title 15 USC 638.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) ES9 / Advanced Tactical Parachute System				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638.												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.												
Accomplishments/Planned Programs Subtotals										1.705	3.029	2.776
C. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• MA7801: Advanced Tactical Parachute System	34.959	42.444	39.279	-	39.279	36.044	33.201	33.218	33.247	0.000	252.392	
• ET8: Personnel Airdrop System Development	1.113	1.853	2.208	-	2.208	0.932	2.311	2.336	2.363	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) ES9 / Advanced Tactical Parachute System					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev Contracts	C/FFP	Various : Various	10.896	0.500		0.756		0.500		-		0.500	6.335	18.987	Continuing
Dev Sys Engineering Spt	MIPR	Various : Various	1.697	0.235		0.373		0.400		-		0.400	1.190	3.895	Continuing
Subtotal			12.593	0.735		1.129		0.900		-		0.900	7.525	22.882	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support Costs	MIPR	DEVCOM-SC : Natick, MA	2.945	0.203		0.323		0.350		-		0.350	0.491	4.312	Continuing
Subtotal			2.945	0.203		0.323		0.350		-		0.350	0.491	4.312	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT/OT	MIPR	various : various	8.120	0.767		1.577		1.526		-		1.526	4.913	16.903	Continuing
Subtotal			8.120	0.767		1.577		1.526		-		1.526	4.913	16.903	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			23.658	1.705		3.029		2.776		-		2.776	12.929	44.097	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army										Date: March 2023			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)			
2040 / 5					PE 0604601A / Infantry Support Weapons					ES9 / Advanced Tactical Parachute System			

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Enhanced Electronic Auto Activation Device (EEAAD) Dev																												
EEAAD Milestone C																												
Airborne Insertion Enhancements																												
PERS Development																												
PERS Milestone C																												
Static Line Reserve Parachute Automatic Activation Devic...																												
Develop and Test Towed Jumper Detection System (TJDS)																												
Static Line Parachute System Enhancements																												
T-11 Cross Corner Inversion Modification																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) ES9 / Advanced Tactical Parachute System	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Enhanced Electronic Auto Activation Device (EEAAD) Dev	1	2019	1	2023
EEAAD Milestone C	1	2023	1	2023
Airborne Insertion Enhancements	1	2019	4	2028
PERS Development	4	2021	1	2025
PERS Milestone C	1	2025	1	2025
Static Line Reserve Parachute Automatic Activation Device (SLRPAAD) Development	1	2025	4	2027
Develop and Test Towed Jumper Detection System (TJDS)	1	2025	4	2026
Static Line Parachute System Enhancements	1	2027	4	2028
T-11 Cross Corner Inversion Modification	1	2023	4	2026

Note

Note: High and Low Altitude Insertion Capabilities includes the following programs: Glide Augmentation, Situational Awareness Aids, High Altitude Combo Drops, GPS Denied Navaid, Glide Modulation, T-11 Main Improvements, Above 25K Operations and Low Observables.

Towed Jumper Detection System (TJDS) formerly known as Automatic Universal Static Line (AUSL).

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) EW4 / <i>Crew Served Weapons Engineering Development</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
EW4: <i>Crew Served Weapons Engineering Development</i>	-	8.854	7.458	4.300	-	4.300	3.772	4.074	4.116	4.162	0.000	36.736
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

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

	FY 2022	FY 2023	FY 2024
Title: Design and Development	1.223	3.542	3.165
Description: Design and development of Crew Served Weapons FY 2023 Plans: Will conduct weapons characterization and development for light and medium machine gun technologies and design upgrades. Will validate specification requirements, improve system performance, and increase barrel longevity with the M855A1 5.56mm ammunition. Mounted Machinegun Optic (MMO) will continue MMO pre-planned product improvement (PPPI) R&D efforts for integration with High Explosive Dual Purpose (HEDP) airburst programmer ammo. Adaptive Lubricious Coatings will develop manufacturing technology to support production of super hydrophobic and other coatings in support of preserving barrel, operating group and bolt life of crew served weapons while improving weapon readiness. Continue to assess and evaluate current manufacturing process studies and assessments to adapt the coating technology into weapon Original Equipment Manufacturer manufacturing processes.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) EW4 / Crew Served Weapons Engineering Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Advanced Combat Optics will continue engineering evaluations, verification and validation of weapon optics performance requirements, covert target isolation and hand-off.				
New Weapons and Enabling Technology Evaluations and Assessments will continue to explore new technologies and perform initial evaluations and assessments required to facilitate rapid acquisition of increased capabilities where applicable.				
Create a 6.8mm M240 Barrel Assembly compatible with XM1186 ammunition.				
FY 2024 Plans: Will conduct weapons characterization and development for light and medium machine gun technologies and design upgrades. Will validate specification requirements, improve system performance, and increase barrel longevity with the M855A1 5.56mm ammunition.				
Development activities will include integration of the planned XM101 40mm High Explosive Dual Purpose - Air Burst (HEDP-AB) programmer on the remote weapon station. Will also include hardware and software upgrades to the remote weapon station to enable future capabilities, such as kinetic engagement of unmanned aerial systems, improved target identification range, integration of emerging sensors and weapons, and networked communication between multiple systems and/or platforms.				
Adaptive Lubricious Coatings will develop manufacturing technology to support production of super hydrophobic and other coatings in support of preserving barrel, operating group and bolt life of crew served weapons while improving weapon readiness. Will perform test and evaluation on coated M240 machine guns to quantify performance gains, as well as mature application of coatings into weapon Original Equipment Manufacturer manufacturing processes.				
New Weapons and Enabling Technology Evaluations and Assessments will continue to explore new technologies and perform initial evaluations and assessments required to facilitate rapid acquisition of increased capabilities where applicable.				
Create a 6.8mm M240 Barrel Assembly compatible with XM1186 ammunition.				
FY 2023 to FY 2024 Increase/Decrease Statement: With the completion of the MMO/HEDP Programmer effort in FY23, design and development requirements will be less in FY24.				
Title: Test and Evaluation		1.131	1.235	1.135
Description: Test and evaluation of Crew Served Weapons				
FY 2023 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) EW4 / Crew Served Weapons Engineering Development		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
New Weapons and Enabling Technology Evaluations and Assessments will continue to test and evaluate new technology that can lead to enhancements of current and legacy weapon systems or create new weapon systems, as well as advanced combat optics and improvement of small arms munitions.				
Evaluate suitability of the XM250 for the current M240-series medium machine gun role.				
FY 2024 Plans: Will conduct testing to support validation of the M249 SAW upgrades and barrel life specification requirements. Will also continue to test and evaluate technologies and improvements, to include the lightweight M2A1, remote weapon station enhancements, and other required testing.				
Evaluate suitability of the XM250 for the current M240-series medium machine gun role.				
FY 2023 to FY 2024 Increase/Decrease Statement: Test requirements in FY24 are planned to be less than FY23.				
Title: SBIR/STTR Transfer		-	0.181	-
Description: SBIR/STTR Transfer in accordance with Title 15 USC §638.				
FY 2023 Plans: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.				
FY 2023 to FY 2024 Increase/Decrease Statement: SBIR/STTR Transfer in accordance with Title 15 USC §638.				
Accomplishments/Planned Programs Subtotals		2.354	4.958	4.300
		FY 2022	FY 2023	
Congressional Add: Congressional Add: Cannon Life Extension Program		1.500	1.500	
FY 2022 Accomplishments: Will continue to advance and optimize the explosive bonding process of tantalum-tungsten alloy liners to create improved, longer life small and medium caliber barrels. Will continue to investigate alternative rifling methods (i.e. pressure form, roller form, waterjet) for tantalum lined barrels and develop manufacturing technologies that enable the affordable production and sustainment of future weapon systems.				
FY 2023 Plans: Will continue to advance and optimize the explosive bonding process of tantalum-tungsten alloy liners to create improved, longer life small and medium caliber barrels. Will continue to investigate alternative				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) EW4 / <i>Crew Served Weapons Engineering Development</i>

	FY 2022	FY 2023
rifling methods (i.e. pressure form, roller form, waterjet) for tantalum lined barrels and develop manufacturing technologies that enable the affordable production and sustainment of future weapon systems. Will manufacture fully lined .50 Caliber MG barrels utilizing explosive bonding process for production qualification testing		
Congressional Add: Congressional Add: Turret Gunner Survivability and Simulation Environment FY 2022 Accomplishments: Continue to develop smart, full-scale, virtual and augmented reality simulation environments for next-generation of Gunner protection kits that will significantly enhance the operational evaluation of turret designs in a secure, immersive, navigable, and interactive arena. Continue to develop and install simulation environments that will lead to advanced and affordable engineered solutions while accelerating the development lifecycle through reduced design iterations and physical prototyping.	5.000	-
Congressional Add: Congressional Add: CROWS - Acoustic Hailing Device FY 2023 Plans: Will modify the Genasys LRAD 450XL Acoustic Hailing Device (AHD) for compatibility with the Common Remotely Operated Weapon Station (CROWS) Technology Refresh (TR) platform. Integrate the AHD onto the CROWS TR platform for a technology demonstration and follow-on testing. Develop technical data package.	-	1.000
Congressional Adds Subtotals	6.500	2.500

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• S54: <i>Small Arms Improvement</i>	10.659	9.248	9.094	-	9.094	9.183	9.184	9.281	9.384	0.000	66.033
• FL8: <i>84mm MAAWS Ammunition</i>	5.893	-	0.000	-	0.000	-	-	-	-	0.000	5.893
• FM4: <i>Next Generation Squad Weapons</i>	13.103	17.616	16.141	-	16.141	11.058	11.072	11.191	11.316	0.000	91.497
• GZ1500: <i>Sniper Rifles Modifications</i>	0.080	-	0.000	-	0.000	-	0.019	0.019	0.019	Continuing	Continuing
• GB3000: <i>MK-19 Grenade Machine Gun MODS</i>	35.121	-	0.000	-	0.000	-	-	-	-	0.000	35.121
• GB4000: <i>M2 50 Cal Machine Gun MODS</i>	7.076	3.000	0.000	-	0.000	-	-	-	-	0.000	10.076

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) EW4 / Crew Served Weapons Engineering Development				
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• GL3200: Items Less Than \$5.0m (WOCV-WTCV)	13.826	2.138	1.148	-	1.148	1.055	2.237	2.241	2.243	Continuing	Continuing	
• G13000: M240 Medium Machine Gun (7.62mm)	11.017	10.500	0.425	-	0.425	0.426	0.313	0.314	-	Continuing	Continuing	
• G01506: Precision Sniper Rifle	9.505	6.436	5.248	-	5.248	6.049	6.109	6.115	6.121	Continuing	Continuing	
• G13101: MULTI-ROLE ANTI-ARMOR ANTI-PERSONNEL WEAPON SYSTEM	31.623	26.627	0.000	-	0.000	-	-	-	-	Continuing	Continuing	
Remarks												
In support of Small Arms Requirements, components or prototypes developed in BA 4 PE 0603827A Soldier Systems - Advanced Development Project S54 Small Arms Improvement transition to BA 5 PE 0604601A Infantry Support Weapons Project EW4 Crew Served Weapons Engineering Development to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon systems production or modification programs.												
D. Acquisition Strategy												
Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E), contracts, and/or Department of Defense Ordnance Technology Consortium (DOTC) and other OTA type hardware contracts. Test and evaluate systems that result in type classification, material release, and follow-on production contract awards.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) EW4 / Crew Served Weapons Engineering Development					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Weapons, : Picatinny Arsenal	1.766	0.400	Mar 2022	0.205	Mar 2023	0.205	Nov 2023	-		0.205	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Weapons, : Picatinny Arsenal	0.377	0.010	Mar 2022	0.020	Mar 2023	0.020	Mar 2023	-		0.020	Continuing	Continuing	Continuing
Subtotal			2.143	0.410		0.225		0.225		-		0.225	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fabrication	Various	Various : Multiple Contractors	11.523	0.189	Mar 2022	0.207	Mar 2023	0.300	Mar 2023	-		0.300	Continuing	Continuing	Continuing
Hardware Development	MIPR	Army Research Development Engineers Centers : Multiple	21.493	5.327	Mar 2022	4.495	Mar 2023	2.230	Mar 2023	-		2.230	Continuing	Continuing	Continuing
Subtotal			33.016	5.516		4.702		2.530		-		2.530	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	Army Research Development Engineering Centers : Multiple	9.974	1.867	Mar 2022	0.772	Mar 2023	0.259	Mar 2023	-		0.259	Continuing	Continuing	Continuing
Logistics	MIPR	Tank & Automotive Command (TACOM), : Warren	0.730	0.050	Mar 2022	0.080	Mar 2023	0.065	Mar 2023	-		0.065	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) EW4 / Crew Served Weapons Engineering Development					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Human Research and Engineering	MIPR	Army Research Laboratory, : Aberdeen Proving Ground	0.873	0.050	Mar 2022	0.125	Mar 2023	0.100	Mar 2023	-		0.100	Continuing	Continuing	Continuing
Subtotal			11.577	1.967		0.977		0.424		-		0.424	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Army Developmental Test Command, : Aberdeen Proving Ground	7.168	0.455	Mar 2022	0.717	Mar 2023	0.607	Mar 2023	-		0.607	Continuing	Continuing	Continuing
Operational Testing	MIPR	Army Test and Evaluation Command, : Aberdeen Proving Ground	3.659	0.456	Mar 2022	0.782	Mar 2023	0.407	Mar 2023	-		0.407	Continuing	Continuing	Continuing
Validation Testing	MIPR	Army Test and Evaluation Centers, : Multiple	0.808	0.050	Mar 2022	0.055	Mar 2023	0.107	Mar 2023	-		0.107	Continuing	Continuing	Continuing
Subtotal			11.635	0.961		1.554		1.121		-		1.121	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			58.371	8.854		7.458		4.300		-		4.300	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) EW4 / Crew Served Weapons Engineering Development	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
DESIGN AND DEVELOPMENT																												
M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon Syst																												
Mounted Machinegun Optic (MMO)																												
Design Upgrade validation for light and medium MGs																												
Enhancements for Remote Weapon Station																												
Weapon Enhancements for Improved Ammunition																												
Advanced Combat Optics																												
New Weapons and Enabling Technology Evaluations and Asse...																												
TEST AND EVALUATION																												
Test and Evaluation of new technology																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) EW4 / Crew Served Weapons Engineering Development	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DESIGN AND DEVELOPMENT	1	2020	4	2028
M3/M3E1 Multi-Role Anti-Armor Anti-Personnel Weapon System (MAAWS)	1	2017	4	2022
Mounted Machinegun Optic (MMO)	1	2020	4	2023
Design Upgrade validation for light and medium MGs	1	2024	4	2025
Enhancements for Remote Weapon Station	1	2024	4	2028
Weapon Enhancements for Improved Ammunition	1	2025	4	2028
Advanced Combat Optics	1	2023	4	2028
New Weapons and Enabling Technology Evaluations and Assessments	1	2023	4	2028
TEST AND EVALUATION	1	2020	4	2028
Test and Evaluation of new technology	1	2021	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FF2 / Small Arms Fire Control			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
FF2: Small Arms Fire Control	-	6.752	8.179	10.050	-	10.050	4.966	4.971	5.025	5.081	0.000	45.024
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The M157 Next Generation Squad Weapon - Fire Control (NGSW-FC) is an advanced fire control device to support the Next Generation Squad Weapons. NGSWFC increases the probability of hit and decreases the time to engage through a variable powered direct view optic with integrated range finder, ballistic calculator, and digital display capable of providing an adjusted aim point. The M157 NGSW-FC will utilize open architecture to deliver the initial increased core capability followed by increasing increments of capability/enhancements over time as technology matures and evolves

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

	FY 2022	FY 2023	FY 2024
Title: Design, Develop and Fabricate	3.189	5.281	6.790
Description: Includes contract awards for improvements of all Fire Control configurations, enhancements, and hand held devices. FY 2023 Plans: Complete integration and testing of mature capabilities with prototype design transitioning to production. Continue to conduct development and improvement efforts with the selected NGSW Fire Control. Efforts with the selected vendor will include: prototype development on target tracking/recognition, target data transfer, integrated advanced multispectral camera-based capabilities; increased Rapid Target Acquisition capability through networked integration with IVAS, ENGV-B, and FWS-I; aim error reduction technologies progressing toward Generation 4 Fire Control, including advanced stabilization and trigger interrupt solutions; continued optimization of system size, weight, and power, to reduce soldier load. FY 2024 Plans: Continue to conduct development and improvement efforts with the selected NGSW Fire Control. Efforts with Vortex Optics will include: prototype development on target tracking/recognition, target data transfer, integrated advanced multispectral camera-based capabilities; increased Rapid Target Acquisition capability through networked integration with IVAS, ENGV-B, and FWS-I; aim error reduction technologies progressing toward Generation 4 Fire Control, including advanced stabilization and trigger interrupt solutions; incorporation of Gradient Index (GRIN) lens technology to reduce weight, incorporation of specialized surface treatment to increase performance in cold temperatures and reduce overall system signature; and continued optimization of system size, weight, and power, to reduce soldier load. FY 2023 to FY 2024 Increase/Decrease Statement: Increase in cost due to procurement of prototype systems supporting signature and weight reduction technologies, and initiation of prototype activities for GEN 4 fire control systems.			
Title: Engineering Support	1.354	1.150	1.600

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>		Project (Number/Name) FF2 / <i>Small Arms Fire Control</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
Description: Government engineering support, providing oversight of design development and contractor performance. FY 2023 Plans: Will continue to provide government engineering support at laboratories and engineering centers; providing design, limited testing and oversight of development and contractor performance. FY 2024 Plans: Will continue to provide government engineering support at laboratories and engineering centers; providing design, limited testing and oversight of development and contractor performance. FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to government engineering requirements to support additional prototyping efforts for GEN 4 fire control systems.					
Title: Test and Evaluation Description: Government testing and evaluation of prototypes, articles and improvements. Includes Soldier Touch Point evaluations. FY 2023 Plans: Will continue Operational Testing to determine the Fire Control Systems' ability to accomplish its designed mission when used by representative personnel as well as to ensure the system can be placed and sustained satisfactorily in the field. Continuing to test and evaluate proposed improvements and capability upgrades. Prototypes will undergo technical testing and soldier touch point user evaluations. FY 2024 Plans: Will continue Operational Testing to test and evaluate proposed improvements, integration, cyber, natural environments, and capability upgrades resulting from iterative prototyping. Prototypes will undergo technical testing and soldier touch point user evaluations. FY 2023 to FY 2024 Increase/Decrease Statement: Increase in testing cost due to Operational Test activities in early FY24.			1.746	1.178	1.310
Title: Program Management Description: Program management office non-labor activities, to include travel and other indirect costs. FY 2023 Plans:			0.463	0.271	0.350

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) FF2 / <i>Small Arms Fire Control</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2022	FY 2023	FY 2024	
<p>Will continue to provide for administrative costs incurred by the Program Management office, to include travel, contractor service support, and other requirements to support the program.</p> <p>FY 2024 Plans: Will continue to provide for administrative costs incurred by the Program Management office, to include travel, contractor service support, and other requirements to support the program.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase due additional activities for supplies, travel, transportation and contract service requirements supporting GEN 4 fire control systems.</p>											
<p>Title: SBIR/STTR</p> <p>Description: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.</p> <p>FY 2023 Plans: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.</p>								-	0.299	-	
Accomplishments/Planned Programs Subtotals								6.752	8.179	10.050	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• S54: <i>Small Arms Improvement</i>	10.659	9.248	9.094	-	9.094	9.183	9.184	9.281	9.384	0.000	66.033
• G14513: <i>Next Generation</i>	72.595	111.387	186.759	-	186.759	269.903	175.313	175.513	160.536	Continuing	Continuing
<i>Squad Weapon - Fire Control</i>											
Remarks											
D. Acquisition Strategy											
<p>The NGSW-FC program is a Middle Tier Acquisition (MTA) program utilizing Rapid Prototyping authority under Section 804 of the FY 2016 National Defense Authorization Act (NDAA). A full and open competition selected two vendors for fixed amount Other Transaction Authority (OTA) awards to mature and finalize system designs and conduct test and evaluation. Following successful completion of the initial prototyping effort and approval of MTA - Rapid Fielding authority, the Government awarded a follow-on production Other Transaction Agreement (OTA) for the M157 NGSW-FC without further competition. RDT&E efforts will continue to develop new capabilities and transition them into production.</p>											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FF2 / Small Arms Fire Control					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Next Generation Squad Weapons- Fire Control OTA	C/FFP	Vortex Optics : Barneveld WI 53507-9412	-	3.189	Feb 2023	5.580	Feb 2023	6.790	Feb 2024	-		6.790	Continuing	Continuing	-
Subtotal			-	3.189		5.580		6.790		-		6.790	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	5.918	1.354	Feb 2022	1.150	Nov 2022	1.600	Nov 2023	-		1.600	Continuing	Continuing	-
Program Management	Allot	Project Manager Soldier Lethality (PMSL) : Picatinny Arsenal, NJ	0.492	0.463	Nov 2021	0.271	Nov 2022	0.350	Nov 2023	-		0.350	Continuing	Continuing	-
Subtotal			6.410	1.817		1.421		1.950		-		1.950	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	Aberdeen Testing Center : Aberdeen Proving Ground, MD	5.073	1.500	Jun 2022	1.100	Mar 2023	0.786		-		0.786	Continuing	Continuing	-
Test and Evaluation	MIPR	DEVCOM Data Analysis Center (DAC) : Aberdeen Proving Ground, MD	-	0.246	Jul 2022	0.078	Apr 2023	0.524	Jan 2024	-		0.524	0.000	0.848	-
Subtotal			5.073	1.746		1.178		1.310		-		1.310	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army											Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons					Project (Number/Name) FF2 / Small Arms Fire Control			
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.483	6.752		8.179		10.050		-		10.050	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) FF2 / Small Arms Fire Control	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Iterative Prototyping - Fire Control Enhancements																												
OTA Award- Vortex Optics	1																											
Contractor Design and Prototype Fabrication																												
Test and Evaluation - IR Excursion and Integration																												
Task Order- Improvements FY22				2																								
Limited User Testing (LUT)																												
Task Order - Improvements FY23					3																							
Task Order - Improvements FY24									4																			
Task Order - Improvements FY25													5															
Task Order - Improvements FY26																	6											
Task Order - Improvements FY27																					7							
Test and Evaluation - Improvements																												
Test and Evaluation CPVA																												

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

Date: March 2023

Appropriation/Budget Activity

2040 / 5

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

Project (Number/Name)

FF2 / Small Arms Fire Control

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) FF2 / <i>Small Arms Fire Control</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Rapid Prototyping - Fire Control	1	2019	4	2021
Prototype Opportunity Notice	3	2019	3	2019
Other Transaction Agreement (OTA) Award - Rapid Prototyping	3	2020	3	2020
L3 Harris - Contractor Design and Prototype Fabrication	3	2020	4	2021
Vortex Optics- Contractor Design and Prototype Fabrication	3	2020	4	2021
Prototype Testing and Evaluation	1	2021	3	2021
Production Decision - NGFC	4	2021	4	2021
Iterative Prototyping - Fire Control Enhancements	1	2021	4	2028
OTA Award- Vortex Optics	2	2022	2	2022
Contractor Design and Prototype Fabrication	1	2022	4	2028
Test and Evaluation - IR Excursion and Integration	3	2022	3	2022
Task Order- Improvements FY22	4	2022	4	2022
Limited User Testing (LUT)	4	2023	1	2024
Task Order - Improvements FY23	2	2023	2	2023
Task Order - Improvements FY24	2	2024	2	2024
Task Order - Improvements FY25	2	2025	2	2025
Task Order - Improvements FY26	2	2026	2	2026
Task Order - Improvements FY27	2	2027	2	2027
Test and Evaluation - Improvements	4	2022	4	2028
Test and Evaluation CPVA	1	2024	1	2024
Test and Evaluation Natural Environments	2	2024	4	2024
Test and Evaluation (IOT&E)	1	2025	1	2026
Test and Evaluation AA	1	2025	1	2025

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FL8 / 84mm MAAWS Ammunition			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
FL8: 84mm MAAWS Ammunition	-	5.893	-	-	-	-	-	-	-	-	0.000	5.893
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project FL8 84mm MAAWS Ammunition will test, evaluate and qualify up to seven types of 84 millimeters (mm) munitions for United States (U.S.) Army use with the M3/M3A1 Multi-Role Anti-Armor Anti-Personnel Weapon Systems (MAAWS). In addition to type classifying existing rounds, funds will also provide for the evaluation and qualification of the new High Explosive Programmable Airbursting Round. These rounds will provide improved lethality and a higher probability of hit in defilade positions for close combat forces against varying target sets and increased ranges in support of Infantry Squad formations. The M3/M3A1 was a HQDA G8 directed requirement scheduled for Type Classification 4th Quarter (Q) Fiscal Year (FY) 2022.

FY 2022 funding in the amount of \$6.639 million was used to complete type classification efforts for the new programmable round.

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

	FY 2022	FY 2023	FY 2024
Title: Engineering Support	1.847	-	-
Description: Government engineering support, providing oversight of design development and contractor performance.			
Title: Test and Evaluation	2.692	-	-
Description: Funds will support the following efforts:			
Title: Program Management	0.645	-	-
Description: Funds will support the following efforts:			
Title: TC-STD Efforts	0.709	-	-
Description: Type Classification efforts for Full Material Release of the programmable round.			
Accomplishments/Planned Programs Subtotals	5.893	-	-

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• EW4: <i>Crew Served Weapons Engineering Development</i>	8.854	7.458	4.300	-	4.300	3.772	4.074	4.116	4.162	0.000	36.736

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FL8 / 84mm MAAWS Ammunition			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• G13101: MULTI-ROLE ANTI-ARMOR ANTI- PERSONNEL WEAPON SYSTEM	31.623	26.627	0.000	-	0.000	-	-	-	-	Continuing	Continuing
• OMA - 137010000: RESET	0.707	0.735	0.000	-	0.000	0.728	0.735	-	-	0.000	2.905
Remarks											
D. Acquisition Strategy											
Used Other Transaction Authority (OTA) via the DoD Ordnance Technology Consortium (DOTC) to obtain commercially available 84mm ammunition for test and evaluation purposes.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FL8 / 84mm MAAWS Ammunition					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	PMSW : Picatinny Arsenal, NJ	0.702	0.645	Oct 2021	-		-		-		-	0.000	1.347	-
Subtotal			0.702	0.645		-		-		-		-	0.000	1.347	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	CCDC : Picatinny Arsenal, NJ	0.630	1.735	Mar 2022	-		-		-		-	0.000	2.365	-
TC-STD Efforts	MIPR	CCDC : Picatinny Arsenal, New Jersey	-	0.821	Apr 2022	-		-		-		-	0.000	0.821	-
Subtotal			0.630	2.556		-		-		-		-	0.000	3.186	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	MIPR	ATEC : Aberdeen, MD	1.282	2.692	Apr 2022	-		-		-		-	0.000	3.974	-
Subtotal			1.282	2.692		-		-		-		-	0.000	3.974	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2.614	5.893		-		-		-		-	0.000	8.507	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army																Date: March 2023												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) FL8 / 84mm MAAWS Ammunition										
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Developmental & Operational Testing																												
MS-C & TC-STD																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) FL8 / 84mm MAAWS Ammunition

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Materiel Development Decision	4	2019	4	2019
DOTC Contract Award	1	2020	1	2020
Critical Design Review	2	2020	2	2020
Prototype Delivery	1	2021	1	2021
Developmental & Operational Testing	4	2020	3	2022
MS-C & TC-STD	3	2022	3	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FM4 / Next Generation Squad Weapons			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
FM4: Next Generation Squad Weapons	-	13.103	17.616	16.141	-	16.141	11.058	11.072	11.191	11.316	0.000	91.497
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Next Generation Squad Weapons (NGSW) program will develop weapon systems and common 6.8mm cartridge to maintain overmatch and meet future force warfighter needs.

The M7 Rifle is the planned replacement for the M4A1 Carbine in the close combat force and select support units. The M7 Rifle will provide capability improvements in accuracy, range, and lethality.

The M250 Automatic Rifle is the planned replacement for the M249 Squad Automatic Weapon (SAW) in the close combat force and select support units. The M250 Rifle combines the firepower and range of a machine gun with the precision and ergonomics of a carbine, yielding capability improvements in accuracy, range, and lethality.

The M7 Rifle and M250 Automatic Rifle will use a common 6.8mm cartridge in a variety of ammunition types including but not limited to general purpose (GP), special purpose (SP), reduced range, and blank.

Development efforts for additional NGSW variants may follow to replace other legacy systems or provide additional enhanced capabilities.

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

	FY 2022	FY 2023	FY 2024
Title: Contractor Design and Improvements	9.048	6.964	7.750
Description: Contractor design, development and improvements.			
FY 2023 Plans: Will continue prototyping with the selected Next Generation Squad Weapon rifle and automatic rifle. Efforts with the selected vendor will include: continued improvements in the reliability of the weapons, as well as system reliability in extreme environmental conditions; improved dispersion and accuracy, including changes to the weapon designs to integrate modifications to the 6.8mm projectile and cartridge design and reduce weapon recoil; continue rapid prototyping and development of powered rail and intra-Soldier wireless data transfer solutions in order to improve the interface between the weapons and the Next Generation Squad Weapon Fire Control, as well as other optics and enablers; enhanced barrel technologies and improved barrel manufacturing techniques. Will purchase additional weapons to support integration, developmental and operational testing, as well as user evaluations.			
FY 2024 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) FM4 / Next Generation Squad Weapons		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
<p>Will continue improvements on the NGSW weapons to enhance system performance. Efforts will include: weapon system reliability and dispersion; reduction in recoil forces and total system weight, integration of new 6.8mm ammunition types and projectile development; continued development and integration of the powered rail, battery, and intra-Soldier wireless data transfer solutions to improve the interface with the Next Generation Squad Weapons Fire Control, as well as other optics, enablers and Soldier equipment. Will purchase additional test articles to support integration, testing and user evaluations.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase in planned funding due to requirements for improvements and integration, as well as increased requirements for testing efforts.</p>					
<p>Title: Engineering Support</p> <p>Description: Government engineering support, providing oversight of design, development and contractor performance.</p> <p>FY 2023 Plans: Will continue government engineering support to provide design, limited testing and oversight of development and contractor performance for capability enhancement and design improvements.</p> <p>FY 2024 Plans: Will continue government-engineering support to provide design, limited testing, and oversight of development and contractor performance for capability enhancements and design improvements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to requirements for government engineering efforts to support improvements, integration, and testing.</p>			1.486	1.131	1.300
<p>Title: Test and Evaluation</p> <p>Description: Testing and evaluation at government ranges and facilities.</p> <p>FY 2023 Plans: Will conduct Production Qualification Testing (PQT), maintainability testing, integration testing with other enablers, Limited User Testing (LUT) and Limited Lethality Assessment (LLA) of production representative weapons. Will also conduct testing at government ranges and facilities of vendor hardware.</p> <p>FY 2024 Plans: Will conduct Natural Environment Testing in Arctic, Hot and Tropic Environments, will begin preparation and support of Live Fire Test and Evaluations, will begin preparation and coordination for Initial Operational Test and Evaluation of production</p>			1.550	3.543	6.571

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>		Project (Number/Name) FM4 / <i>Next Generation Squad Weapons</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
representative weapons, and other operational and technical testing requirements. Will continue testing vendor hardware at Government facilities to assess potential system enhancements, integration with other enablers and continue user evaluations.					
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase due to operational testing activities planned for FY24.					
Title: Program Management			1.019	0.518	0.520
Description: Program management office and oversight of government and contractor efforts.					
FY 2023 Plans: Program management office will continue to provide oversight of contract actions, engineering support and test activities.					
FY 2024 Plans: Program management office will continue to provide oversight of contract actions, engineering support and test activities.					
FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase for additional supplies, travel, transportation and contractor service costs.					
Title: SBIR/STTR			-	0.460	-
Description: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.					
FY 2023 Plans: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.					
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638.					
Accomplishments/Planned Programs Subtotals			13.103	12.616	16.141
			FY 2022	FY 2023	
Congressional Add: NGSW Commercial Magazine Testing			-	5.000	
FY 2023 Plans: Purchase of commercially available magazines, weapons, ammunition, and required spare parts to conduct test and evaluation for use with the M7 Rifle. The magazines will be evaluated for system level performance and compatibility using the current magazine as a baseline to achieve system requirements outlined in the NGSW Tiered Capabilities Matrix.					
Congressional Adds Subtotals			-	5.000	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) FM4 / <i>Next Generation Squad Weapons</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	
			Base	OCO	Total					Complete	Total Cost
• S54: <i>Small Arms Improvement</i>	10.659	9.248	9.094	-	9.094	9.183	9.184	9.281	9.384	0.000	66.033
• EW4: <i>Crew Served Weapons Engineering Development</i>	8.854	7.458	4.300	-	4.300	3.772	4.074	4.116	4.162	0.000	36.736
• S63: <i>Individual Weapons Engineering Development</i>	3.518	3.956	3.549	-	3.549	3.510	3.791	3.830	3.873	0.000	26.027
• FL4: <i>Small Caliber Ammo for Next Gen Squad Weapons</i>	27.336	25.558	11.809	-	11.809	11.931	11.945	12.073	12.208	0.000	112.860
• G14511: <i>Next Generation Squad Weapon-Automatic Rifle</i>	3.630	10.161	18.665	-	18.665	23.674	14.156	16.189	14.185	Continuing	Continuing
• G14512: <i>NEXT GENERATION SQUAD WEAPON-RIFLE</i>	20.862	45.075	87.426	-	87.426	103.505	61.923	65.020	62.054	Continuing	Continuing
• E06001: <i>NEXT GENERATION SQUAD WEAPON AMMUNITION</i>	71.234	96.496	191.244	-	191.244	205.478	335.659	335.650	335.650	0.000	1,571.411

Remarks

D. Acquisition Strategy

The NGSW program is a Middle Tier Acquisition (MTA) program utilizing Rapid Prototyping authority under Section 804 of the FY 2016 National Defense Authorization Act (NDAA). A full and open competition selected three vendors for fixed amount Other Transaction Authority (OTA) awards to mature and finalize system designs and conduct test and evaluation. Following successful completion of the prototyping effort, and approval of Rapid Fielding Authority, the Government awarded a follow-on contract to SIG Sauer Inc. for production and continued improvements of the M7 Rifle, the M250 Automatic Rifle, and 6.8mm common ammunition.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FM4 / Next Generation Squad Weapons					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Lethality (PMSL) : Picatinny Arsenal, NJ	1.555	1.019	Oct 2021	0.518	Oct 2022	0.520	Oct 2023	-		0.520	0.000	3.612	-
Subtotal			1.555	1.019		0.518		0.520		-		0.520	0.000	3.612	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Reduced Range Cartridge Development and Integration	C/FFP	SIG Sauer Inc. : Newington, NH	7.799	-		-		-		-		-	0.000	7.799	-
Design Improvements	C/FFP	SIG Sauer, Inc. : Newington, NH	-	9.048	Apr 2022	7.424	Jun 2023	7.750	Feb 2024	-		7.750	0.000	24.222	-
Commercial Magazine Testing (Congressional Add)	Allot	PM Soldier Lethality : Picatinny Arsenal, NJ	-	-		5.000	Mar 2023	-		-		-	0.000	5.000	-
Subtotal			7.799	9.048		12.424		7.750		-		7.750	0.000	37.021	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	MIPR	DEVCOM Armaments Center : Picatinny Arsenal, NJ	8.594	1.486	Feb 2022	1.131	Nov 2022	1.300	Nov 2023	-		1.300	0.000	12.511	-
Subtotal			8.594	1.486		1.131		1.300		-		1.300	0.000	12.511	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) FM4 / Next Generation Squad Weapons					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, ND	7.840	1.550	Jun 2022	3.543	Jan 2023	6.571	Jan 2024	-		6.571	0.000	19.504	-
Subtotal			7.840	1.550		3.543		6.571		-		6.571	0.000	19.504	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			25.788	13.103		17.616		16.141		-		16.141	0.000	72.648	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) FM4 / Next Generation Squad Weapons

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
SIG Sauer - Production Down-Selection			1																									
Production Qualification Testing (PQT)																												
Limited Lethality Assessments (LLA)																												
Test and Evaluation - Limited User Testing (LUT)																												
Natural Environmental Tests																												
Test and Evaluation - LFT&E																												
Test and Evaluation - IOT&E																												
Product Improvements																												
Task Order - Iterative Prototyping			2																									
Task Order and Product Improvements																												
Task Order - Product Improvement FY23								3																				
Task Order - Product Improvement FY24												4																
Task Order - Product Improvement FY25																5												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army																Date: March 2023												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) FM4 / Next Generation Squad Weapons										
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Task Order - Product Improvement FY26																	6				7				8			
Task Order - Product Improvement FY27																												
Task Order - Product Improvement FY28																												
Test and Evaluation - Product Improvements																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) FM4 / <i>Next Generation Squad Weapons</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Rapid Prototyping - Rifle / AR / Common Cartridge	4	2019	4	2021
Prototype Opportunity Notice	2	2019	2	2019
Other Transaction Agreements (OTA) Award - Rapid Prototyping	4	2019	4	2019
Sig Sauer Inc.- Contractor Design and Prototype Fabrication	4	2019	4	2021
General Dynamics- OTS Inc- Contractor Design and Prototype Fabrication	4	2019	4	2021
AAJ CorpTextron Systems - Contractor Design and Prototype Fabrication	4	2019	4	2021
SIG Sauer - Production Down-Selection	3	2022	3	2022
Prototype Testing (Phase I) - Test and Evaluation	3	2020	4	2020
Prototype Testing (Phase II) - Test and Evaluation	2	2021	4	2021
Production Qualification Testing (PQT)	3	2023	4	2023
Limited Lethality Assessments (LLA)	3	2023	4	2023
Test and Evaluation - Limited User Testing (LUT)	4	2023	1	2024
Natural Environmental Tests	2	2024	4	2024
Test and Evaluation - LFT&E	3	2024	1	2025
Test and Evaluation - IOT&E	1	2025	1	2025
Product Improvements	1	2022	4	2025
Task Order - Iterative Prototyping	3	2022	3	2022
Task Order and Product Improvements	3	2022	4	2028
Task Order - Product Improvement FY23	3	2023	3	2023
Task Order - Product Improvement FY24	3	2024	3	2024
Task Order - Product Improvement FY25	2	2025	2	2025
Task Order - Product Improvement FY26	2	2026	2	2026
Task Order - Product Improvement FY27	2	2027	2	2027

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) FM4 / Next Generation Squad Weapons	
	Start		End	
Events	Quarter	Year	Quarter	Year
Task Order - Product Improvement FY28	2	2028	2	2028
Test and Evaluation - Product Improvements	3	2022	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S58 / Soldier Enhancement Program			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
S58: Soldier Enhancement Program	-	13.522	10.182	4.897	-	4.897	5.094	5.101	5.105	5.162	0.000	49.063
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Soldier Enhancement Program (SEP) was established by the National Defense Authorization Act for Fiscal Years 1990 to provide a rapid approach to evaluate Commercial off-the-shelf (COTS), Government off-the shelf (GOTS), or Non-Developmental Items (NDI) capabilities to increase the combat effectiveness of the Soldier. Using a "buy, try and decide" methodology, SEP provides significant savings and acceleration in the evaluation of leading edge Soldier capabilities in order to provide combat overmatch. The SEP tri-chair leadership consists of the Director, Maneuver Capabilities Development and Integration Directorate (MCDID), The Infantry Commandant, and Program Executive Office (PEO) Soldier. Proposals are submitted by Soldiers and industry at any time, are reviewed monthly and new starts are approved semi-annually by the SEP Council of Colonels (CoC). Approved proposals are validated by the Director, Maneuver Capability Development and Integration Directorate (MCDID). Validated SEP initiatives are procured and evaluated by Soldiers for feasibility and suitability. Based on the evaluation findings, the SEP CoC provides one or more of the following courses of action: (1) inform deliberate or urgent/emerging requirements generation, (2) initiate a new Program of Record (POR) or improve an existing POR, (3) provide a national stock number (NSN) for unit procurement or (4) the item did not meet objectives and no further action is necessary. The funding supports SEP evaluation preparation, conducting evaluations, and documenting results. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy and is a priority of the Army Futures Command (AFC).

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

	FY 2022	FY 2023	FY 2024
Title: Evaluate COTS/GOTS/NDI equipment that have the potential to enhance Soldier combat effectiveness.	3.522	4.992	4.897
FY 2023 Plans: Funding will support evaluation of approximately 15 SEP Council of Colonels approved and validated initiatives to enhance Soldier combat effectiveness. Product evaluations will include safety testing, collection and analysis of Soldier feedback/results and documentation of results.			
FY 2024 Plans: Funding will support evaluation of 15 SEP Council of Colonels approved and validated initiatives. Evaluations will include safety testing, collection, and analysis of user feedback and documentation of results.			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreases between FY23 and FY24 due to anticipated changes in requirements.			
Title: SBIR/STTR Transfer	-	0.190	-
FY 2023 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army							Date: March 2023				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons			Project (Number/Name) S58 / Soldier Enhancement Program				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2022	FY 2023	FY 2024		
Funding transferred in accordance with Title 15 USC §638											
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 (Current year) and FY 2024 (Budget Year One) values differ due to overall funding differences. Funding transferred in accordance with Title 15 USC §638											
Accomplishments/Planned Programs Subtotals							3.522	5.182	4.897		
							FY 2022	FY 2023			
Congressional Add: Program increase - soldier enhancement program FY 2022 Accomplishments: Funding will support evaluation of SEP Council of Colonels approved and validated initiatives. Evaluations will include safety testing, collection, and analysis of user feedback and documentation of results. FY 2023 Plans: \$5,000,000 was a Congressional Add for FY23 and will support evaluation of approximately 15 SEP Council of Colonels approved and validated initiatives to enhance Soldier combat effectiveness. Product evaluations will include safety testing, collection and analysis of Soldier feedback/results and documentation of results.							10.000	5.000			
Congressional Adds Subtotals							10.000	5.000			
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MA6800: <i>Soldier Enhancement</i>	1.286	-	0.000	-	0.000	-	-	-	-	0.000	1.286
Remarks											
Other											
D. Acquisition Strategy											
SEP focuses on COTS/GOTS/NDI initiatives submitted by Soldiers and industry. SEP proposals are reviewed monthly and approved semi-annually. The funding supports procuring SEP COTS/GOTS/NDI items in quantities sufficient for Soldier evaluation, conducting product evaluations which includes safety testing, data collection, analysis of Soldier feedback/results and documenting results. Product Managers responsible for the portfolio in which the SEP initiative falls into develops the procurement and evaluation strategy and procures the items using a variety of means from Government purchase card to full contracts. Soldier's evaluations are performed by various means from Battle Lab surveys to full scale Army Test and Evaluation testing depending on the item.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army Date: March 2023

Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S58 / Soldier Enhancement Program
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Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	MIPR	PEO SOLDIER : Ft. Belvoir, VA	15.186	0.370		0.373	Aug 2023	0.373	Aug 2024	-		0.373	0.000	16.302	-
Subtotal			15.186	0.370		0.373		0.373		-		0.373	0.000	16.302	N/A

Remarks

Systems Engineering and Program Management includes engineering support, conducting technical evaluations, market research and program reviews.

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SEP Evaluations	MIPR	Various : Various	66.172	13.152	May 2022	9.809	May 2023	4.524	May 2024	-		4.524	0.000	93.657	-
Subtotal			66.172	13.152		9.809		4.524		-		4.524	0.000	93.657	N/A

Remarks

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

			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			81.358	13.522		10.182		4.897		-		4.897	0.000	109.959	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S58 / Soldier Enhancement Program	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Evaluate Initiatives 3QFY21-1QFY22	[Bar]																											
Evaluate Approved Initiatives	[Bar]																											
SEP Council of Colonels approve/prioritization process F...	1																											
Approval/prioritization of SEP Proposals																												
Evaluate Initiatives 1-3QFY22	[Bar]																											
Evaluate Approved Initiatives	[Bar]																											
SEP Council of Colonels approve/prioritization process F...		2																										
Approval/prioritization of SEP Proposals																												
Evaluate Initiatives 3QFY22-1QFY23					[Bar]																							
Evaluate Approved Initiatives					[Bar]																							
SEP Council of Colonels approve/prioritization process F...			3																									
Approval/prioritization of SEP Proposals																												
Evaluate Initiatives 1-3QFY23					[Bar]																							
Evaluate Approved Initiatives					[Bar]																							
SEP Council of Colonels approve/prioritization process F...				4																								
Approval/prioritization of SEP Proposals																												
Evaluate Initiatives 3QFY23-1QFY24									[Bar]																			
Evaluate Approved Initiatives									[Bar]																			
SEP Council of Colonels approve/prioritization process F...						5																						
Approval/prioritization of SEP Proposals																												
Evaluate Initiatives 1-3QFY24									[Bar]																			
Evaluate Approved Initiatives									[Bar]																			
SEP Council of Colonels approve/prioritization process F...							6																					
Approval/prioritization of SEP Proposal																												
Evaluate Initiatives 3QFY24-1QFY25									[Bar]																			
Evaluate Approved Initiatives									[Bar]																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S58 / Soldier Enhancement Program	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
SEP Council of Colonels approve/prioritization process F...																												
Evaluate Initiatives 2QFY25-3QFY25																												
SEP Council of Colonels approve/prioritization process F...																												
Evaluate Initiatives 4QFY25-1QFY26																												
SEP Council of Colonels approve/prioritization process F...																												
Evaluate Initiatives 2QFY26-3QFY26																												
SEP Council of Colonels approve/prioritization process F...																												
Evaluate Initiatives 4QFY26-1QFY27																												
SEP Council of Colonels approve/prioritization process F...																												
Evaluate Initiatives 2QFY27-3QFY27																												
SEP Council of Colonels approve/prioritization process F...																												
Evaluate Initiatives 4QFY27-1QFY28																												
SEP Council of Colonels approve/prioritization process F...																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army																				Date: March 2023												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons										Project (Number/Name) S58 / Soldier Enhancement Program												
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
	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				
Evaluate Initiatives 2QFY28-3QFY28																													[REDACTED] Evaluate Approved In			
SEP Council of Colonels approve/prioritization process F...																													[REDACTED] Approva			
Evaluate Initiatives 4QFY28-1QFY29																													[REDACTED] Evaluat			

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S58 / <i>Soldier Enhancement Program</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SEP Council of Colonels approve/prioritization process FY21.2	2	2021	2	2021
Evaluate Initiatives 2-4QFY21	2	2021	4	2021
SEP Council of Colonels approve/prioritization process FY21.3	3	2021	3	2021
Evaluate Initiatives 3QFY21-1QFY22	3	2021	1	2023
SEP Council of Colonels approve/prioritization process FY22.1	1	2022	1	2022
Evaluate Initiatives 1-3QFY22	1	2022	3	2022
SEP Council of Colonels approve/prioritization process FY22.2	3	2022	3	2022
Evaluate Initiatives 3QFY22-1QFY23	3	2022	1	2023
SEP Council of Colonels approve/prioritization process FY23.1	1	2023	1	2023
Evaluate Initiatives 1-3QFY23	1	2023	3	2023
SEP Council of Colonels approve/prioritization process FY23.2	3	2023	3	2023
Evaluate Initiatives 3QFY23-1QFY24	3	2023	1	2024
SEP Council of Colonels approve/prioritization process FY24.1	1	2024	1	2024
Evaluate Initiatives 1-3QFY24	1	2024	3	2024
SEP Council of Colonels approve/prioritization process FY24.2	3	2024	3	2024
Evaluate Initiatives 3QFY24-1QFY25	3	2024	1	2025
SEP Council of Colonels approve/prioritization process FY25.1	1	2025	1	2025
Evaluate Initiatives 2QFY25-3QFY25	1	2025	3	2025
SEP Council of Colonels approve/prioritization process FY25.2	3	2025	3	2025
Evaluate Initiatives 4QFY25-1QFY26	3	2025	1	2026
SEP Council of Colonels approve/prioritization process FY26.1	1	2026	1	2026
Evaluate Initiatives 2QFY26-3QFY26	1	2026	3	2026
SEP Council of Colonels approve/prioritization process FY26.2	3	2026	3	2026

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S58 / <i>Soldier Enhancement Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Evaluate Initiatives 4QFY26-1QFY27	3	2026	1	2027
SEP Council of Colonels approve/prioritization process FY27.1	1	2027	1	2027
Evaluate Initiatives 2QFY27-3QFY27	1	2027	3	2027
SEP Council of Colonels approve/prioritization process FY27.2	3	2027	3	2027
Evaluate Initiatives 4QFY27-1QFY28	3	2027	1	2028
SEP Council of Colonels approve/prioritization process FY28.1	1	2028	1	2028
Evaluate Initiatives 2QFY28-3QFY28	1	2028	3	2028
SEP Council of Colonels approve/prioritization process FY28.2	3	2028	3	2028
Evaluate Initiatives 4QFY28-1QFY29	3	2028	1	2029

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S60 / Clothing & Equipment			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
S60: Clothing & Equipment	-	5.196	6.313	3.427	-	3.427	6.364	8.879	8.974	9.074	0.000	48.227
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding in this effort supports the Army's Cross Functional Teams (CFT) initiatives. It supports engineering and manufacturing development tasks related to clothing and individual equipment with the goal of enhancing the lethality, survivability, and mobility as well as the quality of life of the Warfighter. It funds formal Developmental Testing/Operational Testing (DT/OT) of preproduction and prototypes leveraging technological advancements. Those advancements focus on materials, fabrication techniques, moisture management, flame resistance, vector protection, extreme environmental protection and camouflage. This effort also funds evaluations of Organizational Clothing and Individual Equipment (OCIE) appropriate for use in extreme or multi-climate environments focusing on arctic and jungle. Funding to support test and evaluation of both tactical and non-tactical clothing and individual equipment development and enhancement resulting in the Soldier as an integrated system. This effort will transition capabilities from our Science and Technology partners to increase performance and safety of Warfighter clothing and equipment. PM SCIE will continue to support multi-service commonality initiatives through technology that enables combat operations in a gender integrated fighting force.

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

	FY 2022	FY 2023	FY 2024
Title: Soldier Uniforms and Clothing	2.529	3.253	1.723
Description: Evaluate superior and sustainable integrated clothing and footwear for the Soldier in a rapidly changing global environment.			
FY 2023 Plans: Perform technical testing, user evaluations, and qualify new fabrics with improved vector protections. Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Evaluation of Flame Resistant (FR) printing inks and other technologies to greatly reduce the cost of FR clothing. Long term evaluation study for Army Green Service Uniform and user evaluation for Maternity Army Green Service Uniform in conjunction with Defense Logistics Agency Maternity Pilot Program. Continued development of Improved Combat Vehicle Crewman Uniform to include female and male variant patterns. Annual evaluation of domestic material solution submissions to support the Athletic Footwear program providing Soldiers a greater variety of athletic footwear from which to choose. Continue Clothing Bag Upgrades and Evaluations as directed by the Army Uniform Board. Conduct ensemble level evaluations of novel materials and fabrics in clothing, footwear and equipment in all climates.			
FY 2024 Plans: Perform technical testing, user evaluations, and qualify new fabrics with vector protection and FR protection for combat clothing and Cold Weather/Extreme Cold Weather Clothing. Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Long term evaluation study for Army Green Service Uniform. Continued development of Improved Combat Vehicle Crewman Uniform to			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023			
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S60 / Clothing & Equipment		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024	
include female and male variant patterns. Annual evaluation of domestic material solution submissions to support the Athletic Footwear program. Evaluate domestic materiel solution to support extreme cold weather footwear capability gap. Continue Clothing Bag Upgrades and Evaluations as directed by the Army Uniform Board. Procure test assets and perform DT/OT on uniforms produced with improved Identification Friend or Foe (IFF) capability, microwave protective materials to defeat emerging threats and on uniforms designed to mitigate Ground Surveillance Radar (GSR) detection. Conduct ensemble level evaluations of novel materials and fabrics in clothing, footwear and equipment in all climates. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease in funding from FY23 to FY24 due to anticipated transitions to sustainment.					
Title: Individual Equipment Description: Develop and provide superior and sustainable integrated individual equipment for the Soldier in a rapidly changing global environment. FY 2023 Plans: Explore solutions for Water Treatment Devices for Toxic Industrial Chemicals and Toxic Industrial Materials (TICs/TIMs) and desalinization. Continue to develop the Welding Individual Protection System (WIPS) ensemble to provide welders with Occupational Safety Health Act (OSHA) compliant Personal Protective Equipment (PPE).Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Procure and test quick reaction camouflage to reduce thermal signature and to enhance individual equipment camouflage. Procure test assets and perform DT/OT on multi-purpose and specialized load carriage equipment. FY 2024 Plans: Procure test assets and perform Developmental Tests/Operational Tests (DT/OT) as required for Water Treatment Devices for desalinization. Continue to develop the Welding Individual Protection System (WIPS) ensemble to provide welders with Occupational Safety Health Act (OSHA) compliant Personal Protective Equipment (PPE). Supports opportunities for commonality in OCIE across all Services (Army, Navy, Air Force, Marines and Coast Guard) and further supports the domestic Clothing and Textile Industrial Base. Procure and test quick reaction camouflage to reduce thermal signature and to enhance individual equipment camouflage. Procure test assets and perform DT/OT on multi-purpose and specialized load carriage equipment, sleeping mats, and individual shelters. Product office will be conducting testing on items appropriate for use in extreme or multi-climate environments focusing on arctic mobility equipment. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease in funding from FY23 to FY24 due to changes in anticipated requirements.		2.470	2.830	1.704	
Title: SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC 638		0.197	0.230	-	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S60 / Clothing & Equipment			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2022	FY 2023	FY 2024	
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638											
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638											
Accomplishments/Planned Programs Subtotals								5.196	6.313	3.427	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• S53: Clothing And Equipment	6.431	3.078	4.700	-	4.700	8.150	8.790	8.884	8.982	Continuing	Continuing
• OMA - CFF OMA 121018: SCIE OMA 121018	-	-	-	-	-	-	-	-	-		
Remarks											
D. Acquisition Strategy											
Acquisition strategies for these programs vary in methods, and range from: 1) Materiel Change Proposals that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of complexity and testing required.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army													Date: March 2023		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S60 / Clothing & Equipment					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	PM SCIE : Ft Belvoir	12.703	0.759		0.598		0.377		-		0.377	Continuing	Continuing	Continuing
Subtotal			12.703	0.759		0.598		0.377		-		0.377	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	Various	NSRDEC : Natick, MA	17.924	0.623		0.845		0.496		-		0.496	Continuing	Continuing	Continuing
Development Contracts	Various	Various : Various	56.541	1.881		1.574		0.891		-		0.891	Continuing	Continuing	Continuing
Subtotal			74.465	2.504		2.419		1.387		-		1.387	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Office Support Costs	Various	Natick, MA : Natick, MA	19.416	0.489		1.448		0.787		-		0.787	Continuing	Continuing	Continuing
Subtotal			19.416	0.489		1.448		0.787		-		0.787	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Various : Various	34.938	1.444		1.848		0.876		-		0.876	Continuing	Continuing	Continuing
Subtotal			34.938	1.444		1.848		0.876		-		0.876	Continuing	Continuing	N/A
			Prior Years	FY 2022	FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			141.522	5.196		6.313		3.427		-		3.427	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army							Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons		Project (Number/Name) S60 / Clothing & Equipment			
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Remarks									

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army										Date: March 2023			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)			
2040 / 5					PE 0604601A / Infantry Support Weapons					S60 / Clothing & Equipment			

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
UNIFORM CLOTHING & FOOTWEAR																												
Enhanced Uniform Upgrades																												
Clothing Bag Upgrades and Evaluations																												
Spectral Mitigation																												
Cold Weather/Extreme Cold Weather Clothing and Footwear ...																												
Athletic Footwear																												
INDIVIDUAL EQUIPMENT																												
Improved Hydration																												
Evaluation of Cold Weather Mobility items																												
Welding Individual Protection System (WIPS)																												
Individual Shelter																												
Sleeping Mats																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S60 / Clothing & Equipment	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
UNIFORM CLOTHING & FOOTWEAR	1	2011	4	2028
Enhanced Uniform Upgrades	3	2009	4	2028
Clothing Bag Upgrades and Evaluations	1	2013	4	2028
Spectral Mitigation	1	2020	4	2029
Cold Weather/Extreme Cold Weather Clothing and Footwear Improvement	1	2023	4	2026
Athletic Footwear	1	2021	4	2024
INDIVIDUAL EQUIPMENT	2	2008	4	2027
Improved Hydration	2	2021	4	2029
Evaluation of Cold Weather Mobility items	1	2024	4	2025
Welding Individual Protection System (WIPS)	1	2022	4	2025
Individual Shelter	1	2023	4	2024
Sleeping Mats	1	2023	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S61 / Acis Engineering Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
S61: Acis Engineering Development	-	2.418	9.927	3.788	-	3.788	0.466	0.466	0.471	0.477	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project conducts development, integration, qualification and upgrade activities in support of the Air Soldier System (Air SS) and Aviation operational needs codified in the COE requirements document. The Air SS is Army aircrew survival and mission equipment that improves safety, survivability, and mission performance. The Air SS addresses capability gaps identified during combat operations as well as emerging challenges to Army aircrew safety and performance caused by the bulk and weight of body-worn equipment, limited Situational Awareness (SA), lack of protection from emerging threats, and a lack functionally integrated mission electronics and protective/survival equipment. Air SS delivers improved aircrew survivability, SA, interoperability, and mission performance.

The Air SS provides enhanced mission planning and execution through the introduction of upgraded hardware and software components allowing for improved connectivity between aircrew members, other aircraft, and ground assets. Capabilities further improve terrain mapping, threat, and obstacle avoidance information through improved heads-up display (HUD) technologies which also align to needs of the Future Long Range Assault Aircraft (FLRAA) and Future Attack and Reconnaissance Aircraft (FARA). Additional effort is focused on a digital replacement for paper-based DoD Flight Information Publications, and the Aircrew Combat Equipment, a replacement for the legacy survival vest with integral Modular Scalable Vest body armor. These enhanced capabilities support both the enduring fleet and future fleet.

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

	FY 2022	FY 2023	FY 2024
Title: Air Soldier System	2.418	2.338	3.788
<p>Description: This project conducts development, integration and qualification activities in support of the Air Soldier System (Air SS) program. The Air SS addresses capability gaps identified during previous combat operations. This includes crew station compatibility challenges caused by the burden of excessive equipment bulk and weight; impacts to safety resulting from excessive pilot workload and limited aircrew situational awareness (SA); and inadequate aircrew protection from environmental extremes, hostile threats, and induced threats resulting from aircraft mishaps or crashes.</p> <p>FY 2023 Plans: Specific activities planned for FY 23 will focus on the transition of several Small Business Innovative Research (SBIR) initiatives associated with the Air SS integrated soldier power and personal area network capabilities. These activities include, but are not limited to an obsolescence replacement for the Encrypted Aircraft Wireless Intercom System (EAWIS) leveraging Voice over Internet Protocol (VoIP) or ultra-wideband (UWB) technologies, high density/lightweight power storage devices, miniaturization and integration of the personal helicopter oxygen delivery system, and expansion of universal soldier power to head (or helmet) worn devices reducing head borne weight and further reducing the need for device specific batteries.</p> <p>FY 2024 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S61 / Acis Engineering Development			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024
The Program will focus on supporting Army aircrew Nett Warrior-Aviation hardware and software changes and the integration and test of deferred Nett Warrior-Aviation Common Operating Environment requirements. Continue support for the execution of Pre-Planned Product Improvements (P3I) capability demonstrations in conjunction with upcoming field training exercises and key Army demonstration and experimentation events focused on Air Soldier System capabilities intended to enhance Air Ground Operations in support of Multi-Domain Operations initiatives. FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase from FY 2023 to FY 2024 due to anticipated changes in requirements.											
Title: SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC 638 FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638									-	0.089	-
Title: Congressional Add for TACPAN FY 2023 Plans: This effort will further develop Soldier worn power distribution and component management for both air and ground operations. This effort will further mature TacPAN technology to integrate into combat uniforms, body armor and Aviation Soldier ensemble, along with organizational clothing & individual equipment (OCIE). The system and subsystem prototype demonstrators are TacPAN integrated body armor, heated apparel, data and power distribution, and aviation specific subsystem Soldier touch points, flight safety, and developmental testing. FY 2023 to FY 2024 Increase/Decrease Statement: Program received FY23 congressional add for TACPAN.									-	7.500	-
Accomplishments/Planned Programs Subtotals									2.418	9.927	3.788
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• AZ3110: Aircrew Integrated Systems	41.425	25.773	22.097	-	22.097	8.927	13.798	13.844	13.825	0.000	139.689
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S61 / <i>Acis Engineering Development</i>
<p><u>D. Acquisition Strategy</u></p> <p>Air Soldier System Milestone C was conducted in April 2019 for initial capabilities to include: Aircraft-mounted hardware and helmet worn displays that provide integrated helmet capabilities and increase aircrew situational awareness; and, Protective and Survival Soldier Kit items that reduce equipment weight and bulk and improve aircrew mission effectiveness and survivability. Air SS capabilities are being phased into production over time. Efforts for the Air SS program include development, integration, test, and airworthiness qualification of aviator flight display symbology technologies that will increase crew member situational awareness, and aircrew protective and survival equipment that reduces bulk and weight and improves crew station compatibility and mission effectiveness. Air SS includes improvements to the current flight helmet; improvements to the survival gear carriage system; lightweight body armor; environmental protective clothing and personal survival equipment; and a day/night helmet-mounted flight symbology display for Rotary Wing platform aviators. Efforts continue to develop deferred capabilities as defined within the Capability Development Document (CDD) to include Large Scale Combat Operations (LSCO) enablers and modernization initiatives for protection and situational awareness. These efforts migrate from program/platform-unique hardware and software solutions to common integrated air/ground solutions that align with Network, Soldier Lethality, and FVL modernization priorities</p> <p>Development efforts are conducted using a mix of both Cost and Firm Fixed Price Contracts with industry utilizing full and open competition. Each development effort is individually evaluated and the appropriate contract type is selected in order to appropriately share risk between industry and the government. Risk reduction, developmental, and operational testing are also conducted.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S61 / Acis Engineering Development					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Administration	Allot	Various Government : Huntsville, Alabama	4.409	0.050		0.059		0.181		-		0.181	Continuing	Continuing	Continuing
Subtotal			4.409	0.050		0.059		0.181		-		0.181	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Warrior and Air Soldier System Development	C/CPFF	Various Government : Various Locations	65.363	2.033		1.938		2.880		-		2.880	Continuing	Continuing	Continuing
TACPAN Congressional Add	TBD	TBD : TBD	-	-		7.598		-		-		-	0.000	7.598	-
Subtotal			65.363	2.033		9.536		2.880		-		2.880	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	RO	Various Government : Various Locations	4.532	0.055		0.054		0.582		-		0.582	Continuing	Continuing	Continuing
Subtotal			4.532	0.055		0.054		0.582		-		0.582	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental and Operational Testing	RO	Various Activities : Various Locations	20.256	0.280		0.278		0.145		-		0.145	Continuing	Continuing	Continuing
Subtotal			20.256	0.280		0.278		0.145		-		0.145	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army											Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons					Project (Number/Name) S61 / Acis Engineering Development			
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	94.560	2.418		9.927		3.788		-		3.788	Continuing	Continuing	N/A

Remarks

Funds for this project are allocated amongst a number of smaller development/qualification programs at various stages of technical maturity intended to address capability gaps associated with deferred Air SS capabilities being implemented as pre-planned product improvements to the baseline Air SS program. Efforts are largely focused on transitioning technologies and products initially developed under Small Business Innovative Research (SBIR) programs, Technology Maturation Initiatives (TMI), and/or the identification and qualification of COTS/GOTS capabilities that have the potential of satisfying remaining capability gaps as documented in the Air SS CDD.

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

Date: March 2023

[illegible]

2040 / 5

[illegible]

PE 0604601A / Infantry Support Weapons

Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
101	2023-01-15	2023-03-31	Completed	John Doe	150000	148000	100	Low	Project completed ahead of schedule.
102	2023-02-01	2023-05-15	In Progress	Jane Smith	200000	180000	90	Medium	Minor delays in procurement.
103	2023-03-01	2023-06-30	On Hold	Mike Johnson	180000	0	0	High	Waiting for client approval.
104	2023-04-01	2023-07-31	Planned	Sarah Lee	220000	0	0	Medium	Initial planning phase.
105	2023-05-01	2023-08-31	On Hold	David Kim	190000	0	0	Low	Resource allocation pending.
106	2023-06-01	2023-09-30	Planned	Emily White	210000	0	0	Medium	Market research in progress.
107	2023-07-01	2023-10-31	Planned	Chris Brown	230000	0	0	High	Complex project with many dependencies.
108	2023-08-01	2023-11-30	Planned	Alex Green	200000	0	0	Medium	Vendor selection underway.
109	2023-09-01	2023-12-31	Planned	Mia Black	170000	0	0	Low	Initial meeting with stakeholders.
110	2023-10-01	2024-01-31	Planned	Noah Grey	240000	0	0	High	Strategic initiative for next year.

S61 / Acis Engineering Development

[illegible]

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S61 / Acis Engineering Development

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air SS Pre-planned Product Improv (P3I) (Deferred Air SS CDDm requirements)	1	2016	4	2028
Aircrew Combat Equipment (ACE)	1	2020	4	2030
Nett Warrior Aviation Tablet	2	2022	4	2030

Note
Next Generation Heads Up Display (HUD) Integration & Qualification is the follow-on effort to the current Integrated Visual Augmentation System-Aviation (IVAS-A) Technical Maturation Initiative (TMI) effort.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S63 / Individual Weapons Engineering Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
S63: Individual Weapons Engineering Development	-	3.518	3.956	3.549	-	3.549	3.510	3.791	3.830	3.873	0.000	26.027
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Individual Weapons Engineering Development program provides funds to transition components or prototypes from Budget Activity 4 (BA 4) Element (PE) 0603827A Soldier Systems - Advanced Development Project S54 Small Arms Improvement Program and other domestic and foreign sources of small arms weapon systems to demonstrate, test and evaluate capability near or at planned operational requirements. The Maneuver Center of Excellence (MCoE), Fort Benning, GA (User Community) identifies the Individual Weapons Engineering Development as a critical capability gap for our Soldiers in combat and Soldier Lethality Cross Functional Team (CFT) has assumed this need as a task. Small arms systems include weapons up to 40 millimeter (mm) in caliber. Current and future efforts focus on system improvements designed to enhance lethality, target acquisition, fire control, usability, training effectiveness and reliability of weapons to include ammunition when developing and/or evaluating standard and non-standard weapons. Focus areas include system development, integration (to include human-systems), demonstration, test and evaluate components, prototypes and operational system prototypes of small arms weapon systems and/or enhancements. Benefits include continuous improvements to small arms weapon systems, fire control equipment, optics, gun barrels, ancillary equipment, training devices, component mounts, weapon mounts, and weapon/ammunition interface of current small arms fleet or new weapon systems.

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

	FY 2022	FY 2023	FY 2024
Title: Design and Development	2.580	2.874	2.593
Description: Design and development of Individual Weapons			
FY 2023 Plans: New Weapons and Enabling Technology Evaluation and Assessment will continue to focus on weapon design and development utilizing current state-of-the-art technologies and integration of those technologies for individual weapons across the spectrum of small arms from pistols through rifles and grenade launchers. Evaluation will focus on terminal effects and those technologies utilized to achieve on-target effects, as well as increase sustainability, reliability, and producibility and will include advanced combat optics and improvement of small arms munitions. Will leverage enabling Innovative Designs and Engineering Assessment (IDEA) technologies to obtain enabling technologies that can generate new capabilities and enhancements.			
FY 2024 Plans: New Weapons and Enabling Technology Evaluation and Assessment will continue to focus on weapon design and development utilizing current state-of-the-art technologies and integration of those technologies for individual weapons across the spectrum of small arms from pistols through rifles and grenade launchers. Evaluation will focus on terminal effects and those technologies			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>	Project (Number/Name) S63 / <i>Individual Weapons Engineering Development</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
utilized to achieve on-target effects, as well as increase sustainability, reliability, and producibility and will include advanced combat optics and improvement of small arms munitions.			
<i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Decrease due to anticipated reduction in weapon design and development evaluations and tasks from FY 2023 to FY 2024.			
<i>Title:</i> Testing and Evaluation <i>Description:</i> Test and evaluation of Individual Weapons <i>FY 2023 Plans:</i> New Weapons and Enabling Technology Testing and Evaluation will continue to test and evaluate new technology that can lead to enhancements of current and legacy weapon systems or create new weapon systems, as well as advanced combat optics and improvement of small arms munitions. <i>FY 2024 Plans:</i> New Weapons and Enabling Technology Testing and Evaluation will continue to test and evaluate new technology that can lead to enhancements of current and legacy weapon systems or create new weapon systems, as well as advanced combat optics and improvement of small arms munitions. <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase due to anticipated increase in testing and evaluation of Individual Weapons from FY 2023 to FY 2024.	0.938	0.938	0.956
<i>Title:</i> SBIR/STTR Transfer <i>Description:</i> Funding transferred in accordance with Title 15 USC 638 <i>FY 2023 Plans:</i> FY 2023 SBIR/STTR Transfer in accordance with Title 15 USC §638. <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> SBIR/STTR Transfer in accordance with Title 15 USC §638.	-	0.144	-
Accomplishments/Planned Programs Subtotals	3.518	3.956	3.549

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• S54: <i>Small Arms Improvement</i>	10.659	9.248	9.094	-	9.094	9.183	9.184	9.281	9.384	0.000	66.033
• G13503: <i>M4A1 CARBINE</i>	7.226	-	0.571	-	0.571	0.570	0.340	0.340	-	0.000	9.047

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) S63 / <i>Individual Weapons Engineering Development</i>			

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• G01501: <i>XM320 Grenade Launcher Module (GLM)</i>	13.934	11.703	14.143	-	14.143	17.711	17.873	17.894	17.869	Continuing	Continuing
• G15325: <i>Handgun</i>	4.930	-	0.032	-	0.032	0.033	0.007	0.007	-	0.000	5.009
• GL3200: <i>Items Less Than \$5.0m (WOCV-WTCV)</i>	13.826	2.138	1.148	-	1.148	1.055	2.237	2.241	2.243	Continuing	Continuing

Remarks

In support of Small Arms Requirements, components or prototypes developed in BA 4 PE 0603827A Soldier Systems - Advanced Development Project S54 Small Arms Improvement Program is transitioned to BA 5 PE 0604601A Infantry Support Weapons Project S63 Individual Weapons Engineering Development to conduct engineering and manufacturing development. Once the component, prototype or operational prototype achieves Milestone C and type classification the item transitions to small arms weapon systems production or modification program.

D. Acquisition Strategy

Primary strategy is to mature and finalize design efforts, award Research, Development, Test and Evaluation (RDT&E) Defense Ordnance Technology Consortium (DOTC) and Other Transaction Authority (OTA) type hardware contracts. Test and evaluate systems that result in type classification, material release, and follow-on production contract awards.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S63 / Individual Weapons Engineering Development					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Allot	PM Soldier Lethality, : Picatinny Arsenal	11.312	0.050	Mar 2022	0.050	Mar 2023	0.050	Mar 2024	-		0.050	Continuing	Continuing	Continuing
Travel	MIPR	PM Soldier Lethality, : Picatinny Arsenal	1.587	0.010	Mar 2022	0.010	Mar 2023	0.010	Mar 2024	-		0.010	Continuing	Continuing	Continuing
Subtotal			12.899	0.060		0.060		0.060		-		0.060	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fabrication	Various	Various : Multiple Contractors	4.120	0.917	Mar 2022	0.408	Mar 2023	0.408	Mar 2024	-		0.408	Continuing	Continuing	Continuing
Hardware Development	MIPR	DEVCOM AC, : Multiple	18.608	1.050	Mar 2022	1.631	Mar 2023	1.243	Mar 2024	-		1.243	Continuing	Continuing	Continuing
Subtotal			22.728	1.967		2.039		1.651		-		1.651	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering	MIPR	DEVCOM AC, : Multiple	69.234	0.391	Mar 2022	0.719	Mar 2023	0.708	Mar 2024	-		0.708	Continuing	Continuing	Continuing
Logistics	MIPR	TACOM, : Warren	5.178	0.100	Mar 2022	0.100	Mar 2023	0.100	Mar 2024	-		0.100	Continuing	Continuing	Continuing
Human Research and Engineering	MIPR	Army Research Laboratory, : Aberdeen Proving Ground	4.103	0.100	Mar 2022	0.100	Mar 2023	0.100	Mar 2024	-		0.100	Continuing	Continuing	Continuing
Subtotal			78.515	0.591		0.919		0.908		-		0.908	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S63 / Individual Weapons Engineering Development					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing	MIPR	Army Developmental Test Command, : Aberdeen Proving Ground	27.700	0.380	Mar 2022	0.750	Mar 2023	0.750	Mar 2024	-		0.750	Continuing	Continuing	Continuing
Operational Testing	MIPR	Army Test and Evaluation Command, : Aberdeen Proving Ground	17.995	0.260	Mar 2022	0.094	Mar 2023	0.090	Mar 2024	-		0.090	Continuing	Continuing	Continuing
Validation Testing	MIPR	Army Test and Evaluation Centers, : Multiple	10.307	0.260	Mar 2022	0.094	Mar 2023	0.090	Mar 2024	-		0.090	Continuing	Continuing	Continuing
Subtotal			56.002	0.900		0.938		0.930		-		0.930	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			170.144	3.518		3.956		3.549		-		3.549	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army																Date: March 2023												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons								Project (Number/Name) S63 / Individual Weapons Engineering Development										
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
DESIGN AND DEVELOPMENT																												
TEST AND EVALUATION																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S63 / Individual Weapons Engineering Development	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DESIGN AND DEVELOPMENT	1	2021	4	2028
TEST AND EVALUATION	1	2021	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
S70: Personnel Recovery Support System (PRSS)	-	3.018	2.963	2.591	-	2.591	0.605	0.652	0.659	0.667	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Personnel Recovery Support System (PRSS) consists of items including Personnel Recovery Devices (PRD), e.g. Personal Locator Beacons, and other Personnel Recovery Support Equipment (PRSE) items that provide the capability to report and locate isolated Soldiers, forces and elements. Funding supports system research, development, testing, and evaluation of next-generation PRSS/PRSE items to enhance capability and provide a secure waveform with Low Probability of Intercept (LPI)/Low Probability of Detection (LPD) while operating in increasingly contested environments utilizing secure signals of opportunity that meet Army qualifications. It ensures continued successful interoperability within the relevant theaters of operations and the Continental United States (CONUS).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Personnel Recovery Systems									3.018	2.855	2.591	
FY 2023 Plans: Continues research, development, and evaluation of components and hardware directly supporting Army personnel recovery requirements.												
FY 2024 Plans: Continues research, development, and evaluation and begins integration and testing of secure and classified components and hardware directly supporting Army personnel recovery requirements.												
FY 2023 to FY 2024 Increase/Decrease Statement: The FY24 decrease is due to shift from development to integration and testing of secure waveform.												
Title: SBIR/STTR Transfer									-	0.108	-	
Description: Funding transferred in accordance with Title 15 USC 638												
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638.												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.												
Accomplishments/Planned Programs Subtotals									3.018	2.963	2.591	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)	

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• G01101: Personnel Recovery Support System (PRSS)	9.741	4.691	5.356	-	5.356	6.655	9.398	9.403	9.412	Continuing	Continuing

Remarks

D. Acquisition Strategy

Execute PRSS/PRSE program development efforts for performance optimization through contracts with industry and reimbursable support agreements with other Government agencies, labs, and Federally Funded Research and Development Centers. Perform continuing development and test of new waveforms and hardware to ensure successful interoperability for personnel recovery and to mitigate potential security compromises to the PRSS/PRSE program.

Future program strategy is to adapt PRSS/PRSE products to align with changing doctrine and concepts of operations (CONOPS) to ensure integration and interoperability between ground and air forces and increase coverage within the relevant theaters of operations and the CONUS to ensure Soldier safety, recovery, and survivability.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PM Adminstration	Allot	Various Government : Huntsville, Alabama	0.988	0.150		0.065		0.062		-		0.062	Continuing	Continuing	Continuing
Subtotal			0.988	0.150		0.065		0.062		-		0.062	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Personnel Recovery System Development Systems Engineering	MIPR	Various Organizations : Various Locations	8.788	2.808		2.119		1.688		-		1.688	Continuing	Continuing	Continuing
Subtotal			8.788	2.808		2.119		1.688		-		1.688	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	Various Organizations : Various Locations	2.348	0.060		0.075		0.071		-		0.071	Continuing	Continuing	Continuing
Subtotal			2.348	0.060		0.075		0.071		-		0.071	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Testing/ Operational Testing	MIPR	Various Organizations : Various Locations	3.509	-		0.704		0.770		-		0.770	Continuing	Continuing	Continuing
Subtotal			3.509	-		0.704		0.770		-		0.770	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army											Date: March 2023			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons					Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		15.633	3.018		2.963		2.591		-		2.591	Continuing	Continuing	N/A

Remarks

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

Date: March 2023

[illegible]

2040 / 5

R-1 Program Element (Number/Name)

PE 0604601A / Infantry Support Weapons

Project (Number/Name)	Start Date	End Date	Duration (Days)	Actual Cost	Budgeted Cost	Variance	Cost Index	Performance Index	Cost Variance	Cost Performance	Cost Variance	Cost Performance
1	1/1/2020	1/31/2020	31	10000	10000	0	1.0	1.0	0	1.0	0	1.0
2	2/1/2020	2/28/2020	28	15000	15000	0	1.0	1.0	0	1.0	0	1.0
3	3/1/2020	3/31/2020	31	20000	20000	0	1.0	1.0	0	1.0	0	1.0
4	4/1/2020	4/30/2020	30	25000	25000	0	1.0	1.0	0	1.0	0	1.0
5	5/1/2020	5/31/2020	31	30000	30000	0	1.0	1.0	0	1.0	0	1.0
6	6/1/2020	6/30/2020	30	35000	35000	0	1.0	1.0	0	1.0	0	1.0
7	7/1/2020	7/31/2020	31	40000	40000	0	1.0	1.0	0	1.0	0	1.0
8	8/1/2020	8/31/2020	31	45000	45000	0	1.0	1.0	0	1.0	0	1.0
9	9/1/2020	9/30/2020	30	50000	50000	0	1.0	1.0	0	1.0	0	1.0
10	10/1/2020	10/31/2020	31	55000	55000	0	1.0	1.0	0	1.0	0	1.0
11	11/1/2020	11/30/2020	30	60000	60000	0	1.0	1.0	0	1.0	0	1.0
12	12/1/2020	12/31/2020	31	65000	65000	0	1.0	1.0	0	1.0	0	1.0
13	1/1/2021	1/31/2021	31	70000	70000	0	1.0	1.0	0	1.0	0	1.0
14	2/1/2021	2/28/2021	28	75000	75000	0	1.0	1.0	0	1.0	0	1.0
15	3/1/2021	3/31/2021	31	80000	80000	0	1.0	1.0	0	1.0	0	1.0
16	4/1/2021	4/30/2021	30	85000	85000	0	1.0	1.0	0	1.0	0	1.0
17	5/1/2021	5/31/2021	31	90000	90000	0	1.0	1.0	0	1.0	0	1.0
18	6/1/2021	6/30/2021	30	95000	95000	0	1.0	1.0	0	1.0	0	1.0
19	7/1/2021	7/31/2021	31	100000	100000	0	1.0	1.0	0	1.0	0	1.0
20	8/1/2021	8/31/2021	31	105000	105000	0	1.0	1.0	0	1.0	0	1.0
21	9/1/2021	9/30/2021	30	110000	110000	0	1.0	1.0	0	1.0	0	1.0
22	10/1/2021	10/31/2021	31	115000	115000	0	1.0	1.0	0	1.0	0	1.0
23	11/1/2021	11/30/2021	30	120000	120000	0	1.0	1.0	0	1.0	0	1.0
24	12/1/2021	12/31/2021	31	125000	125000	0	1.0	1.0	0	1.0	0	1.0
25	1/1/2022	1/31/2022	31	130000	130000	0	1.0	1.0	0	1.0	0	1.0
26	2/1/2022	2/28/2022	28	135000	135000	0	1.0	1.0	0	1.0	0	1.0
27	3/1/2022	3/31/2022	31	140000	140000	0	1.0	1.0	0	1.0	0	1.0
28	4/1/2022	4/30/2022	30	145000	145000	0	1.0	1.0	0	1.0	0	1.0
29	5/1/2022	5/31/2022	31	150000	150000	0	1.0	1.0	0	1.0	0	1.0
30	6/1/2022	6/30/2022	30	155000	155000	0	1.0	1.0	0	1.0	0	1.0
3												

S70 / Personnel Recovery Support System (PRSS)

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Personnel Recovery (PR) Development																												
PR Component, Integration, and Testing																												
Next Generation PR Upgrades and Adaptations to New Platforms																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) S70 / Personnel Recovery Support System (PRSS)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Personnel Recovery (PR) Development	1	2022	4	2028
PR Component, Integration, and Testing	3	2022	4	2028
Next Generation PR Upgrades and Adaptations to New Platforms	3	2023	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons				Project (Number/Name) VS5 / Soldier Protective Equipment			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
VS5: Soldier Protective Equipment	-	8.837	9.303	8.150	-	8.150	8.710	8.712	8.800	8.899	0.000	61.411
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Funding in this project supports the Army's Cross Functional Teams (CFT) initiatives. It supports Engineering and Manufacturing Development (EMD) to include design integration and manufacturing of production representative articles, formal DT/OT and Soldier touchpoints, and continued development of SPS technologies transitioning from VS4. It leverages advancements in technology to continue improvements to the Army's Personal Protective Equipment (PPE) portfolio to include hard and soft body armor components (including Vital Torso Protection (VTP) and Torso and Extremity Protection (TEP) respectfully), helmets (including Integrated Head Protection System (IHPS) and Next Generation (NG) IHPS), Military Protective Eyewear systems and other personal protective equipment to include female specific design and development. This project will continue to support cross-service initiatives to increase commonality.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Soldier Protective Equipment									8.837	8.963	8.150	
Description: Project VS5 (Soldier Protective Equipment) supports engineering and manufacturing development of Individual Soldier Ballistic Protection equipment. It will leverage advancements in technology to continue incremental improvements to Personal Protective Equipment (PPE).												
FY 2023 Plans: Evaluate and develop system and subsystem technologies across the PPE portfolio from emerging ballistic/blast threats. Continue to test ballistic properties of current PPE after exposure to extreme storage conditions to improve service life predictions and support repurposing efforts. Continue improving the Soldier Protection System (SPS), Next Generation Soldier Protection and Non-Destructive Test Equipment (NDTE) methodology, female and small statured soldier focused human factor evaluations that includes environmental/exposure testing, including Cold & Tropical regions, and durability testing. Continue to advance technology and materials into production processes as these technologies mature and enable expanded opportunities associated with gender specific PPE.												
FY 2024 Plans: The VS5 project supports testing, design integration, human factors evaluations and continued development across the Personal Protective Equipment (PPE) portfolio. These items include hard and soft armor, helmets, hearing protection, and other personal protective equipment.												
In FY24, the project will procure test assets and conduct user evaluation on Body Armor and Head Protection capabilities that transition from the S&T community such as Novel Fabric for Torso Protection, Anti-Fog for integrated Eyewear Platform, Durable												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army							Date: March 2023				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons			Project (Number/Name) VS5 / Soldier Protective Equipment				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2022	FY 2023	FY 2024		
Anti-Fog Coatings, and Lens Longevity efforts to determine efficacy in operational environment. Procure test assets and conduct user evaluation on uniforms made from p-aramid fabric transition from S&T community that provides extremity protection against frag threats.											
Ongoing efforts in this project consist of testing blast and ballistic properties of current PPE after exposure to extreme storage and environmental conditions, which improve service life predictions and support repurposing efforts. The project will also continue improving test methodology for the Soldier Protection System (SPS), Next Generation Soldier Protection, and Non-Destructive Test Equipment (NDTE), human factor evaluations focus on the female and small-statured soldier, and environmental and exposure testing (i.e., cold, tropical and jungle).											
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decrease in Soldier Protective Equipment portfolio is due to an anticipated decrease of Head Protection requirements in FY24.											
Title: SBIR/STTR Transfer											
Description: Funding transferred in accordance with Title 15 USC 638											
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638											
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638											
Accomplishments/Planned Programs Subtotals							8.837	9.303	8.150		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• VS4: Soldier Protective Equipment	4.122	5.434	7.991	-	7.991	7.988	7.994	8.076	8.166	Continuing	Continuing
• OMA - 121 - 121017000:	-	-	-	-	-	-	-	-	-		
Soldier Modernization -											
Soldier Protection Systems											
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) VS5 / Soldier Protective Equipment
<p>D. Acquisition Strategy</p> <p>Acquisition strategies for these programs vary in methods, and range from: 1) Material Change programs that result in engineering changes to existing systems to; 2) Traditional development programs that include an Engineering and Manufacturing Development phase ranging in duration from 12 to 48 months, depending on the level of design complexity and testing required.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604601A / <i>Infantry Support Weapons</i>				Project (Number/Name) <i>VS5 / Soldier Protective Equipment</i>					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Allot	Various SSV : Fort Belvoir, VA	2.998	0.496		0.637		0.936		-		0.936	Continuing	Continuing	Continuing
Subtotal			2.998	0.496		0.637		0.936		-		0.936	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prototype Contracts	Various	Various : Various	36.092	0.751		1.026		2.150		-		2.150	Continuing	Continuing	Continuing
Prod Sys Engineering Spt	MIPR	Various : Various	11.535	2.496		2.815		2.330		-		2.330	Continuing	Continuing	Continuing
Subtotal			47.627	3.247		3.841		4.480		-		4.480	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Engineering Spt	MIPR	CCDC-SC : Natick, MA	6.339	1.435		1.230		0.635		-		0.635	Continuing	Continuing	Continuing
Subtotal			6.339	1.435		1.230		0.635		-		0.635	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Environmental/HFE	MIPR	Various DTC & OTC : Various DTC & OTC	13.843	1.114		1.315		0.559		-		0.559	Continuing	Continuing	Continuing
Surveillance Testing - Base Threat/Emerging Threat	TBD	TBD : TBD	2.582	2.545		2.280		1.540		-		1.540	Continuing	Continuing	Continuing
Subtotal			16.425	3.659		3.595		2.099		-		2.099	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army											Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons					Project (Number/Name) VS5 / Soldier Protective Equipment			
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	73.389	8.837		9.303		8.150		-		8.150	Continuing	Continuing	N/A

Remarks

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

Date: March 2023

Appropriation/Budget Activity
2040 / 5

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

Project (Number/Name) <i>VS5 / Soldier Protective Equipment</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604601A / Infantry Support Weapons	Project (Number/Name) VS5 / Soldier Protective Equipment

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Test and Qualify Improvements to SPS	1	2022	4	2028
Torso Protection Improvements	1	2022	4	2028
Head Protection Improvements	1	2022	4	2028
Hard Armor Protection Improvements	1	2022	4	2028
SPS System Level Test Technology Insertions	1	2022	4	2028
Non-Destructive Test Equipment	1	2023	1	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	9.177	22.163	28.226	-	28.226	15.058	6.517	6.556	3.574	0.000	91.271
BX8: Cold Weather All-Terrain Vehicle (CATV)	-	1.759	-	-	-	-	-	-	-	-	0.000	1.759
H07: Family Of Med Tac Veh	-	7.418	22.163	28.226	-	28.226	15.058	6.517	6.556	3.574	0.000	89.512

A. Mission Description and Budget Item Justification

This Program Element (PE) supports continued modernization of the Army's Medium Tactical Wheeled Vehicle fleets by investigating technology insertions including, but not limited to: Predictive Logistics, vetronics, vehicle electrification and other climate change initiatives, Victory Architecture, autonomous operations and other emerging technologies. Furthermore, the PE supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts to include developing technologies to improve safety, survivability and mobility in an arctic environment.

The Family of Medium Tactical Vehicles (FMTV) includes Cargo, Tractor, Load Handling System (LHS), Wrecker, Expandable Van, Shop Van, and Dump variants with payloads ranging from 3-tons to 10-tons and associated companion trailers. FMTV trucks perform over 55 percent of the Army's local haul, line haul, and unit resupply missions. It operates throughout theater as multi-purpose transportation vehicles in combat, combat support, and combat service support units. Funding from this Program Element will be used to support the continued evolution of the future FMTV fleet as well as tech insertion opportunities to keep the current FMTV fleet relevant on today's battlefield. This includes upgrades in survivability and crew protection, improved safety by leveraging advancements in commercial active safety technologies, modernizing the aging Low Velocity Air Drop (LVAD) fleet of vehicles, improved utilization through modularity, integration of advanced high efficiency powertrains and fuel saving technologies, and insertion of autonomous vehicle capabilities that will change the way transportation missions are conducted around the world.

FY 2024 Project H07 Base funds in the amount of \$25.500 million will be used for Climate Initiatives, Predictive Logistics and Improved Vehicle Safety Technologies.

FY 2024 Project H07 Base funds in the amount of \$2.726 million will be used to conduct Production Qualification Testing (PQT) of the FMTVA2 based LVAD. The three FMTV LVAD models (M1081, M1093, M1094) ended production in 2009 and represent the oldest vehicles in the FMTV fleet. These vehicles suffer from poor readiness due to maintenance and supply issues as many parts have gone obsolete. Updates to the LVAD fleet are needed to modernize the fleet.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		PE 0604604A / Medium Tactical Vehicles			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	9.524	22.163	18.566	-	18.566
Current President's Budget	9.177	22.163	28.226	-	28.226
Total Adjustments	-0.347	0.000	9.660	-	9.660
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.347	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	9.660	-	9.660
Change Summary Explanation					
Increase in Fiscal Year (FY) 2024 budget request from the previous budget request is to develop Anti-Idle capability for the Tactical Wheeled Vehicle Fleet					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles				Project (Number/Name) BX8 / Cold Weather All-Terrain Vehicle (CATV)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
BX8: Cold Weather All-Terrain Vehicle (CATV)	-	1.759	-	-	-	-	-	-	-	-	0.000	1.759
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Cold-weather All-Terrain Vehicle (CATV) is a tracked vehicle that will provide transportation for up to a 10-Soldier element, emergency medical evacuation, command and control capability, and general cargo transportation on- and off-road in an Arctic environment under a wide range of otherwise impassable terrain, to include frozen ice, and extreme cold weather conditions to support year-round training as well as to conduct Homeland Defense (HD), Homeland Security (HS), and Defense support of Civil Authorities (DSCA) mission. The CATV will employ two carrier variants: General-purpose carrier variant capable of providing transport for not less than 9 Soldiers, plus the driver within a cab/enclosure (10 Soldiers) with equipment and supplies to sustain three days of combat operations. The General Purpose variant will be reconfigurable to a casualty evacuation (CASEVAC) variant capable of transporting medical equipment, two caregivers, and not less than two litter patients or four ambulatory patients in addition to the driver within a cab/enclosure. The General Purpose variant will also be reconfigurable to a Command and Control (C2) variant providing the space weight and power to hosting standard Joint communications and common operating picture (COP) platforms. The C2 and COP equipment should be able to be used enroute or with minimal setup upon halt by six Soldiers in addition to the driver within a cab/enclosure. Cargo/flatbed capable of carrying outsized equipment and cargo. The cargo variant should allow for loading cargo with a forklift from either side (i.e. dropside or flatbed configuration) and have a cab/enclosure for two Soldiers (driver and vehicle commander).

Testing in ECW is necessary to prove the adequacy to the requirements with timing necessary to support planned Field Unit Equipped (FUE) in FY23. FUE is needed as soon as possible to replace the current capability that is reaching the end of life due to obsolescence

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

	FY 2022	FY 2023	FY 2024
Title: CATV Test and Evaluation	1.759	-	-
Description: Funding provided for endurance, performance, transportability testing and production verification testing for CATV.			
Accomplishments/Planned Programs Subtotals	1.759	-	-

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• D15620: Family of Cold Weather All-Terrain Vehicle (CATV)	16.450	36.472	28.745	-	28.745	39.810	39.895	39.867	1.078	0.000	202.317

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604604A / <i>Medium Tactical Vehicles</i>	Project (Number/Name) BX8 / <i>Cold Weather All-Terrain Vehicle (CATV)</i>
<p>D. Acquisition Strategy</p> <p>The Acquisition Strategy supports a two-step acquisition approach with an OTA based Prototype contract in 2QFY21 to two vendors for the prototype phase and a down select to one vendor on a Production contract in 3QFY22 that will support the production phase. The Army Procurement Objective (APO) is 110 Cold-weather All-Terrain Vehicles (CATV).</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles						Project (Number/Name) BX8 / Cold Weather All-Terrain Vehicle (CATV)			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CATV Test and Evaluation	MIPR	Various : Various	0.816	1.759	Mar 2022	-		-		-		-	0.000	2.575	-
Subtotal			0.816	1.759		-		-		-		-	0.000	2.575	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.816	1.759		-		-		-		-	0.000	2.575	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army																Date: March 2023												
Appropriation/Budget Activity 2040 / 5										R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles								Project (Number/Name) BX8 / Cold Weather All-Terrain Vehicle (CATV)										
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
CATV Endurance/Performance/Production Verification Testing	Testing																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604604A / <i>Medium Tactical Vehicles</i>	Project (Number/Name) BX8 / <i>Cold Weather All-Terrain Vehicle (CATV)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CATV OTA Prototype Contract Award	2	2021	2	2021
CATV Endurance/Performance/Production Verification Testing	3	2021	2	2022

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles				Project (Number/Name) H07 / Family Of Med Tac Veh			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
H07: Family Of Med Tac Veh	-	7.418	22.163	28.226	-	28.226	15.058	6.517	6.556	3.574	0.000	89.512
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The FMTVA2 Production and Engineering Change Proposal (ECP) modernization effort restores vehicle performance that was lost due to the addition of armor protection kits as the threat to tactical vehicles and the FMTV has increased. The FMTVA2 also addresses Space, Weight, Power, and Cooling (SWaP-C) constraints from having to host an increasing amount of C4ISR and Counter-IED equipment. PD MTV is executing the FMTVA2 effort documented in a signed Acquisition Decision Memorandum by the AAE on 16 November 2015.

This Project also supports development of Climate Change initiatives such as Vehicle Electrification, Onboard Vehicle Power, Predictive Logistics (PL) and other climate change related technologies for the Tactical Wheeled Vehicle fleet.

The FMTVA1P2 ended production in 2021 and represents the highest density FMTV model with over 40,000 vehicles fielded to date. The FMTVA1P2 will remain in the tactical vehicle fleet until 2040 and beyond. To ensure supportability of the FMTVA1P2 through FY 2040 and beyond, the PD MTV, as lifecycle managers for the system, shall address potential obsolescence issues with the powertrain and Material Handling Equipment used on the FMTV.

Increasing survivability and crew protection of the FMTVA1P2 comes at the expense of decreased vehicle mobility and performance in soft soil and winter environments. The FMTVA1P2 is being asked to carry more weight than what it was originally designed for. Low risk, highly commercial improvements to the FMTVA1P2 driveline, suspension, and tires can be made to minimize the loss in mobility performance.

FY 2024 Project H07 Base funds in the amount of \$.500 million will be used for development and integration of Improved Vehicle Safety Technologies, including active safety technologies such as front collision warning, collision mitigation, lane keeping assist, adaptive cruise control, and 360 degree situational awareness.

FY 2024 Project H07 Base funds in the amount of \$2.726 million will be used for Low Velocity Air Drop (LVAD) Automotive Performance Qualification (PQT) testing.

FY 2024 Project H07 Base funds in the amount of \$25.000 million will be used to continue the development, test, and integration of Climate Change initiatives such as Tactical Vehicle Anti-Idle Retrofit Kit, On Board Vehicle Power, Hybrid Propulsion, Predictive Logistics (PL) development and other technologies associated with the combatting climate change for the Tactical Wheeled Vehicle fleet.

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

	FY 2022	FY 2023	FY 2024
Title: FMTVA2 Production and ECP Modernization Effort	2.300	2.354	0.500
Description: Funding used to support the continued evolution of the future FMTV fleet as well as tech insertion opportunities to keep the current FMTV fleet relevant on today's battlefield. The FMTVA2 production and ECP modernization effort restores			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604604A / <i>Medium Tactical Vehicles</i>		Project (Number/Name) H07 / <i>Family Of Med Tac Veh</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
vehicle performance that was lost due to the addition of armor protection kits as the threat to tactical vehicles and the FMTV has increased. Live Fire test assets are needed to support Live Fire Testing required per Chapter 139, Title 10 USC. Operational Testing required per Chapter 141, Title 10 USC.					
FY 2023 Plans: FY 2023 will continue to fund the Operational Test (OT) and implementation of Predictive Logistics					
FY 2024 Plans: FY 2024 will continue to fund the development of Improved Vehicle Safety Technologies					
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 decrease due to the completion of Operational Test in FY2023 and transition to development of Improved Vehicle Safety Technologies with emphasis towards Climate Change initiatives and Low Velocity Air Drop (LVAD) requirements.					
Title: FMTV LVAD Next Generation Model			5.118	4.000	2.726
Description: Updates to the FMTV Low Velocity Air Drop (LVAD) are needed to address obsolescence issues and to modernize the fleet.					
FY 2023 Plans: FY 2023 budget activities include the LVAD STS Work Directive Task 2, conversion of nine prototype test assets (M1081 and M1093), production of four Live Fire trucks along with LVAD Survivability Live Fire testing.					
FY 2024 Plans: FY 2024 will fund the LVAD Automotive Production Qualification Testing, Transportation testing, LVAD Airdrop safety certification testing.					
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 decrease reflects completion of LVAD prototype build.					
Title: Climate Change Initiatives			-	15.000	25.000
FY 2023 Plans: FY2023 Project H07 Base funds in the amount of \$15.000 million will be used for Anti-idle retrofit kit prototype testing for MTV and the development and engineering of kits for the HTV fleet. It will fund the integration, start of test, and procure both On board vehicle Power and HTV anti-idle prototypes kits. Funds will also support development and engineering of FuelSense 2.0 technologies, and an electric M915 Study, as well as fund the development of other technologies associated with the combatting					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles			Project (Number/Name) H07 / Family Of Med Tac Veh				
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024
climate change, power and battery modernization strategies and the support of artic strategies for the Tactical Wheeled Vehicle fleet.											
FY 2024 Plans: FY2024 Project H07 Base funds in the amount of \$25.000 million will be used to develop engineer change proposals for the MTV Anti-Idle kits and continue to fund the HTV prototype development and test. It will procure On board vehicle Power prototypes kits, fund the integration and start of test. Funds will also support testing of FuelSense 2.0 technologies, as well as fund the development of other technologies associated with the combatting climate change, power and battery modernization strategies and the support of artic strategies for the Tactical Wheeled Vehicle fleet.											
FY 2023 to FY 2024 Increase/Decrease Statement: \$10M increase specifically intended to continue to develop Anti-Idle capability for the Tactical Wheeled Vehicle Fleet.											
Title: SBIR/STTR Transfer									-	0.809	-
FY 2023 Plans: SBIR/STTR Transfer											
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to SBIR/STTR Transfer											
Accomplishments/Planned Programs Subtotals									7.418	22.163	28.226
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• D15500: Family Of Medium Tactical Veh (FMTV)	136.152	120.636	110.734	-	110.734	117.668	110.073	112.160	107.172	0.000	814.595
• D04016: MEDIUM TACTICAL VEHICLE PROTECTION KITS	3.800	20.000	0.000	-	0.000	-	-	-	-	0.000	23.800
Remarks											
D. Acquisition Strategy											
The strategy for the FMTVA2 Production and Engineering Change Proposal (ECP) Modernization Effort led to award of a Firm-Fixed Price Requirements contract that will have a base award of five years (two years for vehicle testing and three production years) with two, one-year option production periods and to conduct FMTVA2 Live Fire and Operational Testing. These efforts will utilize Government test facilities.											
The strategy for the Next Generation FMTV LVAD Model Configuration is to address obsolescence issues and bring the configuration up to today's standards. This effort											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604604A / <i>Medium Tactical Vehicles</i>	Project (Number/Name) H07 / <i>Family Of Med Tac Veh</i>
<p>will utilize a System Technical Support (STS) contract with the current FMTV Original Equipment Manufacturer (OEM).</p> <p>The strategy to develop, integrate, and test Improved Vehicle Safety Technologies is to leverage active safety capabilities developed commercially and adapt for military use on the FMTV. The development and integration will be conducted either via STS Task Order with the vehicle OEM or an Other Transaction Authority (OTA) with industry.</p> <p>The FMTV program will continually monitor emerging technologies and capabilities and leverage existing partnerships within the science and technology centers as well as through industry market research and partnerships in order to support the Army's Climate Change strategy . The anticipated outcomes of these efforts are fully validated Engineering Change Proposals that can be applied to the current and future FMTV fleet.</p> <p>The FMTV program will procure prototypes via Other Transaction Authority (OTA) Agreements for test and evaluation, including soldier touch points to gain user feedback. The OTAs then offer a path to transition to production.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles				Project (Number/Name) H07 / Family Of Med Tac Veh					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	SBIR/STTR Transfer : USAARMY HQDA	-	-		0.809		-		-		-	0.000	0.809	-
Subtotal			-	-		0.809		-		-		-	0.000	0.809	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTV LVAD Next Generation Development / Prototypes	SS/CPFF	Oshkosh Defense : Oshkosh, WI	0.750	3.991	Jun 2022	-		-		-		-	0.000	4.741	-
FMTV Improved Vehicle Safety Technologies	MIPR	ATEC : ABERDEEN PROVING GROUNDS, MD	2.700	-		1.883	Mar 2023	0.500	Mar 2024	-		0.500	0.000	5.083	-
FMTV Climate Change Initiatives	TBD	tbd : tbd	-	-		15.000	Mar 2023	25.000	Jun 2024	-		25.000	0.000	40.000	-
FMTV Implementation of Predictive logistics	TBD	tbd : tbd	-	0.300	Jun 2022	0.471	Mar 2023	-		-		-	0.000	0.771	-
Subtotal			3.450	4.291		17.354		25.500		-		25.500	0.000	50.595	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FMTVA2 Operational Testing	MIPR	OTC : TBD	-	2.000	Nov 2022	-		-		-		-	0.000	2.000	-
FMTV LVAD Test Assets	SS/FFP	Oshkosh Defense : Oshkosh, WI	-	0.365	Jun 2022	-		-		-		-	0.000	0.365	-
FMTV LVAD Live Fire Testing	MIPR	Army Test Center (ATC) : Aberdeen Proving Grounds, MD	-	0.477	Jun 2022	0.400	Nov 2022	-		-		-	0.000	0.877	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604604A / Medium Tactical Vehicles				Project (Number/Name) H07 / Family Of Med Tac Veh					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVAD TRANSPORTABILITY TEST	SS/CPFF	OshKosh Defense : Oshkosh, WI	-	0.160	Apr 2022	-		-		-		-	0.000	0.160	-
LVAD PVT / PQT	MIPR	Army Test Center (ATC) : Aberdeen Proving Grounds, MD	-	-		3.600	Nov 2022	2.726	Mar 2024	-		2.726	0.000	6.326	-
LVAD AIR DROP	MIPR	Airborne and Special Operations Test Directorate : Ft. Bragg, NC	-	0.125	May 2022	-		-		-		-	0.000	0.125	-
Subtotal			-	3.127		4.000		2.726		-		2.726	0.000	9.853	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			3.450	7.418		22.163		28.226		-		28.226	0.000	61.257	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
2040 / 5		PE 0604604A / Medium Tactical Vehicles		H07 / Family Of Med Tac Veh	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
FMTVA2																												
FMTVA2 Operational Testing (OT)																												
FMTVA2 Type Classification and Material Release (TC/MR)																												
FMTVA2 First Unit Equipped (FUE)																												
FMTV LVAD NEXT GENERATION MODEL																												
FMTV LVAD Next Generation Model Analysis																												
FMTV LVAD Live Fire Test																												
FMTV LVAD Air Drop / Production Qualification Testing (PQT)																												
FMTV LVAD TRANSITION TO PROCUREMENT																												
FMTV Improved Vehicle Safety Development Integration Testing																												
FMTV Climate Change Initiatives																												
Electrification																												
Anti-idle / Hybridization																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army

Date: March 2023

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604604A / Medium Tactical Vehicles

Project (Number/Name)

H07 / Family Of Med Tac Veh

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FMTVA2	1	2019	4	2024
FMTVA2 Contract Award/Delivery Order 1	2	2018	2	2018
FMTVA2 Allocated Baseline Review (ABR)	3	2018	3	2018
FMTVA2 Product Baseline Review (PBR)	4	2018	4	2018
FMTVA2 Delivery Order 2 (DO2)	4	2021	4	2021
FMTVA2 Production Validation Testing (PVT)	3	2019	4	2021
FMTVA2 Live Fire Test & Evaluation (LFT&E)	3	2019	4	2019
FMTVA2 Delivery Order 3 (DO3)	4	2021	4	2021
FMTVA2 Operational Testing (OT)	4	2022	2	2023
FMTVA2 Type Classification and Material Release (TC/MR)	4	2023	4	2023
FMTVA2 First Unit Equipped (FUE)	4	2023	4	2023
FMTVA1P2	1	2019	4	2019
FMTVA1P2 FY 2018 Vehicle Delivery	4	2018	4	2019
FMTV LVAD NEXT GENERATION MODEL	3	2020	2	2025
FMTV LVAD Next Generation Model Analysis	4	2021	4	2024
FMTV LVAD Live Fire Test	3	2022	3	2023
FMTV LVAD Air Drop / Production Qualification Testing (PQT)	3	2022	4	2025
FMTV LVAD TRANSITION TO PROCUREMENT	1	2025	1	2025
FMTV Improved Vehicle Safety Development Integration Testing	2	2023	4	2025
FMTV Climate Change Initiatives	2	2023	4	2025
Electrification	2	2023	4	2025
Anti -idle / Hybridization	4	2025	4	2025

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604611A / JAVELIN							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	8.202	16.186	7.827	-	7.827	10.384	10.065	10.172	10.286	0.000	73.122
499: Javelin (AAWS-M)	-	8.202	16.186	7.827	-	7.827	10.384	10.065	10.172	10.286	0.000	73.122

A. Mission Description and Budget Item Justification

Javelin is a man-portable, fire-and-forget, medium-range missile with enhanced situational awareness and precision direct-fire effects to defeat armored vehicles, fortifications, and soft targets in a range of military operations. The Javelin Weapon System consists of a re-usable Command Launch Unit (CLU) and a modular missile encased in a disposable launch tube assembly. The system also includes training devices for tactical training and classroom training. Javelin has a high kill rate against a variety of targets at extended ranges under day/night, battlefield obscurants, adverse weather and multiple counter-measure conditions. Javelin has proven adaptability for use on a variety of platforms and remote weapon stations. Research, Development, Test & Evaluation (RDT&E) funding provides for system improvements in accordance with the Javelin Capabilities Production Document objectives and user priorities for future development.

FY 2024 dollars in the amount of \$7.827 million will continue Javelin system improvements to address emerging threats, improve engagement timeline, and increase lethality.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	7.094	7.870	7.993	-	7.993
Current President's Budget	8.202	16.186	7.827	-	7.827
Total Adjustments	1.108	8.316	-0.166	-	-0.166
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	8.316			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.108	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.166	-	-0.166

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

Project: 499: Javelin (AAWS-M)

Congressional Add: Program Increase - Army Requested Transfer from MiP Line 11

Congressional Add Subtotals for Project: 499

FY 2022	FY 2023
-	8.316
-	8.316

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604611A / JAVELIN	
<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u>		FY 2022	FY 2023
		Congressional Add Totals for all Projects	- 8.316
<u>Change Summary Explanation</u> Decreased funding to support higher Army priorities.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
499: Javelin (AAWS-M)	-	8.202	16.186	7.827	-	7.827	10.384	10.065	10.172	10.286	0.000	73.122
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Javelin is a man-portable, fire-and-forget, medium-range missile with enhanced situational awareness and precision direct-fire effects to defeat armored vehicles, fortifications, and soft targets in a range of military operations. The Javelin Weapon System consists of a re-usable Command Launch Unit (CLU) and a modular missile encased in a disposable launch tube assembly. The system also includes training devices for tactical training and classroom training. Javelin has a high kill rate against a variety of targets at extended ranges under day/night, battlefield obscurants, adverse weather and multiple counter-measure conditions. Javelin has proven adaptability for use on a variety of platforms and remote weapon stations. Research, Development, Test & Evaluation (RDT&E) funding provides for system improvements in accordance with the Javelin Capabilities Production Document objectives and user priorities for future development.

FY 2024 dollars in the amount of \$7.827 million will continue Javelin system improvements to address emerging threats, improve engagement timeline, and increase lethality.

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

	FY 2022	FY 2023	FY 2024
Title: Javelin System Improvements	8.092	7.471	7.712
Description: Javelin Weapon System Research and Development funding line completes development of a new Lightweight Command Launch Unit (LWCLU), conducts countermeasure and threat mitigation as well as develops critical software/hardware upgrades for the Javelin Missile System. It provides improved capability to the warfighter by doubling the target identification range and increasing system engagement range up to 4km, while reducing soldier burden. LWCLU and Missile Software improvements, like Auto-Gate/Fast-Launch, will address emerging threats, improve engagement timeline, and increase lethality.			
FY 2023 Plans: Continue LWCLU Qualification Testing. Complete LWCLU Operational Testing. Perform and complete LWCLU Airborne Compatibility Qualification Test.			
FY 2024 Plans: Complete LWCLU Qualification Testing. Begin software improvements, including Auto-Gate/Fast-Launch, to improve the Javelin Weapons System engagement time and increase lethality against emerging threats and potential adversary countermeasures.			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decrease from FY 2023 to FY 2024 is due to completion of LWCLU Operational Test and Airborne Compatibility Qualification Test.			
Title: Integration and Countermeasure/Threat management	0.110	0.112	0.115

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2022	FY 2023	FY 2024		
Description: Integration and Countermeasure/Threat management allows for technical assessments, concept studies, documentation, prototypes, demonstrations and risk mitigation efforts to address emerging threats and to maintain modernized overmatch capability for U.S. and Allied Nations ground forces. FY 2023 Plans: Continue to perform technical assessments, concept studies, prepare documentation, develop prototypes and perform risk reduction efforts to address emerging threats as well as peer and near peer adversary Javelin countermeasures. FY 2024 Plans: Continue to perform technical assessments, concept studies, prepare documentation, develop prototypes and perform risk reduction efforts to address emerging threats as well as peer and near peer adversary Javelin countermeasures. FY 2023 to FY 2024 Increase/Decrease Statement: No significant increase from FY 2023 to FY 2024.												
Title: SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC 638. FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638. FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.								-	0.287	-		
Accomplishments/Planned Programs Subtotals								8.202	7.870	7.827		
								FY 2022	FY 2023			
Congressional Add: Program Increase - Army Requested Transfer from MiP Line 11								-	8.316			
FY 2023 Plans: Congressional Interest Item funding provided for Army Requested Transfer from MiP Line 11.												
Congressional Adds Subtotals								-	8.316			
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• H06102: JAVELIN (AAWS-M)	1,173.216	368.530	132.564	-	132.564	164.992	122.085	122.245	122.371	0.000	2,206.003	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)			

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• H06103: Javelin Lightweight Command Launch Unit (CLU)	213.793	63.122	66.945	-	66.945	77.296	77.120	77.224	77.305	0.000	652.805

Remarks

D. Acquisition Strategy

Current Acquisition Strategy addresses software and hardware technology upgrades to the Javelin system. The Javelin Lightweight Command Launch Unit (LWCLU) addresses the Close Combat Missile System-Medium (CCMS-M) Capability Production Document requirement for a low soldier burden dismounted anti-tank missile system. System upgrades will address emerging threats, improve engagement timeline and increase lethality. Development effort utilizes prime contractor, Javelin Joint Venture (Raytheon, Tucson, AZ, and Lockheed Martin, Orlando, FL). The Javelin Joint Venture has invested Independent Research and Development in the LWCLU. Future LWCLU and Missile system upgrades will continue to address emerging threats and ensure modernized overmatch capability for U.S and allied ground forces. LWCLU is currently in Low-Rate Initial Production (LRIP) with Full-Rate Production (FRP) scheduled in FY 2024. Pre-Planned Product Improvements will be cut into future production as Engineering Change Proposals (ECPs) to the existing LWCLU and missile configurations. These improvements will include technology refresh efforts as necessary, and capability enhancements as prioritized by the requirements developer.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army													Date: March 2023		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering/ Program Management, Govt	Various	Multiple : Redstone Arsenal, AL	5.230	0.937	Feb 2022	0.467	Mar 2023	0.769	Feb 2024	-		0.769	0.000	7.403	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.287		-		-		-	0.000	0.287	-
Subtotal			5.230	0.937		0.754		0.769		-		0.769	0.000	7.690	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Javelin System Improvements	Various	Multiple : Various Locations	56.760	2.371	Jul 2022	-		6.943	Mar 2024	-		6.943	0.000	66.074	-
Integration and Counter Measure/Threat management	MIPR	Multiple : Various Locations	-	0.110	Mar 2022	0.112	Mar 2023	0.115	Mar 2024	-		0.115	0.000	0.337	-
Subtotal			56.760	2.481		0.112		7.058		-		7.058	0.000	66.411	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Lightweight CLU Qualification	SS/CPFF	JJV/Raytheon/ Lockheed Martin : Orlando, FL/Tucson, AZ	3.836	3.982	Feb 2023	9.561	Feb 2023	-		-		-	0.000	17.379	-
Lightweight CLU Qualification	MIPR	Redstone Test Center : Redstone Arsenal, AL	1.048	-		-		-		-		-	0.000	1.048	-
Lightweight CLU Airborne Compatibility Qualification Test	MIPR	Yuma Proving Grounds : Yuma, AZ	-	-		0.381	Apr 2023	-		-		-	0.000	0.381	-
Lightweight CLU Operational Testing	MIPR	Multiple : Various Locations	-	0.802	Oct 2022	5.378	Apr 2023	-		-		-	0.000	6.180	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604611A / JAVELIN				Project (Number/Name) 499 / Javelin (AAWS-M)					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			4.884	4.784		15.320		-		-		-	0.000	24.988	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			66.874	8.202		16.186		7.827		-		7.827	0.000	99.089	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604611A / JAVELIN			Project (Number/Name) 499 / Javelin (AAWS-M)				

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Lightweight Command Launch Unit (LWCLU)																												
LWCLU Qualification Testing																												
LWCLU Airborne Compatibility Qualification Test																												
LWCLU Operational Testing																												
Javelin System Improvements																												
Auto-Gate/Fast-Launch																												
LWCLU HIPPI CCA Future Growth																												
Integration and Counter Measure/Threat management																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604611A / JAVELIN	Project (Number/Name) 499 / Javelin (AAWS-M)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Lightweight Command Launch Unit (LWCLU)	3	2021	1	2024
LWCLU Qualification Testing	3	2021	1	2024
LWCLU Airborne Compatibility Qualification Test	4	2023	4	2023
LWCLU Operational Testing	1	2023	4	2023
Javelin System Improvements	1	2020	4	2028
Auto-Gate/Fast-Launch	1	2024	4	2028
LWCLU HIPPI CCA Future Growth	1	2025	4	2028
Integration and Counter Measure/Threat management	4	2022	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604622A I Family of Heavy Tactical Vehicles							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	27.406	53.014	44.197	-	44.197	18.430	34.459	39.034	50.005	0.000	266.545
659: Family Of Hvy Tac Veh	-	4.896	24.089	7.232	-	7.232	4.596	11.266	16.038	11.011	0.000	79.128
DG7: Common Tactical Truck	-	-	-	23.905	-	23.905	-	-	-	-	0.000	23.905
E50: TRAILER DEVELOPMENT	-	2.862	0.737	-	-	-	-	-	-	-	0.000	3.599
EZ8: Leader/Follower	-	19.648	28.188	13.060	-	13.060	13.834	23.193	22.996	38.994	0.000	159.913

Note

Project DG7 / Common Tactical Truck (CTT) is not a new start effort in Fiscal Year (FY) 2024. The execution for this effort was previously tracked on 0604622A / Family of Heavy Tactical Vehicles - Project Number 659. Out-year funding for CTT is also captured on Project Number 659, but will be transferred to project DG7 before the next budget cycle.

A. Mission Description and Budget Item Justification

This Program Element (PE) aligns system development and demonstration of Heavy Tactical Vehicles (HTV) with Multi-Domain Operations (MDO) requirements to support combat and combat support missions to include line haul, local haul, and unit resupply. HTV trucks transport water, ammunition, and general cargo over all terrains and throughout the battle-space. Systems include the Heavy Expanded Mobility Tactical Truck (HEMTT), Palletized Load System (PLS), Heavy Equipment Transporter System (HETS), Enhanced Heavy Equipment Transporter System (EHETS), Line Haul, Heavy Dump Truck (HDT), medium tactical trailers including the Medium Equipment Trailer (MET), the family of flatbed semitrailers to include but not limited to the 40-Ton M870, 34-Ton M872 and the 25-Ton M172 that support multiple Army missions and the development and demonstration of enablers. Recovery systems such as the Modular Catastrophic Recovery System (MCRS) and other heavy wreckers, that rescue large wheeled vehicle platforms in severe off-road conditions are also included. Periodic evolutionary upgrade of survivability and crew protection as described in the Long Term Protection Strategy (LTPS) is supported by this PE for both the HTV family of vehicles and the Family of Medium Tactical Vehicles (FMTV). Artic and other climate change efforts are also supported by this PE.

The Common Tactical Truck (CTT) is the next generation of tactical trucks to meet the Army's Tactical Wheeled Vehicle (TWV) Modernization Strategy to take full advantage of economies of scale and commonality with the objective to procure a commercial based Family of Vehicles to replace HEMTT, PLS and Line Haul tractors and leverage best commercial practices at lower procurement costs that are autonomy ready. CTT Middle Tier of Acquisition effort is \$60.000 million RDT&E from FY23 to FY26. The remainder of the CTT Program is fully funded across the Future Years Defense Program.

The Leader Follower (LF) funding line supports the Autonomous Transport Vehicle-System (ATV-S) effort that equips Tactical Wheeled Vehicles with autonomous behaviors. Additionally, the capability gives convoy commanders flexibility to leverage the six levels of automated driving that range from Level 0 (Fully Manual) to Level 5 (Fully Autonomous), and any combination therein to conduct convoy operations. Autonomous driving behaviors enables increased operational efficiency of tactical wheeled vehicles resulting in an increase of sustainment throughput while reducing Soldier exposure to hostile threats.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army			Date: March 2023			
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				
Funding also supports modernization of the current Tactical Wheeled Vehicle fleets by investigating technology insertions including, but not limited to: Predictive Logistics, vetronics, transportability of tactical wheeled vehicle equipment, vehicle electrification, fully autonomous operations, and other emerging technologies. Funding also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.						
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		28.445	50.924	27.866	-	27.866
Current President's Budget		27.406	53.014	44.197	-	44.197
Total Adjustments		-1.039	2.090	16.331	-	16.331
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-2.910			
• Congressional Rescissions		-	-			
• Congressional Adds		-	5.000			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-1.039	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	16.331	-	16.331
Congressional Add Details (\$ in Millions, and Includes General Reductions)					FY 2022	FY 2023
Project: 659: Family Of Hvy Tac Veh						
Congressional Add: HTV Winter Tires					-	5.000
Congressional Add Subtotals for Project: 659					-	5.000
Congressional Add Totals for all Projects					-	5.000
Change Summary Explanation						
FY 2024 decrease in EZ8 Leader / Follower due to completion of Operational Technology Demonstration activities in FY 2023. FY 2024 increase in DG7 due to increase in Common Tactical Truck prototype vendors.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
659: Family Of Hvy Tac Veh	-	4.896	24.089	7.232	-	7.232	4.596	11.266	16.038	11.011	0.000	79.128
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Heavy Tactical Vehicles (HTV) Predictive Logistics (PL) Development enables the Tactical Wheeled Vehicle fleet to transition from time-based/conditioned-based maintenance to the ability to act prior to materiel failure; conserves combat power for the battlefield commander.												
Heavy Tactical Vehicles Winter Tire effort develops a winter tire for improved mobility in snow and ice for Heavy Tactical Vehicles (Heavy Expanded Mobility Tactical Truck, Palletized Load System, Heavy Equipment Transporter), in Northern & Arctic Regions.												
The Common Tactical Truck (CTT) is a Family of Vehicles (FoV) modernization effort to replace the Line Haul, HEMTT, PLS, Line Haul and M1088 vehicles by leveraging the best commercial practices, lower procurement cost (commercial economies of scale) and technology to include Predictive Logistics, Advanced Driver Assistance Systems (ADAS), and autonomy ready without significantly degrading the performance from current platforms. The total cost of the CTT Middle Tier of Acquisition effort is \$60.000 million RDT&E from FY23 to FY26. The remainder of the CTT Program is fully funded across the Future Years Defense Program.												
FY 2024 Project 659 Base funds in the amount of \$7.232 million supports Predictive Logistics (PL) development for Heavy Tactical Vehicles. The PL Development effort provides Heavy Tactical Vehicles with Engineer Change Proposals (ECPs) that will enhance fleet readiness and help to overcome the effects obsolescence.												
Matrix Functional Support is required to address/augment Engineering and Logistic functions, capabilities and gaps to supplement core employee competencies. System Engineering oversight and multiple functions of Logistics support such as management, fielding, tracking and documentation is required during the acquisition process.												
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), these items are necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Common Tactical Truck (CTT) Non-Recurring Engineering									3.887	0.435	-	
Description: Middle Tier Acquisition is being considered for rapid prototyping, including designs by multiple vendors for replacement of the M915 Tractor, Palletized Loading System (PLS) and Heavy Expanded Mobility Tactical Truck (HEMTT).												
FY 2023 Plans: Funds will be used for non-recurring engineering for the development of Common Tactical Truck prototypes.												
FY 2023 to FY 2024 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles	Project (Number/Name) 659 / Family Of Hvy Tac Veh	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Decision was made to go from 3 to 4 vendors for CTT and the increase in FY 2023 is to cover an additional vendor.			FY 2024
Title: Common Tactical Truck (CTT) Prototype Manufacturing Description: Middle Tier Acquisition is being considered for rapid prototyping, including designs by multiple vendors for replacement of the M915 Tractor, Palletized Loading System (PLS) and Heavy Expanded Mobility Tactical Truck (HEMTT). FY 2023 Plans: Funds will be used for the competitive acquisition of Common Tactical Truck prototypes in preparation for test and down-select. FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 decrease due to the transfer of CTT funding to proj DG7		-	12.300
Title: Common Tactical Truck (CTT) Matrix Functional Support Description: Matrix Functional Support is required to address/augment Engineering and Logistic functions, capabilities and gaps to supplement core employee competencies. FY 2023 Plans: Funds will be used for CTT Matrix Functional Support to provide engineering and logistics functions through the prototyping process. FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 decrease due to the transfer of CTT funding to proj DG7		1.009	2.920
Title: Common Tactical Truck (CTT) Test Planning Development Description: The CTT Prototype Testing and Soldier Touch Points will determine which vendor's prototype meets the program's desired characteristics such as Digitization and Autonomy Ready. FY 2023 Plans: Funds will be used for test planning development to ensure testing will begin on schedule. FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 begins CTT Prototype Testing and Soldier Assessment.		-	1.527
Title: Common Tactical Truck (CTT) Requirements Framing Analysis FY 2023 Plans: Funds will be used for Requirements Framing Analysis (RFA) report. FY 2023 to FY 2024 Increase/Decrease Statement:		-	0.430

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles		Project (Number/Name) 659 / Family Of Hvy Tac Veh
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
FY 2023 completes the Requirements Framing Analysis				
<p>Title: Predictive Logistics (PL) Development</p> <p>Description: Development of PL Engineer Change Proposals (ECPs) to enable the Tactical Wheeled Vehicle fleet to transition from time-based/conditioned-based maintenance to the ability to act prior to material failure.</p> <p>FY 2023 Plans: Begins the development of Engineer Change Proposals (ECPs) for the Digital Source Collector Ruggedized (DSCR), Operator Support Device (OSD), and Digital Logbook (DLB) applications.</p> <p>FY 2024 Plans: Development of Engineer Change Proposals (ECPs) for the Digital Source Collector Ruggedized (DSCR), Operator Support Device (OSD), and Digital Logbook (DLB) applications.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 continues the Predictive Logistics ECP development effort.</p>		-	0.560	2.007
<p>Title: HTV Matrix Functional Support</p> <p>FY 2023 Plans: Funding required for the functional matrix support for HTV efforts.</p> <p>FY 2024 Plans: Funding required in FY24 for functional matrix support for HTV efforts</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: FY24 increased due to economic adjustment</p>		-	0.220	0.225
<p>Title: Predictive Logistics - Rapid Sustainment Improvement Process (RSIP)</p> <p>Description: Rapid Sustainment Improvement Process (RSIP) is used for projects and processes that can improve current sustainment throughout the Department of Defense, including, Capturing information from sensors already on the vehicles, assist with the accurate analysis for system usage, assessing the actual health of the fleet and accurate life cycle cost reporting.</p> <p>FY 2024 Plans: FY 2024 funds implements the Rapid Sustainment Improvement Process (RSIP) for predictive logistics in support of the HEMTT and PLS programs.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>		-	-	5.000

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) 659 / Family Of Hvy Tac Veh				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
FY 2024 begins the RSIP effort for predictive logistics in support of the HEMTT and PLS programs.												
Title: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)										-	0.697	-
Description: Funding transferred in accordance with Title 15 USC §638												
FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638												
Accomplishments/Planned Programs Subtotals										4.896	19.089	7.232
										FY 2022	FY 2023	
Congressional Add: HTV Winter Tires										-	5.000	
FY 2023 Plans: Development, prototype builds, and testing of advanced tire technology.												
Congressional Adds Subtotals										-	5.000	
C. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• DA0924: Modification Of In Svc Equip	212.349	140.869	80.326	-	80.326	173.717	240.489	307.662	308.074	Continuing	Continuing	
• DA0500: Family Of Heavy Tactical Vehicles (FHTV)	186.643	239.612	66.428	-	66.428	83.265	66.766	70.338	66.283	0.000	779.335	
Remarks DA0924 - Modification Of In Svc Equip and DA0500 - Family of Heavy Tactical Vehicles are shared funding lines with other product offices												
D. Acquisition Strategy The Common Tactical Truck (CTT) Family of Vehicles (FoVs) is a modernization effort to replace the Line Haul, HEMTT, PLS, and M1088 vehicles. The CTT has an approved Abbreviated Capability Development Document (A-CDD) and has been approved to pursue the Middle-Tier of Acquisition Rapid Prototyping pathway with a transition to Major Capability Acquisition for Low-Rate Initial production. The rapid prototyping effort will be executed as a competitive OTA, awarded to four offerors to deliver three prototypes and three digital designs/studies. The Soldier Touch Points and prototype assessments will inform the Capability Development Document (CDD).												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles	Project (Number/Name) 659 / Family Of Hvy Tac Veh
<p>The strategy to develop, integrate and test Predictive Logistics technologies is to leverage existing capabilities developed commercially and adapt for military use on the tactical wheeled vehicle fleet. Development and testing will be conducted by the U.S. Army Capabilities Development Command and ECPs will be integrated by the vehicle Original Equipment Manufacturers.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) 659 / Family Of Hvy Tac Veh			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR	TBD	Various : Various	-	-		0.697	Jan 2023	-		-		-	0.000	0.697	-
Subtotal			-	-		0.697		-		-		-	0.000	0.697	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTT Non-Recurring Engineering	C/IDIQ	Various : Various	-	3.887	Jan 2023	0.435	Jan 2023	-		-		-	0.000	4.322	-
CTT Prototype Manufacturing	C/IDIQ	Various : Various	-	-		12.300	Jul 2023	-		-		-	0.000	12.300	-
PL Development	TBD	TBD : TBD	-	-		0.875	Jun 2023	2.007	Jan 2024	-		2.007	Continuing	Continuing	-
HTV Winter Tires	TBD	National Center for Manufacturing Sciences Commercial Technologies for Maintenance : Michigan	-	-		2.100	Apr 2023	-		-		-	0.000	2.100	-
PL - Rapid Sustainment Improvement Process (RSIP)	TBD	TBD : TBD	-	-		-		5.000	Jan 2024	-		5.000	Continuing	Continuing	-
Subtotal			-	3.887		15.710		7.007		-		7.007	Continuing	Continuing	N/A
Remarks CTT Non-Recurring Engineering and Prototype Manufacturing awarded to four vendors: Mack Defense, Navistar Defense, American Rheinmetall Vehicles, Oshkosh															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) 659 / Family Of Hvy Tac Veh			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTT Acquisition Planning and Document Development	MIPR	TACOM LCMC : Warren, MI	1.007	-		-		-		-		-	0.000	1.007	-
CTT Matrix Functional Support	MIPR	TACOM LCMC : Warren, MI	-	1.009	Dec 2021	2.920	Jan 2023	-		-		-	0.000	3.929	-
Requirement Frame Analysis (RFA) report	MIPR	Ft. Leavenworth, MD : Ft. Leavenworth, MD	-	-		0.430	Mar 2023	-		-		-	0.000	0.430	-
PdM HTV Matrix Functional Support	MIPR	TACOM, LCMC : Warren, MI	-	-		0.220	Mar 2023	0.225	Mar 2024	-		0.225	Continuing	Continuing	-
HTV Winter Tires Support Cost	TBD	TACOM, LCMC : Warren, MI	-	-		1.579	Jul 2023	-		-		-	0.000	1.579	-
Subtotal			1.007	1.009		5.149		0.225		-		0.225	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTT Test Planning Development	MIPR	Aberdeen Test Center (ATC) : Aberdeen, MD	-	-		1.212	Aug 2023	-		-		-	0.000	1.212	-
HTV Winter Tires Testing	TBD	Gound Vehicle Systems Center, Michigan Technological University : Michigan	-	-		1.321	Jul 2023	-		-		-	0.000	1.321	-
Subtotal			-	-		2.533		-		-		-	0.000	2.533	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.007	4.896		24.089		7.232		-		7.232	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army							Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles			Project (Number/Name) 659 / Family Of Hvy Tac Veh			
	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

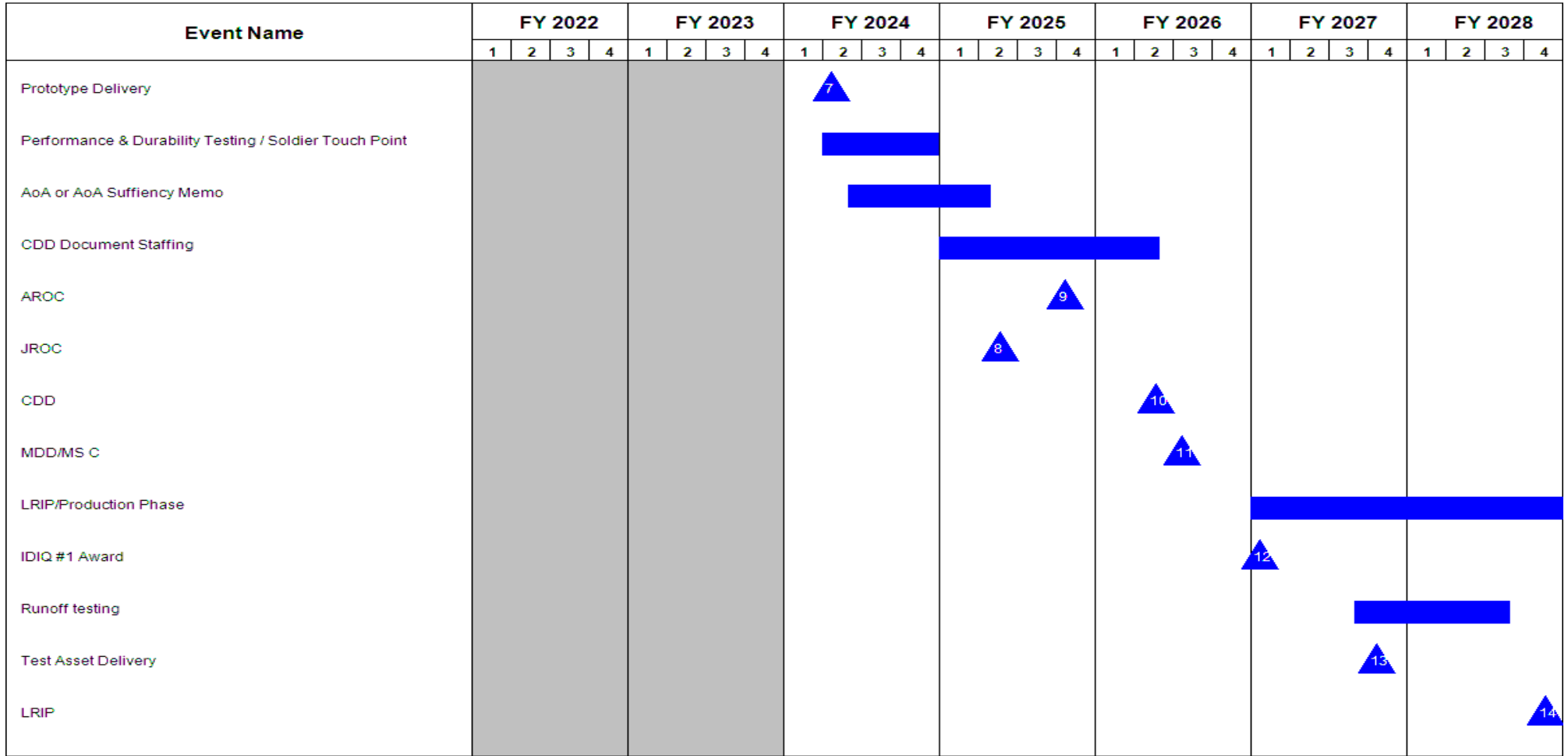
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles		Project (Number/Name) 659 / Family Of Hvy Tac Veh	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
PL Development																												
PL ECP Development																												
PL ECP Production																												
Common Tactical Truck (CTT)																												
A-CDD																												
ASP #1																												
ASP #2																												
OTA #1 RPP																												
RFA, Trade-Space Analysis, CDD Development																												
OTA #1 Award																												
DP MTA-RP Entry																												
MS C Documentation																												
Test Plan Development																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles		Project (Number/Name) 659 / Family Of Hvy Tac Veh	



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

Date: March 2023

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2040 / 5

R-1 Program Element (Number/Name)

PE 0604622A / Family of Heavy Tactical V
ehicles

Project (Number/Name)	Start Date	End Date	Duration (Days)	Actual Cost	Budgeted Cost	Variance	Cost Index	Performance Index	Cost Variance	Cost Performance	Cost Variance	Cost Performance
1	1/1/2020	1/31/2020	31	10000	10000	0	1.0	1.0	0	1.0	0	1.0
2	2/1/2020	2/28/2020	28	15000	15000	0	1.0	1.0	0	1.0	0	1.0
3	3/1/2020	3/31/2020	31	20000	20000	0	1.0	1.0	0	1.0	0	1.0
4	4/1/2020	4/30/2020	30	25000	25000	0	1.0	1.0	0	1.0	0	1.0
5	5/1/2020	5/31/2020	31	30000	30000	0	1.0	1.0	0	1.0	0	1.0
6	6/1/2020	6/30/2020	30	35000	35000	0	1.0	1.0	0	1.0	0	1.0
7	7/1/2020	7/31/2020	31	40000	40000	0	1.0	1.0	0	1.0	0	1.0
8	8/1/2020	8/31/2020	31	45000	45000	0	1.0	1.0	0	1.0	0	1.0
9	9/1/2020	9/30/2020	30	50000	50000	0	1.0	1.0	0	1.0	0	1.0
10	10/1/2020	10/31/2020	31	55000	55000	0	1.0	1.0	0	1.0	0	1.0
11	11/1/2020	11/30/2020	30	60000	60000	0	1.0	1.0	0	1.0	0	1.0
12	12/1/2020	12/31/2020	31	65000	65000	0	1.0	1.0	0	1.0	0	1.0
13	1/1/2021	1/31/2021	31	70000	70000	0	1.0	1.0	0	1.0	0	1.0
14	2/1/2021	2/28/2021	28	75000	75000	0	1.0	1.0	0	1.0	0	1.0
15	3/1/2021	3/31/2021	31	80000	80000	0	1.0	1.0	0	1.0	0	1.0
16	4/1/2021	4/30/2021	30	85000	85000	0	1.0	1.0	0	1.0	0	1.0
17	5/1/2021	5/31/2021	31	90000	90000	0	1.0	1.0	0	1.0	0	1.0
18	6/1/2021	6/30/2021	30	95000	95000	0	1.0	1.0	0	1.0	0	1.0
19	7/1/2021	7/31/2021	31	100000	100000	0	1.0	1.0	0	1.0	0	1.0
20	8/1/2021	8/31/2021	31	105000	105000	0	1.0	1.0	0	1.0	0	1.0
21	9/1/2021	9/30/2021	30	110000	110000	0	1.0	1.0	0	1.0	0	1.0
22	10/1/2021	10/31/2021	31	115000	115000	0	1.0	1.0	0	1.0	0	1.0
23	11/1/2021	11/30/2021	30	120000	120000	0	1.0	1.0	0	1.0	0	1.0
24	12/1/2021	12/31/2021	31	125000	125000	0	1.0	1.0	0	1.0	0	1.0
25	1/1/2022	1/31/2022	31	130000	130000	0	1.0	1.0	0	1.0	0	1.0
26	2/1/2022	2/28/2022	28	135000	135000	0	1.0	1.0	0	1.0	0	1.0
27	3/1/2022	3/31/2022	31	140000	140000	0	1.0	1.0	0	1.0	0	1.0
28	4/1/2022	4/30/2022	30	145000	145000	0	1.0	1.0	0	1.0	0	1.0
29	5/1/2022	5/31/2022	31	150000	150000	0	1.0	1.0	0	1.0	0	1.0
30	6/1/2022	6/30/2022	30	155000	155000	0	1.0	1.0	0	1.0	0	1.0
3												

659 / Family Of Hvy Tac Veh

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028							
	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				
HTV Winter Tire																																
HTV Winter Tire Testing									Test and Development																							

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army

Date: March 2023

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604622A / Family of Heavy Tactical Vehicles

Project (Number/Name)

659 / Family Of Hvy Tac Veh

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PL Development	1	2024	4	2027
PL ECP Development	1	2024	4	2027
PL ECP Production	2	2026	4	2028
Common Tactical Truck (CTT)	1	2021	4	2027
A-CDD	2	2022	2	2022
ASP #1	2	2022	2	2022
ASP #2	3	2022	3	2022
OTA #1 RPP	3	2022	3	2022
RFA, Trade-Space Analysis, CDD Development	4	2022	3	2025
OTA #1 Award	2	2023	2	2023
DP MTA-RP Entry	2	2023	2	2023
MS C Documentation	3	2023	2	2026
Test Plan Development	4	2023	1	2024
Prototype Delivery	2	2024	2	2024
Performance & Durability Testing / Soldier Touch Point	2	2024	4	2024
AoA or AoA Sufficiency Memo	2	2024	2	2025
CDD Document Staffing	1	2025	2	2026
AROC	4	2025	4	2025
JROC	2	2025	2	2025
CDD	2	2026	2	2026
MDD/MS C	3	2026	3	2026
LRIP/Production Phase	1	2027	4	2029

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles	Project (Number/Name) 659 / Family Of Hvy Tac Veh		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) DG7 / Common Tactical Truck			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
DG7: Common Tactical Truck	-	-	-	23.905	-	23.905	-	-	-	-	0.000	23.905
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note												
Project DG7 / Common Tactical Truck (CTT) is not a new start effort in Fiscal Year (FY) 2024. The execution for this effort was previously tracked on 0604622A / Family of Heavy Tactical Vehicles - Project Number 659. Out-year funding for CTT is also captured on Project Number 659, but will be transferred to project DG7 before the next budget cycle.												
A. Mission Description and Budget Item Justification												
The Common Tactical Truck (CTT) is a Family of Vehicles (FoV) modernization effort to replace the Line Haul, HEMTT, PLS, and M1088 vehicles by leveraging the best commercial practices, lower procurement cost (commercial economies of scale) and technology to include Predictive Logistics, Advanced Driver Assistance Systems (ADAS), and autonomy ready without significantly degrading the performance from current platforms.												
FY 2024 Project DG7 Base funds in the amount of \$23.905 million supports the award of the third phase of the OTA Award as well as the CTT Prototype Testing and Soldier Assessment. The CTT Prototype Testing and Soldier Assessment will determine which vendors bring the best value to the government while meeting the CTT requirement. The CTT supports the National Defense Strategy for modernization by providing the warfighter the updated transportation technologies that are aligned with what is available in the marketplace.												
The total cost of the CTT Middle Tier of Acquisition effort is \$60.000 million RDT&E from FY23 to FY26. The remainder of the CTT Program is fully funded across the Future Years Defense Program.												
Matrix Functional Support is required to address/augment Engineering and Logistic functions, capabilities and gaps to supplement core employee competencies. System Engineering oversight and multiple functions of Logistics support such as management, fielding, tracking and documentation is required during the acquisition process.												
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), these items are necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: CTT Prototype Manufacturing									-	-	8.170	
FY 2024 Plans: Funding for phase three of OTA award.												
FY 2023 to FY 2024 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>	Project (Number/Name) DG7 / <i>Common Tactical Truck</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Funding for CTT realigned to project DG7 starting in FY24.			
Title: CTT Matrix Functional Support FY 2024 Plans: Funding for CTT matrix functional support. FY 2023 to FY 2024 Increase/Decrease Statement: Funding for CTT realigned to project DG7 starting in FY24.		-	-
Title: CTT Prototype Testing FY 2024 Plans: Funding used for the testing of the CTT prototypes from the four vendors. FY 2023 to FY 2024 Increase/Decrease Statement: Funding for CTT realigned to project DG7 starting in FY24.		-	-
Title: CTT Soldier Assessment FY 2024 Plans: Funding for the Soldier assessment of the CTT prototypes. FY 2023 to FY 2024 Increase/Decrease Statement: Funding for CTT realigned to project DG7 starting in FY24.		-	-
Accomplishments/Planned Programs Subtotals		-	-
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
The Common Tactical Truck (CTT) Family of Vehicles (FoVs) is a modernization effort to replace the Line Haul, HEMTT, PLS, and M1088 vehicles. The CTT has an approved Abbreviated Capability Development Document (A-CDD) and has been approved to pursue the Middle-Tier of Acquisition Rapid Prototyping pathway with a transition to Major Capability Acquisition for Low-Rate Initial production. The rapid prototyping effort will be executed as a competitive OTA, awarded to four offerors to deliver three prototypes and three digital designs/studies. The Soldier Touch Points and prototype assessments will inform the Capability Development Document (CDD).			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) DG7 / Common Tactical Truck			
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTT Prototype Manufacturing	C/IDIQ	TBD : TBD	-	-		-		8.170	Dec 2023	-		8.170	0.000	8.170	-
Subtotal			-	-		-		8.170		-		8.170	0.000	8.170	N/A
Remarks CTT Non-Recurring Engineering and Prototype Manufacturing awarded to four vendors: Mack Defense, Navistar Defense, American Rheinmetall Vehicles, Oshkosh															
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Functional Support	MIPR	TACOM LCMP : Warren, MI	-	-		-		3.860	Jan 2024	-		3.860	0.000	3.860	-
Subtotal			-	-		-		3.860		-		3.860	0.000	3.860	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CTT Prototype Testing	MIPR	U.S. Army Test Center : Aberdeen, MD	-	-		-		9.609	Feb 2024	-		9.609	0.000	9.609	-
CTT Soldier Assessment	MIPR	Aberdeen Test Center : ATC, MD	-	-		-		2.266	May 2024	-		2.266	0.000	2.266	-
Subtotal			-	-		-		11.875		-		11.875	0.000	11.875	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		-		23.905		-		23.905	0.000	23.905	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles	Project (Number/Name) DG7 / Common Tactical Truck	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
A-CDD		1																										
ASP #1		2																										
ASP #2			3																									
OTA #1 RPP				4																								
RFA, Trade-Space Analysis, CDD Development																												
OTA #1 Award							5																					
DP MTA-RP Entry							6																					
MS C Documentation																												
Test Plan Development																												
Prototype Delivery												7																
Performance & Durability Testing / Solider Touch Points																												
AoA or AoA Sufficiency Memo																												
CDD Document Staffing																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles		Project (Number/Name) DG7 / Common Tactical Truck	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
AROC																8												
JROC																			9									
CDD																			10									
MDD/MS C																			11									
LRIP/Production Phase																												
IDIQ #1 Award																					12							
Runoff Testing																												
Test Asset Delivery																												
LRIP																												14

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>	Project (Number/Name) DG7 / <i>Common Tactical Truck</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
A-CDD	2	2022	2	2022
ASP #1	2	2022	2	2022
ASP #2	3	2022	3	2022
OTA #1 RPP	3	2022	3	2022
RFA, Trade-Space Analysis, CDD Development	4	2022	3	2025
OTA #1 Award	2	2023	2	2023
DP MTA-RP Entry	2	2023	2	2023
MS C Documentation	3	2023	2	2026
Test Plan Development	4	2023	1	2024
Prototype Delivery	2	2024	2	2024
Performance & Durability Testing / Solider Touch Points	2	2024	4	2024
AoA or AoA Sufficiency Memo	2	2024	2	2025
CDD Document Staffing	1	2025	2	2026
AROC	4	2025	4	2025
JROC	2	2026	2	2026
CDD	2	2026	2	2026
MDD/ MS C	3	2026	3	2026
LRIP/Production Phase	1	2027	4	2029
IDIQ #1 Award	1	2027	1	2027
Runoff Testing	3	2027	3	2028
Test Asset Delivery	4	2027	4	2027
LRIP	4	2028	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) E50 / TRAILER DEVELOPMENT			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
E50: TRAILER DEVELOPMENT	-	2.862	0.737	-	-	-	-	-	-	-	0.000	3.599
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Medium Equipment Trailer (MET) provides critical layered, agile and responsive sustainment capability required for Large Scale Combat Operations (LSCO). The MET supports Multi-Domain Operations (MDO) with the ability to maneuver across strategic distances by providing intermediate weight combat vehicles transportation for a competitive advantage. The MET will be assigned to Heavy Equipment Transporter Systems (HETS) Companies and Composite Truck Companies- Heavy (CTC-H) to expeditiously move Combat Tracked Vehicles such as the Bradley Fighting Vehicle, Armored Multi-Purpose Vehicles (AMPV), Paladin and Field Artillery Ammunition Support Vehicles (FAASV) with a threshold of up to 60 tons and an objective to meet up to 70 tons while also obtaining North Atlantic Treaty Organization (NATO) road permits with a 45 ton payload. The MET will also be capable of transporting vehicles at the OCONUS standard minimum bridge and underpass clearance of 157.5 inches (4 meters).												
There are no FY 2024 Project E50 requirements.												
In accordance with Section 1815 of the FY 2008 National Defense Authorization Act (P.L. 110-181), this item is necessary for use by the active and reserve components of the Armed Forces for homeland defense missions, domestic emergency responses, and providing military support to civil authorities.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Medium Equipment Trailer (MET) Prototype Testing and Soldier Assessment									2.510	0.710	-	
Description: MET prototypes will be tested to determine which trailer provides the best value to the Government while meeting the MET requirement. To assist in determining the best value to the Government, a Soldier touch point will also be a part of the evaluation. The best value determination will be used to support a follow on production contract.												
FY 2023 Plans: Completion of the MET Prototype Competitive Run-off Testing and Soldier Assessment.												
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 completes MET Testing.												
Title: Functional Matrix Support									0.352	-	-	
Title: SIBR/STTR									-	0.027	-	
Description: SIBR/STTR Transfer												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) E50 / TRAILER DEVELOPMENT			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2022	FY 2023	FY 2024	
FY 2023 Plans: SIBR/STTR Transfer											
FY 2023 to FY 2024 Increase/Decrease Statement: SIBR/STTR Transfer for FY23											
Accomplishments/Planned Programs Subtotals								2.862	0.737	-	
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• DA0926: MODIFICATION APPLICATION	11.710	13.070	26.717	-	26.717	98.556	144.206	189.782	189.944	0.000	673.985
• D08921: MEDIUM EQUIPMENT TRAILER (MET)	-	20.265	41.639	-	41.639	62.527	61.913	61.833	62.632	0.000	310.809
Remarks											
D. Acquisition Strategy											
The Acquisition Strategy is to execute the MET as a competitive Other Transaction Agreement (OTA) awarded to two Original Equipment Manufacturers (OEMs). The OEMs will provide three prototypes per vendor in preparation to test and down-select to one vendor for follow-on production.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) E50 / TRAILER DEVELOPMENT			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Functional Support	MIPR	TACOM LCMC : Warren, MI	-	0.352	Jan 2023	-		-		-		-	0.000	0.352	-
SIBR/STTR	TBD	Various : Various	-	-		0.027		-		-		-	0.000	0.027	-
Subtotal			-	0.352		0.027		-		-		-	0.000	0.379	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MET Prototype Testing	MIPR	Aberdeen Test Center (ATC) : Abderdeen, MD	-	2.510	Jun 2022	0.710	Apr 2023	-		-		-	0.000	3.220	-
Subtotal			-	2.510		0.710		-		-		-	0.000	3.220	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	2.862		0.737		-		-		-	0.000	3.599	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles		Project (Number/Name) E50 / TRAILER DEVELOPMENT	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Medium Equipment Trailer (MET)																												
MET Other Transaction Agreement (OTA) Award																												
MET Prototype Manufacturing																												
MET Competitive Run-off Test																												
MET OTA Down Select																												
MET Milestone C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles	Project (Number/Name) E50 / TRAILER DEVELOPMENT	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Medium Equipment Trailer (MET)	1	2022	4	2023
MET Materiel Development Decision	2	2021	2	2021
MET Request Prototype Proposal (RPP)	3	2021	3	2021
MET Other Transaction Agreement (OTA) Award	1	2022	1	2022
MET Prototype Manufacturing	1	2022	4	2022
MET Competitive Run-off Test	1	2023	3	2023
MET OTA Down Select	3	2023	3	2023
MET Milestone C	4	2023	4	2023

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) EZ8 / Leader/Follower			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
EZ8: Leader/Follower	-	19.648	28.188	13.060	-	13.060	13.834	23.193	22.996	38.994	0.000	159.913
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
The Leader Follower (LF) funding line supports the Autonomous Transport Vehicle-System (ATV-S) effort that equips Tactical Wheeled Vehicles with autonomous behaviors. Additionally, the capability gives convoy commanders flexibility to leverage the six levels of automated driving that range from Level 0 (Fully Manual) to Level 5 (Fully Autonomous), and any combination therein to conduct convoy operations. Autonomous driving behaviors enables increased operational efficiency of tactical wheeled vehicles resulting in an increase of sustainment throughput while reducing Soldier exposure to hostile threats.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Tactical Wheeled Vehicle Leader Follower (Autonomous Transport Vehicle-System)									19.648	27.159	13.060	
Description: Leader Follower (Autonomous Transport Vehicle-System program) equips Tactical Wheeled Vehicles with autonomous behaviors to reduce Soldier risk and increase convoy throughput.												
FY 2023 Plans: FY 2023 funds support the ongoing Operation Technology Demonstration (OTD) and associated close-out activities, to include contractor support to return supplied OTD vehicles to their deployable configuration. FY 2023 funds also support the development of acquisition pathway documentation, solicitation development, continued development of Government owned software to be provided as part of the solicitation, source selection and award for test and evaluation assets.												
FY 2024 Plans: FY 2024 funds agile software development for additional autonomous behaviors, configuration management, competitive demonstration & evaluation, and logistics activities.												
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2023 to FY 2024 decrease in funding results from the OTD closeout.												
Title: SBIR/STTR Transfer									-	1.029	-	
Description: Funding transferred in accordance with Title 15 USC §638												
FY 2023 Plans: SBIR / STTR												
FY 2023 to FY 2024 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles				Project (Number/Name) EZ8 / Leader/Follower				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
FY 2023 funding captures SBIR / STTR reduction.												
Accomplishments/Planned Programs Subtotals										19.648	28.188	13.060
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• R06806: Leader/ Follower Applique (L/F)	-	-	0.438	-	0.438	0.576	1.231	1.218	1.219	0.000	4.682	
Remarks												
D. Acquisition Strategy												
The Leader Follower (Autonomous Transport Vehicle-System (ATV-S) program) strategy involves transitioning a Science & Technology project to equip tactical wheeled vehicles with autonomous behaviors. The ATV-S program is pursuing a Middle Tier of Acquisition (MTA) Rapid Prototyping pathway to compete solutions, down select to a single contractor, and build demonstration prototypes to gain operational feedback. The Government will be conducting agile software development with the awarded contractor to increase capability throughout the planned MTA effort.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles						Project (Number/Name) EZ8 / Leader/Follower			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LF / ATV-S Program Management	Allot	PM FP : Warren, MI; Harrison Twp, MI	2.635	1.450	Oct 2021	2.750	Oct 2022	1.833	Oct 2023	-		1.833	0.000	8.668	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		1.029		-		-		-	0.000	1.029	-
Subtotal			2.635	1.450		3.779		1.833		-		1.833	0.000	9.697	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Technology Demonstration, Maturation, And Close Out	C/CPFF	Multiple : Various	-	15.883	Feb 2022	6.525	Apr 2023	-		-		-	0.000	22.408	-
Prototyping Competition Award	C/CPFF	Multiple : Various	-	-		4.150	Aug 2023	5.435	Nov 2023	-		5.435	0.000	9.585	-
Subtotal			-	15.883		10.675		5.435		-		5.435	0.000	31.993	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech Support	MIPR	GVSC, TACOM : Warren, MI	1.634	0.791	Oct 2021	12.984	Oct 2022	5.042	Oct 2023	-		5.042	0.000	20.451	-
Subtotal			1.634	0.791		12.984		5.042		-		5.042	0.000	20.451	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	MIPR	ATEC : Aberdeen, MD	3.653	1.524	Apr 2022	0.750	Feb 2023	0.750	Mar 2023	-		0.750	0.000	6.677	-
Subtotal			3.653	1.524		0.750		0.750		-		0.750	0.000	6.677	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army											Date: March 2023			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles					Project (Number/Name) EZ8 / Leader/Follower				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		7.922	19.648		28.188		13.060		-		13.060	0.000	68.818	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604622A / Family of Heavy Tactical Vehicles		Project (Number/Name) EZ8 / Leader/Follower	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Operational Technology Demonstration (OTD)																												
OTD																												
OTD Close Out Award																												
OTD Close Out																												
Agile Software Development and Configuration Management																												
Acquisition Pathway Initiation																												
Prototyping Award																												
Build and Integrate Test Assets																												
Demonstration and Evaluation / Downselect																												
Test and Evaluation / Downselect																												
Award Demonstration Prototypes																												
Build Demonstration Prototypes																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604622A / <i>Family of Heavy Tactical Vehicles</i>	Project (Number/Name) EZ8 / <i>Leader/Follower</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Operational Technology Demonstration (OTD)	1	2022	4	2023
OTD Close Out Award	3	2023	3	2023
OTD Close Out	3	2023	3	2024
Agile Software Development and Configuration Management	1	2023	4	2028
Acquisition Pathway Initiation	4	2023	4	2023
Prototyping Award	4	2023	4	2023
Build and Integrate Test Assets	1	2024	4	2024
Demonstration and Evaluation / Downselect	4	2024	2	2025
Test and Evaluation / Downselect	3	2025	4	2025
Award Demonstration Prototypes	1	2026	1	2026
Build Demonstration Prototypes	1	2026	4	2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604633A / <i>Air Traffic Control</i>							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	4.244	2.623	1.134	-	1.134	1.005	0.552	0.557	0.564	0.000	10.679
586: <i>Air Traffic Control</i>	-	4.244	2.623	1.134	-	1.134	1.005	0.552	0.557	0.564	0.000	10.679

A. Mission Description and Budget Item Justification

Program Element (PE) 0604633A Air Traffic Control funds continuous efforts in the development of modernized tactical Air Traffic Control (ATC) systems that enable safety of aircraft operations. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international ATC mandates and combat identification requirements.

The Tactical Airspace Integration System (TAIS) is the Army's program of record for Airspace Control (AC) and enroute Air Traffic Services (ATS). TAIS provides Airspace Management, planning, and dynamic execution capabilities at all echelons above Brigade, and enroute flight following air traffic services. TAIS is the only Army system with direct interface to the U.S. Air Force Air Operations Center (AOC) Weapon System for submission of the Army's requests for airspace from the Battlefield Coordination Detachment (BCD). Airspace Coordinating Measure Requests (ACMREQs) received from other mission command systems are passed to TAIS for approval or higher coordination. TAIS software supports U.S. Army commanders, airspace users, airspace managers, Army air traffic controllers, Joint organizations, and Unified Action Partners (UAP) by providing digitized, multi-echelon planning and execution of airspace management and Air Traffic Services. TAIS provides AC planning and enhanced AC execution; improved theater, intra-, and inter-Corps/Division Air Traffic Services (ATS) support; effective battlespace synchronization; and direct links to the Theater Air Ground System (TAGS) through interface with the automated airspace planning and communications systems of the Joint Force Air Component Commander (JFACC).

TAIS Common Operating Environment (COE) convergence to Integrated Mission Planning and Airspace Control Tools (IMPACT) will provide interoperability with Army Mission Command, Joint, and UAP systems. This will facilitate AC capabilities, enhance situational understanding, reduce risks, and provide more effective Air-Ground Integration to enable Multi-Domain Operations (MDO), Joint All Domain Operations (JADO), and Joint All Domain Command and Control (JADC2). IMPACT will be instantiated across Command Post Computing Environment (CE), Mounted CE, and Mobile/Handheld CE and will extend AC services to the tactical edge.

TAIS/IMPACT will leverage Air Space Total Awareness for Rapid Tactical Execution (ASTARTE) technology. ASTARTE provides artificial intelligence and machine learning algorithms which will allow IMPACT to achieve more rapid synchronization of airspace planning and dynamic execution. This will enable commanders to maximize airspace usage, increase freedom of maneuver in the 3rd dimension, enhance safety and fratricide prevention, and enable seamless integration / deconfliction of fires and aviation operations in highly congested and complex environments during Large Scale Combat Operations (LSCO).

The Air Traffic Navigation Integration and Coordination System (ATNAVICS) is a highly mobile Airport Surveillance Radar and Precision Approach Radar system that provides Air Traffic Services at Army airfields and landing sites at Division, Corps, and Echelons above Corps to include services for Joint and Allied aircraft. ATNAVICS integrates capabilities to control aircraft both Outside of the Continental United States and in the Continental United States. ATNAVICS is upgrading the Interrogation Identification Friend-or-Foe (IFF) system to maintain international airspace compatibility, capture flight information through the reception of aircraft self-reporting data broadcasts, and process into an interconnected air picture.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)		PE 0604633A I Air Traffic Control			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	4.405	2.623	1.158	-	1.158
Current President's Budget	4.244	2.623	1.134	-	1.134
Total Adjustments	-0.161	0.000	-0.024	-	-0.024
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.161	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.024	-	-0.024
Change Summary Explanation					
Decreased funding to support higher Army priorities.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control				Project (Number/Name) 586 / Air Traffic Control			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
586: Air Traffic Control	-	4.244	2.623	1.134	-	1.134	1.005	0.552	0.557	0.564	0.000	10.679
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tactical Airspace Integration System (TAIS) is the Army's program of record for Airspace Control (AC) and enroute Air Traffic Services (ATS). TAIS provides Airspace Management, planning, and dynamic execution capabilities at all echelons above Brigade, and enroute flight following air traffic services. TAIS is the only Army system with direct interface to the U.S. Air Force Air Operations Center (AOC) Weapon System for submission of the Army's requests for airspace from the Battlefield Coordination Detachment (BCD). Airspace Coordinating Measure Requests (ACMREQs) received from other mission command systems are passed to TAIS for approval or higher coordination. TAIS software supports U.S. Army commanders, airspace users, airspace managers, Army air traffic controllers, Joint organizations, and Unified Action Partners (UAP) by providing digitized, multi-echelon planning and execution of airspace management and Air Traffic Services. TAIS provides AC planning and enhanced AC execution; improved theater, intra-, and inter-Corps/Division Air Traffic Services (ATS) support; effective battlespace synchronization; and direct links to the Theater Air Ground System (TAGS) through interface with the automated airspace planning and communications systems of the Joint Force Air Component Commander (JFACC).

TAIS Common Operating Environment (COE) convergence to Integrated Mission Planning and Airspace Control Tools (IMPACT) will provide interoperability with Army Mission Command, Joint, and UAP systems. This will facilitate AC capabilities, enhance situational understanding, reduce risks, and provide more effective Air-Ground Integration to enable Multi-Domain Operations (MDO), Joint All Domain Operations (JADO), and Joint All Domain Command and Control (JADC2). IMPACT will be instantiated across Command Post Computing Environment (CE), Mounted CE, and Mobile/Handheld CE and will extend AC services to the tactical edge.

TAIS/IMPACT will leverage Air Space Total Awareness for Rapid Tactical Execution (ASTARTE) technology. ASTARTE provides artificial intelligence and machine learning algorithms which will allow IMPACT to achieve more rapid synchronization of airspace planning and dynamic execution. This will enable commanders to maximize airspace usage, increase freedom of maneuver in the 3rd dimension, enhance safety and fratricide prevention, and enable seamless integration / deconfliction of fires and aviation operations in highly congested and complex environments during Large Scale Combat Operations (LSCO).

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

	FY 2022	FY 2023	FY 2024
Title: Tactical Airspace Integration System (TAIS)	4.244	2.527	1.134
Description: The Tactical Airspace Integration System (TAIS) is the Army's program of record for Airspace Control (AC) and enroute Air Traffic Services (ATS). TAIS provides Airspace Management, planning, and dynamic execution capabilities at all echelons above Brigade, and enroute flight following air traffic services. TAIS is the only Army system with direct interface to the U.S. Air Force Air Operations Center (AOC) Weapon System for submission of the Army's requests for airspace from the Battlefield Coordination Detachment (BCD). Airspace Coordinating Measure Requests (ACMREQs) received from other mission command systems are passed to TAIS for approval or higher coordination. TAIS software supports U.S. Army commanders, airspace users, airspace managers, Army air traffic controllers, Joint organizations, and Unified Action Partners (UAP) by			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control	Project (Number/Name) 586 / Air Traffic Control		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
<p>providing digitized, multi-echelon planning and execution of airspace management and Air Traffic Services. TAIS provides AC planning and enhanced AC execution; improved theater, intra-, and inter-Corps/Division Air Traffic Services (ATS) support; effective battlespace synchronization; and direct links to the Theater Air Ground System (TAGS) through interface with the automated airspace planning and communications systems of the Joint Force Air Component Commander (JFACC).</p> <p>TAIS Common Operating Environment (COE) convergence to Integrated Mission Planning and Airspace Control Tools (IMPACT) will provide interoperability with Army Mission Command, Joint, and UAP systems. This will facilitate AC capabilities, enhance situational understanding, reduce risks, and provide more effective Air-Ground Integration to enable Multi-Domain Operations (MDO), Joint All Domain Operations (JADO), and Joint All Domain Command and Control (JADC2). IMPACT will be instantiated across Command Post Computing Environment (CE), Mounted CE, and Mobile/Handheld CE and will extend AC services to the tactical edge.</p> <p>TAIS/IMPACT will leverage Air Space Total Awareness for Rapid Tactical Execution (ASTARTE) technology. ASTARTE provides artificial intelligence and machine learning algorithms which will allow IMPACT to achieve more rapid synchronization of airspace planning and dynamic execution. This will enable commanders to maximize airspace usage, increase freedom of maneuver in the 3rd dimension, enhance safety and fratricide prevention, and enable seamless integration / deconfliction of fires and aviation operations in highly congested and complex environments during Large Scale Combat Operations (LSCO).</p> <p>FY 2023 Plans: Continue with system development and testing to validate capabilities enabling Air-Ground Integration. Develop Integrated Mission Planning and Airspace Control Tools (IMPACT) to meet Capability Drop (CD) Operational Needs Requirements, Joint All Domain Command and Control (JADC2) Airspace Control (AC) capabilities and AC service extension using MCIS and Tactical Assault Kit (TAK) frameworks, plugins and services. Develop a solution to utilize common and enterprise services in all Computing Environments. Begin development for integration and direct machine interfaces to emerging Artificial Intelligence assisted decision making aids.</p> <p>FY 2024 Plans: Continue with IMPACT software development and testing to meet CD Operational Needs Requirements. Continue to develop JADC2 AC capabilities and AC service extension using MCIS and TAK frameworks, plugins, and services. Continue developing a solution to utilize common and enterprise services in all Computing Environments. Continue development for integration and direct machine interfaces to emerging Artificial Intelligence assisted decision making aids to leverage the Air Space Total Awareness for Rapid Tactical Execution (ASTARTE) technology.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY24 decrease reflects a reduction in TAIS software development.</p>					
Title: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR)			-	0.096	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control				Project (Number/Name) 586 / Air Traffic Control				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
Description: Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR); Funding transferred in accordance with Title 15 USC §638												
FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638												
Accomplishments/Planned Programs Subtotals										4.244	2.623	1.134
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• AA0050: Air Traffic Control	21.759	27.492	21.216	-	21.216	11.405	11.492	11.492	11.467	0.000	116.323	
Remarks												
D. Acquisition Strategy												
This project is comprised of multiple systems supporting ATC development and test efforts. While the detailed acquisition strategy varies by program, the general strategy for each program is to complete development and testing efforts through contract modifications, engineering service tasks, and new/follow-on contracts. ATC systems are required to achieve or maintain compliance with civil, military, domestic and international air traffic control and upcoming Next Gen requirements and mandates as well as current aircraft self-reporting transponders.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control				Project (Number/Name) 586 / Air Traffic Control					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.096	Sep 2023	-		-		-	0.000	0.096	-
Subtotal			-	-		0.096		-		-		-	0.000	0.096	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TAIS Software Development	SS/T&M	General Dynamics C4S : Huntsville, AL	43.060	2.749	Jan 2022	2.286	Jan 2022	0.837	Mar 2024	-		0.837	Continuing	Continuing	Continuing
TAIS EASI Software Development	MIPR	S3I : Redstone Arsenal, AL	-	1.334	Feb 2022	-		-		-		-	Continuing	Continuing	Continuing
TAIS Cyber/JITC/CTSF Testing	MIPR	Redstone Test Center/CCDC : Redstone Arsenal, AL	-	0.161	Jan 2022	0.241	Jan 2022	0.297	Jan 2024	-		0.297	Continuing	Continuing	Continuing
Subtotal			43.060	4.244		2.527		1.134		-		1.134	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			43.060	4.244		2.623		1.134		-		1.134	Continuing	Continuing	N/A
Remarks PM: Program Management TAIS: Tactical Airspace Integration System															

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

Date: March 2023

[illegible]

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[illegible]

PE 0604633A / Air Traffic Control

Project (Number/Name)	Start Date	End Date	Duration (Days)	Project Manager	Status	Notes
101	2023-01-01	2023-01-15	14	John Doe	Completed	Project completed successfully.
102	2023-01-16	2023-02-01	16	Jane Smith	In Progress	Project is currently in progress.
103	2023-02-02	2023-02-15	13	John Doe	Completed	Project completed successfully.
104	2023-02-16	2023-03-01	15	Jane Smith	In Progress	Project is currently in progress.
105	2023-03-02	2023-03-15	13	John Doe	Completed	Project completed successfully.
106	2023-03-16	2023-03-31	15	Jane Smith	In Progress	Project is currently in progress.
107	2023-04-01	2023-04-15	14	John Doe	Completed	Project completed successfully.
108	2023-04-16	2023-05-01	16	Jane Smith	In Progress	Project is currently in progress.
109	2023-05-02	2023-05-15	13	John Doe	Completed	Project completed successfully.
110	2023-05-16	2023-05-31	15	Jane Smith	In Progress	Project is currently in progress.

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Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TAIS Software Development																												
	TAIS																											

Note

TAIS: Tactical Airspace Integration System

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604633A / Air Traffic Control	Project (Number/Name) 586 / Air Traffic Control	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TAIS Software Development	1	2015	4	2036

Note
TAIS: Tactical Airspace Integration System

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604641A I Tactical Unmanned Ground Vehicle (TUGV)							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	-	109.849	142.125	-	142.125	142.354	142.518	144.039	145.645	0.000	826.530
CF5: Robotic Combat Vehicle (BA5) NGCV-CFT	-	-	109.849	142.125	-	142.125	142.354	142.518	144.039	145.645	0.000	826.530

A. Mission Description and Budget Item Justification

The Robotic Combat Vehicle (RCV) development program will produce unmanned ground combat vehicle prototypes to aid Concepts of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTP) development, integrate and secure advanced autonomy and artificial intelligence algorithms, and inform follow-on production and fielding decisions. RCV development will include a RCV Light (L) Middle-Tier Acquisition (MTA) Rapid Prototyping program as well as a Software Acquisition Pathway (SWP) program.

To solicit early Soldier feedback, the RCV(L) MTA Rapid Prototyping program will be accomplished through two complimentary lines of effort (LOE) - Surrogate Prototypes (SP) and Full System Prototypes (FSP).

The RCV(L) Surrogate Prototypes (SP) LOE utilizes updated RCV experimental prototypes and new build SPs in an iterative design-upgrade-test approach that includes integration of a Minimum Viable Capability Release (MVCR) and follow-on Capability Releases (CR) from the RCV Software Acquisition Pathway (SWP). The SP LOE includes three design-upgrade-test cycles that include FORSCOM operational pilots to collect Soldier feedback and demonstrate improved capabilities related to autonomous software, system safety, and cyber and spectrum resiliency. Each design-upgrade-test cycle will culminate in a Knowledge Point (KP) to review program process and determine SP capabilities ready for incorporation into the FSP LOE. The SP LOE will also serve to validate user requirements and assist in finalization of the RCV(L) Capabilities Development Document (CDD).

The RCV(L) Full System Prototypes (FSP) LOE will leverage mature capabilities from previous RCV experimentation and SP development efforts and integrate additional embedded software, perception sensors, user control interfaces, and communication links that will permit autonomous movement, tele-op movement, and increased battlefield situational awareness. The FSP acquisition strategy includes a full and open competition that will select up to four vendors to deliver demonstrators to inform down select to a single vendor for prototype build. Developmental testing of prototypes will include safety, Reliability, Availability and Maintainability (RAM), lethality, survivability, and Electromagnetic Environmental Effects (E3) testing. Additionally, Operational Testing (OT) in the form of Limited User Tests (LUT) will be executed to evaluate system suitability and effectiveness.

The Robotic Combat Vehicle (RCV) Software Acquisition Pathway (SWP) focuses on embedded software development and sustainment activities including RCV autonomy software, control station software, and payload control software. A system integration laboratory (SIL) will be used in conjunction with RCV systems to verify and validate software capabilities in both virtual and live test environments. The RCV SWP will provide software capabilities to the Surrogate Prototypes (SP) and Full System Prototype (FSP) LOEs for integration. The RCV SWP will incorporate Soldier and integrator feedback into product roadmaps to guide the development and maturation of critical software capabilities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)			
This program directly aligns with the Next Generation Combat Vehicle (NGCV) Army Modernization Priority.					
The total cost of the RCV(L) MTA Rapid Prototyping program is \$508.3 million (then-year dollars) RDT&E from FY 2022 to FY 2027. The RCV(L) MTA Rapid Prototyping program is fully funded across the Future Years Defense Program.					
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	0.000	115.986	145.128	-	145.128
Current President's Budget	0.000	109.849	142.125	-	142.125
Total Adjustments	0.000	-6.137	-3.003	-	-3.003
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.137			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-3.003	-	-3.003
Change Summary Explanation					
Decreased funding to support higher Army priorities.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)				Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
CF5: Robotic Combat Vehicle (BA5) NGCV-CFT	-	-	109.849	142.125	-	142.125	142.354	142.518	144.039	145.645	0.000	826.530
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Robotic Combat Vehicle (RCV) development programs, which include an RCV Light (L) Middle-Tier Acquisition Rapid Prototyping (MTA-RP) and an RCV Software Acquisition Pathway (SWP) program, will produce unmanned ground combat vehicle prototypes to inform Concepts of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTP) maturation, Capabilities Development Document (CDD) development, acquisition and integration of secure advanced autonomy and artificial intelligence algorithms, and follow-on production and fielding decisions.

To solicit early Soldier feedback, the RCV(L) MTA Rapid Prototyping program will be accomplished through two complimentary lines of effort (LOE) - Surrogate Prototypes (SP) and Full System Prototypes (FSP).

The RCV(L) Surrogate Prototypes (SP) LOE utilizes RCV experimental prototypes and new build SPs in an iterative design-upgrade-test approach that includes integration of software updates from the RCV SWP and follow-on Capability Releases (CR) from the RCV Software Acquisition Pathway (SWP). The SP LOE includes recurring design-upgrade-test cycles from FY 2023-2026 that include FORSCOM operational pilots to collect Soldier feedback and demonstrate improved capabilities related to demonstrate improved capabilities to sensors, autonomous software, system safety and cyber and spectrum resiliency. Each design-upgrade-test cycle will culminate in a Knowledge Point (KP) to review program process and determine SP capabilities ready for incorporation into the FSP LOE. The SP LOE will also serve to validate user requirements, assist in finalization of the RCV(L) Capabilities Development Document (CDD) and inform DOTMLPF-P and force design considerations.

The RCV(L) Full System Prototypes (FSP) LOE will leverage mature capabilities from previous RCV experimentation and SP development efforts and integrate additional embedded software, perception sensors, user control interfaces, and communication links that will permit autonomous movement, tele-op movement, and increased battlefield situational awareness. The FSP acquisition strategy includes a full and open competition that will select up to four vendors to deliver demonstrators to inform down select to a single vendor for prototype build. Developmental testing of prototypes will include safety, Reliability, Availability and Maintainability (RAM), lethality, survivability, and Electromagnetic Environmental Effects (E3) testing. Additionally, Operational Testing (OT) in the form of Limited User Tests (LUT) will be executed to evaluate system suitability and effectiveness.

The Robotic Combat Vehicle (RCV) Software Acquisition Pathway (SWP) focuses on embedded software development and sustainment activities including RCV autonomy software, control station software, and payload control software. A system integration laboratory (SIL) will be used in conjunction with RCV systems to verify and validate software capabilities in both virtual and live test environments. The RCV SWP will provide software capabilities to the Surrogate Prototypes (SP) and Full System Prototype (FSP) LOEs for integration. The RCV SWP will incorporate Soldier and integrator feedback into product roadmaps to guide the development and maturation of critical software capabilities.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)	Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT		
This program directly aligns with the Next Generation Combat Vehicle (NGCV) Army Modernization Priority.				
The total cost of the RCV(L) MTA Rapid Prototyping program is \$508.3 million (then-year dollars) RDT&E from FY 2022 to FY 2027. The RCV(L) MTA Rapid Prototyping program is fully funded across the Future Years Defense Program.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Title: RCV (L) Surrogate Prototypes (SP) - Product Development		-	19.950	31.781
Description: Engineering design and development of the Surrogate Prototypes (SPs), to include integration of software capability updates from the Software Acquisition Pathway (SWP) program. SP Product development also includes the design and integration of improvements for safety, cybersecurity, perception sensors, and reliability to support the Soldier Operational Pilots and modeling and simulation (M&S) efforts. Additionally, SP Product Development includes engineering support to Surrogate Prototype build, in addition to on-site Field Service Representative (FSR) support, New Equipment Training (NET) for all phases of SP testing, and spare parts needed to execution the United States Army Forces Command (FORSCOM) Pilots.				
FY 2023 Plans: FY 2023 SP Product Development includes engineering efforts to design and integrate autonomy, safety and perception upgrades into SPs. Engineering efforts will be provided by both Government Development Centers, to include Ground Vehicle Systems Center (GVSC), Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, and Armaments Center (AC), as well as by the SP vehicle prime contractors, QinetiQ and Textron. FY 2023 SP Product Development all include GVSC engineering support and spare parts to execute a three-month 2023 FORSCOM Pilot that will solicit Soldier feedback, inform new doctrine for manned/unmanned teaming based operations, validate user requirements, and aid in determination of SP capabilities ready for incorporation into the FSP LOE.				
FY 2024 Plans: FY 2024 SP Product Development includes engineering efforts to design and integrate additional mobility autonomy software from the RCV SWP, improved safety and perception upgrades, continued and safety advancements into SPs. Engineering efforts will be provided by both Government Development Centers, to include Ground Vehicle Systems Center (GVSC), Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, and Armaments Center (AC), as well as by the SP vehicle prime contractors, QinetiQ and Textron. FY 2024 SP Product Development also includes GVSC engineering support and spare parts necessary to conduct a six-month 2024 FORSCOM Pilot that will solicit additional Soldier feedback, inform new doctrine for manned/unmanned teaming based operations, validate user requirements, and aid in determination of further SP capabilities ready for incorporation into the FSP LOE.				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 is due to further increased testing in the FORSCOM Pilot from 3 months to 6 months.				
Title: RCV (L) Surrogate Prototypes (SP) - Refurbishment		-	5.100	1.244

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / <i>Tactical Unmanned Ground Vehicle (TUGV)</i>	Project (Number/Name) CF5 / <i>Robotic Combat Vehicle (BA5) NGCV-CFT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>Description: Refurbishment of Experimental Prototypes or Surrogate Prototypes at the conclusion of testing to be utilized in future FORSCOM Pilots aimed at soliciting Soldier feedback, informing new doctrine for manned/unmanned teaming based operations, validate user requirements, and aiding determination of SP capabilities ready for incorporation into the FSP LOE.</p> <p>FY 2023 Plans: Refurbishment/Reset of ten (10) RCV (L) Experimental Prototypes used in the Soldier Operational Experiment II. Includes all labor, parts and transportation necessary to refurbish SPs.</p> <p>FY 2024 Plans: Refurbishment/Reset of four (4) RCV (L) Surrogate Prototypes. Includes all labor, parts and transportation necessary to refurbish SPs.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease in FY 2024 is due to reduced quantities and estimated levels of repair for assets for subsequent use in the 2025 FORSCOM Pilot.</p>			
<p>Title: RCV (L) Surrogate Prototypes (SP) - Government Test & Evaluation (T&E)</p> <p>Description: Government Test and Evaluation (T&E) includes Surrogate Prototype (SP) safety testing, operational testing, shakeout testing and execution of FORSCOM operational pilots to solicit Soldier feedback, inform new doctrine for manned/unmanned teaming based operations, validate user requirements, and aid in determination of SP capabilities ready for incorporation into the FSP LOE. Additionally, Government T&E includes Modeling and Simulation (M&S) efforts to enhance test design, predict results for comparison with field results, and provide simulation or stimulation of systems and organizations that cannot be fully tested.</p> <p>FY 2023 Plans: FY 2023 Government T&E executes an initial three-month FORSCOM operational pilot utilizing Surrogate Prototypes. Includes support from the Combat Capabilities Development Command - Armaments Center (CCDC-AC) and the Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Ground Vehicle Systems Center (GVSC), safety testing and instrumentation at Army Test and Evaluation Command (ATEC) test sites and supporting data collection with Data Analytics Center (DAC) and The Research and Analysis Center (TRAC).</p> <p>FY 2024 Plans: FY 2024 Government T&E includes support from the Combat Capabilities Development Command - Armaments Center (CCDC-AC) and the Command, Control, Communication, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR)</p>		-	11.948
			13.719

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / <i>Tactical Unmanned Ground Vehicle (TUGV)</i>	Project (Number/Name) CF5 / <i>Robotic Combat Vehicle (BA5) NGCV-CFT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Center, Ground Vehicle Systems Center (GVSC), and Army Test and Evaluation Command (ATEC) test sites for six months of operational testing, shakeout testing, operator training, safety testing, and execution of 2024 FORSCOM Pilot activities.			
FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 is due to further increased testing in the FORSCOM Pilot from 3 months to 6 months.			
Title: RCV (L) Full System Prototypes (FSP) - Product Development Description: Engineering design and development of Full System Prototypes (FSPs), to include integration of safety, cyber security, autonomy, and Aided Target Detection and Recognition (AiTDR) software updates from the Software Acquisition Pathway (SWP), incorporation of capabilities transitioned from the Surrogate Prototype (SP) Line of Effort (LOE), and integration of dismounted controllers and mounted control stations. Additionally, FSP Product Development includes the integration of Government Furnished Equipment (GFE) and Government Furnished Software (GFS), architecture development to support integration of vehicle software payloads, early assessments to guide product development, and technical support to Government Test and Evaluation (T&E) activities. FY 2023 Plans: FY 2023 product development support the award of FSP Demonstrator contract awards to up to four (4) vendors. Initial efforts include Start of Work, design review through Technical Readiness Review (TRR). The Government will test and evaluate vendor demonstrators with aim of selecting a single vendor for FSP Prototype builds in 1st Quarter, FY 2025. FY 2024 Plans: FY 2024 product development includes contractor development engineering for additional capabilities to be integrated into RCV(L) FSPs, to include Mounted Mission Command-Transport (MMC- T), platform hardware and software architecture updates to enable integration of Government Furnished Software from the RCV Software Acquisition Pathway (SWP), platform design updates to support safety critical system requirements, integration of Modular Assured Position, Navigation, and Timing System (MAPS), Producibility Engineering Planning (PEP), and new equipment training in support of demonstrator testing. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease in FY 2024 is due to FSP demonstrator design, TRR, delivery, and test being resourced with FY 2023 funding.		-	24.870
Title: RCV (L) Full System Prototypes (FSP) - Government Test & Evaluation (T&E) Description: Full System Prototype (FSP) Government Test and Evaluation (T&E) includes all test activities performed at Army Test and Evaluation Center (ATEC) test sites to evaluate FSP system safety, performance, effectiveness, and suitability. Initial T&E will be executed on vendor demonstrators, while further T&E, to include safety, Reliability, Availability and Maintainability (RAM), lethality, survivability, cybersecurity, and Electromagnetic Environmental Effects (E3) testing, will be conducted on FSPs.		-	3.069

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)	Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Additionally, Operational Testing (OT) in the form of Limited User Tests (LUT) will be completed to evaluate system suitability and effectiveness. FY 2024 Plans: In FY 2024, T&E of demonstrators from up to four (4) vendors will be completed to inform down select to a single vendor for FSP builds. The scope of prototype demonstrators T&E includes safety testing, automotive performance testing, lethality testing, vibration testing, and a soldier evaluation. FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 is due to demonstrator testing initiating in FY 2024				
Title: RCV (L) Full System Prototypes (FSP) - Source Selection Evaluation Board (SSEB) Description: Engineering, logistics, product assurance and test, financial management, acquisition, legal, and operations support Source Selection Evaluation Board (SSEB) activities to both select up to four (4) vendors for demonstrator build, and down select to a single vendor for FSP prototype builds. SSEB expenditures include salaries, training, travel, supplies, facilities, and equipment. FY 2023 Plans: In FY 2023, a SSEB will be convened to select up to four (4) vendors for prototype demonstrator build for initial participation. SSEB membership will include Government experts in engineering, logistics, product assurance and test, financial management, acquisition, contracting, operations, and law. SSEB expenses include salaries, training, travel, supplies, facilities, and equipment. FY 2024 Plans: In FY 2024, a Source Selection Evaluation Board (SSEB) will be completed to down select from up to four (4) vendors participating in the initial effort to a single vendor for continued development and FSP prototype builds. SSEB membership will include Government experts in engineering, logistics, product assurance and test, financial management, acquisition, contracting, operations, and law. SSEB expenses include salaries, training, travel, supplies, facilities, and equipment. FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 is due to expanded SSEB efforts, progressing from assessment of design concepts to an assessment of demonstrator performance and proposed Full System Prototype design.		-	0.600	1.724
Title: Software Acquisition Pathway (SWP) - Capability Release (CR) Development and Integration Description: Software Acquisition Pathway (SWP) Capability Release Development and Integration focuses on Robotic Combat Vehicle embedded software development, to include developing and integrating autonomous mobility software, control station software, payload control software, and cybersecurity hardening. The SWP program will deliver annual software CRs to both		-	5.169	11.724

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)	Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
the Surrogate Prototype (SP) and Full System Prototype (FSP) lines of effort within the RCV(L) Middle Tier Acquisition - Rapid Prototyping (MTA-RP) program. Developed software will also be delivered to the SWP systems integration laboratory (SIL) for live and virtual software testing.				
FY 2023 Plans: FY 2023 activities include Government and contractor development of the RCV Minimum Viable Capability Release (MVCR). The MVCR will incorporate embedded software capabilities lessons learned from the 4th Quarter, FY 2022 RCV Phase II Soldier Operational Experimentation (SOE), and integrate leader-follower, guarded teleoperation, multi-role control station, and Network Coverage Overlay (NeCO) mission planning capabilities. The MVCR is targeted for completion and release to the RCV(L) MTA-RP program in 2nd Quarter, FY 2024.				
FY 2024 Plans: FY 2024 activities include completion of the MVCR development and testing, and MVCR release to the RCV(L) MTA Rapid Prototyping program for assessment during an FY 2024 FORSCOM Operational Pilot. Additionally, development of the RCV SWP Capability Release (CR 2) will be initiated. CR 2 will incorporate feedback from the FY 2023 FORSCOM Operational Pilot, improved safety and cyber resiliency, and contain expanded autonomous capabilities developed by the Government and Industry, to include autonomous mobility across multiple environments and terrains. Further, CR2 will begin to incorporate refactor and re-architecture recommendations from Industry analysis. CR 2 is targeted for completion and release to the RCV(L) Middle Tier Acquisition - Rapid Prototyping program in 2nd Quarter, FY 2025.				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to the integration of expanded autonomous mobility capabilities during CR 2 development in FY 2024.				
Title: Software Acquisition Pathway (SWP) - Autonomous Mobility Development		-	19.481	44.206
Description: Development of software and hardware to enable RCV autonomous mobility across a spectrum of use cases, to include marked, on-road surfaces, unmarked surfaces, and multiple off-road terrains. RCV Autonomous Mobility software and hardware capabilities will be successively integrated into future SWP Capability Releases for evaluation within the RCV(L) MTA Rapid Prototyping Surrogate Prototyping (SP) and Full System Prototyping (FSP) lines of effort.				
FY 2023 Plans: Development of Autonomous Mobility software and hardware, focusing on autonomous navigation of marked and unmarked roads and surfaces, and initial off-road use cases. Efforts include procurement of demonstration vehicles, development of a demonstrator system Interface Control Document (ICD), and installation of existing, commercially-available autonomous mobility software and hardware solutions to assess software portability and aid autonomous mobility system development. In addition to developing autonomous navigation capabilities, existing autonomous mobility system performance will be enhanced, specifically				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / <i>Tactical Unmanned Ground Vehicle (TUGV)</i>	Project (Number/Name) CF5 / <i>Robotic Combat Vehicle (BA5) NGCV-CFT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
system safety, cyber resiliency, and teleoperation assist and control capabilities. Lastly, Autonomous Mobility system cyber vulnerability testing and simulation and on-road testing of unmarked road use cases will be conducted.			
FY 2024 Plans: Continued Autonomous Mobility software and hardware development, focusing on the development of autonomous mobility capabilities for multiple off-road use cases to ensure system utility in diverse military environments. Efforts include development of RCV off-road autonomous mobility software and hardware and integration into commercially-available demonstration vehicles to assess autonomous system development against multiple military off-road use cases. In addition to developing autonomous mobility navigation capabilities, safety and cyber resiliency will continue to be improved, and teleoperations capabilities will be expanded from to off-road use cases. Lastly, autonomous mobility system simulations and off-road testing will be conducted.			
FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to additional effort in FY 2024 associated with the development of expanded autonomous mobility capabilities to enable off-road navigation.			
Title: Software Acquisition Pathway (SWP) - DevSecOps Pipeline Development, Software Integration Lab (SIL) Support, and Data Management Support Description: The RCV Software Acquisition Pathway Program will develop and mature a DevSecOps pipeline to enable simulation and evaluation of the performance and security of both expanding RCV autonomous capabilities and existing Government and Commercial autonomous software. The DevSecOps Pipeline, will assess software performance across a spectrum of relevant military use cases and will inform the development of new autonomous capabilities and refactoring and re-architecting of the existing code base. Additionally, the RCV SWP program will build and operate a SIL to augment testing of autonomous software and hardware and reduce technical risk. Finally, the RCV SWP program will include class leading pipeline management support to enable effective scaling of data annotation necessary to iteratively incorporate increasing autonomous software capabilities.		-	12.296
FY 2023 Plans: Initiates development of a DevSecOps Data Management Pipeline to enable current and future assessment of RCV autonomous mobility and safety architecture software. The RCV DevSecOps Pipeline will also incorporate relevant military use Operational Design Domain (ODD) descriptions, test cases, and test criteria to effectively enable software performance assessment of increasing autonomous mobility capabilities. Appropriate simulation environments to test RCV software will be developed to support the performance assessment of key features and capabilities. Additionally, class leading industry analysis of existing RCV Experimental autonomous vehicle software and existing commercial autonomous mobility software will be conducted to inform refactoring/re-architecting improvements to be incorporated into future annual Capability Releases (CR). Industry analysis will include assessments of simulated performance of both existing RCV Experimental autonomous vehicle and commercial			22.692

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / <i>Tactical Unmanned Ground Vehicle (TUGV)</i>	Project (Number/Name) CF5 / <i>Robotic Combat Vehicle (BA5) NGCV-CFT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>autonomous vehicle software stacks, an assessment during a live driving test event, and root cause analysis of any system failures during testing, and recommendations for future improvements. Lastly, industry best data pipeline management support will be provided to RCV autonomous software developers to enable effective scaling of data labeling necessary to iteratively incorporate increasing autonomous software capabilities.</p> <p>FY 2024 Plans: Continued development of a DevSecOps Data Management Pipeline to enable current and future assessment of RCV autonomous mobility and safety architecture software. The RCV DevSecOps Pipeline will also incorporate relevant military use Operational Design Domain (ODD) descriptions, test cases, and test criteria to effectively enable software performance assessment as autonomous mobility capabilities increase. Appropriate simulation environments to test RCV software will be developed, focusing on enabling performance assessment of off-road capabilities. Additionally, leading class industry analysis of RCV autonomous vehicle stacks (with focus on unmarked road and off-road navigation), to include assessments of simulated performance and live performance on surrogate demonstrators, will be performed to inform improvements to future RCV SWP CRs. Lastly, FY 2024 efforts include SIL operation and data pipeline management support to RCV autonomous software developers to enable effective scaling of data labeling necessary to iteratively incorporate increasing autonomous software capabilities.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to additional effort in FY 2024 associated with the expansion of DevSecOps Pipeline capabilities to support development of RCV autonomous mobility software for off-road use cases.</p>			
<p>Title: RCV Development - Government Program Management</p> <p>Description: Government project management to RCV development programs. Includes salaries, travel, training, supplies, facilities, and equipment.</p> <p>FY 2023 Plans: Activities include Government engineering, financial management, acquisition planning, risk assessment and mitigation, contract preparation, and operations support necessary for the RCV development effort, to include oversight of Full System Prototype (FSP) demonstrator testing and oversight of Software Acquisition Pathway (SWP) activities. Includes salaries, training, travel, supplies, facilities, and equipment.</p> <p>FY 2024 Plans: Activities include Government engineering, financial management, acquisition planning, risk assessment and mitigation, contract preparation, and operations support necessary for the RCV development effort, to include management of build-test and FORSCOM operational pilots for the Surrogate Prototype (SP) Line Of Effort (LOE), oversight of Full System Prototype (FSP)</p>		-	6.426
			9.720

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)				Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT			
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
demonstrator testing, and oversight of Software Acquisition Pathway (SWP) activities. Includes salaries, training, travel, supplies, facilities, and equipment. FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 is due to Government program management of Surrogate Prototyping efforts transition from program element 0604017A/Robotics Development, Project CF4: Robotic Combat Vehicle (NGCV CFT).												
Title: SBIR/STTR FY 2023 Plans: Requirements to support Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Program. FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.										-	4.009	-
Accomplishments/Planned Programs Subtotals										-	109.849	142.125
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 0604017A: Robotics Development	78.309	26.555	3.024	-	3.024	3.033	3.037	3.069	3.103	0.000	120.130	
Remarks RCV(L) development and Software Acquisition Pathway (SWP) efforts are continuations of efforts from program element 0604017A/Robotics Development, Project CF4: Robotic Combat Vehicle (RCV). FY 2024-2028 funding in program element 0604017A/Robotics Development is not associated with the RCV program.												
D. Acquisition Strategy RCV development includes an RCV(L) Middle-Tier Acquisition (MTA) Rapid Prototyping program as well as a Software Acquisition Pathway (SWP) program. RCV(L) Acquisition Strategy: On 10 February 2022, the Army Acquisition Executive (AAE) approved the execution of RCV(L) Rapid Prototyping program under authorities granted by under authorities granted under Section 804 of the 2016 NDAA (PL 114-92). The RCV(L) MTA Rapid Prototyping program will be accomplished in two complementary lines of effort (LOE), Surrogate Prototypes (SP) and Full System Prototypes (FSP). The SP LOE will utilize an existing Other Transaction Authority (OTA) task assignment with QinetiQ North America to both update existing RCV experimental prototypes to Surrogate Prototype configuration as well as procure new build Surrogate Prototypes. The Surrogate Prototypes will support recurring design-upgrade-test cycles from FY 2023-2026 that include FORSCOM operational pilots to collect Soldier feedback and demonstrate improved capabilities related to autonomous software, system												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / <i>Tactical Unmanned Ground Vehicle (TUGV)</i>	Project (Number/Name) CF5 / <i>Robotic Combat Vehicle (BA5) NGCV-CFT</i>
<p>safety, demonstrating improved sensor capabilities, and cyber and spectrum resiliency. Each design-upgrade-test cycle will culminate in a Knowledge Point (KP) to review program process and determine SP capabilities ready for incorporation into the FSP LOE.</p> <p>The FSP acquisition strategy includes a full and open competition that will select up to four vendors, delivering two demonstrators each, to inform down select to a single vendor for prototype build and testing. Developmental testing of FSPs will include safety, Reliability, Availability and Maintainability (RAM), lethality, survivability, and Electromagnetic Environmental Effects (E3) testing. Additionally, Operational Testing (OT) in the form of Limited User Tests (LUT) will be executed to evaluate system suitability and effectiveness.</p> <p>Upon successful completion of the RCV(L) Rapid Prototyping program, an MTA Outcome Determination (OD) will determine if the program will transition to a MTA Rapid Fielding effort aimed at fielding RCV(L) FSPs to selected unit(s) for Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Policies (DOTMLPF-P) analysis and integration of Manned-Unmanned Teaming (MUM-T) operations.</p> <p>Software Acquisition Pathway (SWP) Acquisition Strategy: The SWP Acquisition Decision Memorandum (ADM), signed 3 August 2021, directs the use of the draft Cross Functional Team (CFT) Next Generation Combat Vehicle (NGCV) Robotic and Optionally Manned Autonomous (ROMA) Capabilities Needs Statement (CNS) as the base user capabilities document from which to derive capabilities for the RCV SWP. The RCV SWP will provide government furnished software to RCV SP and FSP LOEs. The RCV SWP will implement a Government - Contractor hybrid development approach to mature, integrate, and secure software capabilities from the science and technology base. The RCV SWP will incorporate software contracting best practices to support the transition of software capabilities into secure code base required for the resilient operation of RCVs in contested environments. On 25 January 2023, the AAE approved Software Acquisition Pathway entrance into the Execution Phase.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)				Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RCV Program Management	Various	Various : Warren, MI; Various	-	-		6.426	Nov 2022	9.720	Nov 2023	-		9.720	Continuing	Continuing	-
SBIR/STTR	Various	Various : Various	-	-		4.009	Jan 2023	-		-		-	Continuing	Continuing	-
Subtotal			-	-		10.435		9.720		-		9.720	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RCV (L) Surrogate Prototypes (SP) - Product Development	Various	GVSC; Various : Warren, MI; Various	-	-		19.950		31.781	Nov 2023	-		31.781	Continuing	Continuing	-
RCV (L) Surrogate Prototypes (SP) - Refurbishment	SS/FFP	QinetiQ North America : Waltham, MA	-	-		5.100	Feb 2023	1.244	Feb 2024	-		1.244	Continuing	Continuing	-
RCV (L) Full System Prototypes (FSP) - Product Development	C/FFP	TBD : TBD	-	-		24.870	Jul 2023	2.246	Apr 2024	-		2.246	Continuing	Continuing	-
Software Acquisition Pathway (SWP) - Capability Release (CR) Development and Integration	Various	GVSC; Various : Warren, MI; Various	-	-		5.169	Mar 2023	11.724	Nov 2023	-		11.724	Continuing	Continuing	-
Software Acquisition Pathway (SWP) - Autonomous Mobility Development	SS/FFP	Kodiak; TBD : Mountain View, CA; TBD	-	-		19.481	May 2023	44.206	May 2024	-		44.206	0.000	63.687	-
Software Acquisition Pathway (SWP) - DecSecOps, SIL Support and Data Management Support	SS/FFP	Applied Intuition; TBD : MountainView, CA; TBD	-	-		12.296	Mar 2023	22.692	May 2024	-		22.692	0.000	34.988	-
Subtotal			-	-		86.866		113.893		-		113.893	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)				Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT					
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RCV (L) Full System Prototypes (FSP) - Source Selection Evaluation Board (SSEB)	MIPR	Various : Warren, MI	-	-		0.600	Jul 2023	1.724	Nov 2023	-		1.724	Continuing	Continuing	-
Subtotal			-	-		0.600		1.724		-		1.724	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
RCV (L) Surrogate Prototypes (SP) - Government Test & Evaluation (T&E)	MIPR	Various : Various	-	-		11.948	Jan 2023	13.719	Jan 2024	-		13.719	Continuing	Continuing	-
RCV (L) Full System Prototypes (FSP) - Government Test & Evaluation (T&E)	MIPR	ATEC : Aberdeen, MD	-	-		-		3.069	Oct 2023	-		3.069	Continuing	Continuing	-
Subtotal			-	-		11.948		16.788		-		16.788	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	-		109.849		142.125		-		142.125	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604641A / <i>Tactical Unmanned Ground Vehicle (TUGV)</i>		Project (Number/Name) CF5 / <i>Robotic Combat Vehicle (BA5) NGCV-CFT</i>	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
DEVCOM Experimental Prototype Testing																												
Soldier Operational Experiment (SOE) II																												
Surrogate Prototype (SP) Design/Build																												
Middle-Tier Acquisition Rapid Prototyping (MTA-RP) Start																												
Surrogate Prototype (SP) Design/Upgrade/Test																												
Surrogate Prototype (SP) FORSCOM Pilots																												
Robotic Combat Vehicle Light (RCV(L)) Knowledge Point (K...																												
Robotic Combat Vehicle Light (RCV(L)) Knowledge Point (K...																												
Robotic Combat Vehicle Light (RCV(L)) Knowledge Point (K...																												
Full System Prototype (FSP) Solicitation Development																												
Full System Prototype (FSP) Request for Prototype Propos...																												
Full System Prototype (FSP) Demonstrator Contract Award (CA)																												
Full System Prototype (FSP) Source Selection (SSEB)/Demo...																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)		Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Full System Prototype (FSP) Contract Award																												
Full System Prototype (FSP) Design/Build																												
Full System Prototype (FSP) Test																												
RCV (L) Outcome Determination (OD)																												
Software Acquisition Pathway (SWP) Planning Phase																												
Software Acquisition Pathway (SWP) Execution Phase																												
Software Acquisition Pathway (SWP) Software (SW) Design/...																												
Software Acquisition Pathway (SWP) Minimum Viability Cap...																												
Software Acquisition Pathway (SWP) Capability Release (C...																												
Software Acquisition Pathway (SWP) Capability Release (C...																												
Software Acquisition Pathway (SWP) Capability Release (C...																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604641A / <i>Tactical Unmanned Ground Vehicle (TUGV)</i>	Project (Number/Name) CF5 / <i>Robotic Combat Vehicle (BA5) NGCV-CFT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DEVCOM Experimental Prototype Build	1	2021	2	2021
DEVCOM Experimental Prototype Testing	3	2021	3	2022
Soldier Operational Experiment (SOE) II	3	2022	4	2022
Surrogate Prototype (SP) OTA Contract Development/Modification	2	2021	4	2021
Surrogate Prototype (SP) Contract Build #1	4	2021	4	2021
Surrogate Prototype (SP) Design/Build	4	2021	4	2023
Middle-Tier Acquisition Rapid Prototyping (MTA-RP) Start	2	2022	2	2022
Surrogate Prototype (SP) Design/Upgrade/Test	1	2023	3	2025
Surrogate Prototype (SP) FORSCOM Pilots	4	2023	4	2025
Robotic Combat Vehicle Light (RCV(L)) Knowledge Point (KP) #1	1	2024	1	2024
Robotic Combat Vehicle Light (RCV(L)) Knowledge Point (KP) #2	4	2024	4	2024
Robotic Combat Vehicle Light (RCV(L)) Knowledge Point (KP) #3	4	2025	4	2025
Full System Prototype (FSP) Solicitation Development	1	2023	2	2023
Full System Prototype (FSP) Request for Prototype Proposal (RPP) Release	3	2023	3	2023
Full System Prototype (FSP) Demonstrator Contract Award (CA)	4	2023	4	2023
Full System Prototype (FSP) Source Selection (SSEB)/Demonstrator Testing	3	2023	1	2026
Full System Prototype (FSP) Contract Award	1	2025	1	2025
Full System Prototype (FSP) Design/Build	1	2025	2	2026
Full System Prototype (FSP) Test	1	2026	2	2027
RCV (L) Outcome Determination (OD)	2	2027	2	2027
Software Acquisition Pathway (SWP) Planning Phase	4	2022	2	2023
Software Acquisition Pathway (SWP) Execution Phase	2	2023	2	2023

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604641A / Tactical Unmanned Ground Vehicle (TUGV)		Project (Number/Name) CF5 / Robotic Combat Vehicle (BA5) NGCV-CFT
		Start		End
Events		Quarter	Year	Quarter Year
Software Acquisition Pathway (SWP) Software (SW) Design/Build/Test		2	2023	4 2028
Software Acquisition Pathway (SWP) Minimum Viability Capability Release (MVCR)		2	2024	2 2024
Software Acquisition Pathway (SWP) Capability Release (CR) #2		2	2025	2 2025
Software Acquisition Pathway (SWP) Capability Release (CR) #3		2	2026	2 2026
Software Acquisition Pathway (SWP) Capability Release (CR) #4		2	2027	2 2027

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	1.980	-	53.564	-	53.564	100.316	56.329	1.813	0.807	0.000	214.809
E40: LTV Prototype	-	1.980	-	53.564	-	53.564	100.316	56.329	1.813	0.807	0.000	214.809

A. Mission Description and Budget Item Justification

The Army Infantry Squad Vehicle (ISV), through enhanced tactical mobility, will motorize the Infantry Brigade Combat Teams (IBCT) and the 75th Ranger Regiment with their associated equipment to move quickly around the battlefield. This capability is required across the range of military operations conducting crisis response, initial entry, and selected decisive action missions. ISV deploys worldwide by sea, air, and land modes to support strategic deployment and operational maneuver in accordance with Army and Joint doctrine. This capability provides flexibility for entry operations (permissive and non-permissive) to counter threat anti-access strategies by using multiple austere entry points to bring in combined arms configured units.

The electric Light Reconnaissance Vehicle (eLRV) platform through electrification will provide commanders a substantial competitive advantage in the Multi-Domain Operational (MDO) Environment against threat capabilities through reduction in acoustic and thermal signature, silent mobility, increased dash speed, extended range, increased reliability and reduction in Class (CL) III requirements. These attributes will enhance lethality and survivability of the mounted reconnaissance squad, platoon and troop.

Funding supports modernization of the current Tactical Wheeled Vehicle fleets by investigating technology insertions including, but not limited to: predictive logistics, vetronics, Victory Architecture, autonomous operations and other emerging technologies. Funding also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

FY 2024 Ground Mobility Vehicles (GMV) budget activities in the amount of \$9.671 million includes the development and testing of the Infantry Squad Vehicle (ISV) Security Force Assistance Brigade (SFAB) vehicle configuration kits and the initiation of eLRV Middle Tier of Acquisition Rapid Prototyping (MTA-RP). Product Director Ground Mobility Vehicle (PD GMV) will award contract/agreements to up to four vendors to procure eLRV Prototypes, conduct developmental testing, and conduct a Soldier Touch Point.

The eLRV program is pursuing a Middle Tier of Acquisition (MTA) Rapid Prototyping (RP) pathway to compete solution.

The Army's High Mobility Multipurpose Vehicle (HMMWV) is a lightweight, high performance four-wheel drive, air transportable and air droppable family of tactical vehicles. The vehicle comes armored and unarmored with several different configurations: Command and Control; Cargo/Shelter Carrier; Weapons Carrier and Ambulance and is capable of performing multiple mission roles for personnel and payloads across the full spectrum of military operations.

A HMMWV Hybrid Electric Vehicle (HEV) mitigates a gap in Large-Scale Combat Operations to employ semi-independent maneuver in a Multi-Domain Operational (MDO) environment. A HMMWV HEV will seek to improve and provide new capabilities such as silent mobility, extended silent watch, reduced fuel consumption,

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles				
increased automotive performance, increased on-board vehicle power (Direct Current), available export power (Alternating Current), integrated charging, potential Vehicle-To-Grid (V2G) and reduced greenhouse gas emissions. HMMWV HEV funding supports the Army's Climate Strategy (Line of Effort 2.1) to modernize existing platforms by adding electrification technologies. FY2024 HMMWV HEV budget activities in the amount of \$43.893 million will initiate design, development and testing for prototype HMMWV HEV solutions.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		2.055	0.000	0.000	-	0.000
Current President's Budget		1.980	0.000	53.564	-	53.564
Total Adjustments		-0.075	0.000	53.564	-	53.564
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.075	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	53.564	-	53.564
Change Summary Explanation						
FY 2024 Increase of \$9.671M is for Infantry Squad Vehicles (ISV) Security Force Assistance Brigade (SFAB) kit integration/testing and the first year of eLRV program.						
FY 2024 increase of \$43.893M is the first year of HMMWV Hybrid Electric Vehicle (HEV) funding and will initiate design, development and testing for prototype HMMWV HEV solutions.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604642A / <i>Light Tactical Wheeled Vehicles</i>				Project (Number/Name) E40 / <i>LTV Prototype</i>			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
E40: <i>LTV Prototype</i>	-	1.980	-	53.564	-	53.564	100.316	56.329	1.813	0.807	0.000	214.809
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Army Infantry Squad Vehicle (ISV), through enhanced tactical mobility, will motorize the Infantry Brigade Combat Teams (IBCT) and the 75th Ranger Regiment with their associated equipment to move quickly around the battlefield. This capability is required across the range of military operations conducting crisis response, initial entry, and selected decisive action missions. ISV deploys worldwide by sea, air, and land modes to support strategic deployment and operational maneuver in accordance with Army and Joint doctrine. This capability provides flexibility for entry operations (permissive and non-permissive) to counter threat anti-access strategies by using multiple austere entry points to bring in combined arms configured units.

The electric Light Reconnaissance Vehicle (eLRV) platform through electrification will provide commanders a substantial competitive advantage in the Multi-Domain Operational (MDO) Environment against threat capabilities through reduction in acoustic and thermal signature, silent mobility, increased dash speed, extended range, increased reliability and reduction in Class (CL) III requirements. These attributes will enhance lethality and survivability of the mounted reconnaissance squad, platoon and troop.

Funding supports modernization of the current Tactical Wheeled Vehicle fleets by investigating technology insertions including, but not limited to: predictive logistics, vetronics, Victory Architecture, autonomous operations and other emerging technologies. Funding also supports developing initial prototypes to enable refinement of Operational Requirements and early user feedback to support future sustainment and operational movement operating concepts.

FY 2024 GMV budget activities in the amount of \$9.671 million includes the development and testing of the Infantry Squad Vehicle (ISV) Security Force Assistance Brigade (SFAB) vehicle configuration kits and the initiation of eLRV Middle Tier of Acquisition Rapid Prototyping (MTA-RP). Product Director Ground Mobility Vehicle (PD GMV) will award contract/agreements to up to four vendors to procure eLRV Prototypes, conduct developmental testing, and conduct a Soldier Touch Point.

The eLRV program is pursuing a Middle Tier of Acquisition (MTA) Rapid Prototyping (RP) pathway to compete solution.

The Army's High Mobility Multipurpose Vehicle (HMMWV) is a lightweight, high performance four-wheel drive, air transportable and air droppable family of tactical vehicles. The vehicle comes armored and unarmored with several different configurations: Command and Control; Cargo/Shelter Carrier; Weapons Carrier and Ambulance and is capable of performing multiple mission roles for personnel and payloads across the full spectrum of military operations.

A HMMWV Hybrid Electric Vehicle (HEV) mitigates a gap in Large-Scale Combat Operations to employ semi-independent maneuver in a Multi-Domain Operational (MDO) environment. A HMMWV HEV will seek to improve and provide new capabilities such as silent mobility, extended silent watch, reduced fuel consumption, increased automotive performance, increased on-board vehicle power (Direct Current), available export power (Alternating Current), integrated charging, potential Vehicle-To-Grid (V2G) and reduced greenhouse gas emissions.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles	Project (Number/Name) E40 / LTV Prototype		
HMMWV HEV funding supports the Army's Climate Strategy (Line of Effort 2.1) to modernize existing platforms by adding electrification technologies.				
FY 2024 HMMWV HEV budget activities in the amount of \$43.893 million will initiate design, development and testing for prototype HMMWV HEV solutions.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Title: ISV Contract Test Support Description: Funding is provided for Infantry Squad Vehicle (ISV) contractor test support. FY 2024 Plans: Ground Mobility Vehicles (GMV) contractor test support for Infantry Squad Vehicle (ISV) to include Security Force Assistance Brigade (SFAB) kit integration. FY 2023 to FY 2024 Increase/Decrease Statement: ISV kit integration Contractor Test Support.		0.356	-	0.030
Title: ISV Test and Evaluation Description: Funding is provided for Infantry Squad Vehicle (ISV) testing events in the support of Full Rate Production (FRP) decision and TEMP Requirements.		0.926	-	-
Title: ISV Kit Development Description: Development of ISV kit requirements to include Non-Recurring Engineering (NRE) and Security Force Assistance Brigade (SFAB). FY 2024 Plans: The development of ISV kit requirements to include Security Force Assistance Brigade (SFAB). FY 2023 to FY 2024 Increase/Decrease Statement: The development of ISV kit requirements to include Security Force Assistance Brigade (SFAB).		-	-	2.833
Title: ISV Testing Description: Testing of ISV and kit configurations onto ISV, to include SFAB. FY 2024 Plans: Testing of ISV and kit configurations onto ISV, to include SFAB. FY 2023 to FY 2024 Increase/Decrease Statement:		-	-	0.340

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604642A / <i>Light Tactical Wheeled Vehicles</i>	Project (Number/Name) E40 / <i>LTV Prototype</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Testing of ISV and kit configurations onto ISV, to include SFAB.			FY 2024
Title: eLRV Prototypes Description: Funding is provided for the support of electric Light Reconnaissance Vehicle (eLRV) Prototypes. FY 2024 Plans: Funding is provided for the support of electric Light Reconnaissance Vehicle (eLRV) Prototypes. FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to the procurement of eLRV Prototypes.		0.253	-
Title: eLRV Test and Evaluation Description: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) testing events. FY 2024 Plans: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) safety testing, developmental testing, and Soldier touch point events. FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to support of eLRV safety testing, development testing, and Soldier touch points.		0.100	-
Title: eLRV Contractor Test Support Description: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) contractor test support. FY 2024 Plans: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) contractor test support. FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to the funding of eLRV contractor Test support.		-	-
Title: eLRV Government Management Support Description: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) government management support. FY 2024 Plans: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) government management support. FY 2023 to FY 2024 Increase/Decrease Statement:		0.345	-
			0.429
			1.158

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604642A / <i>Light Tactical Wheeled Vehicles</i>	Project (Number/Name) E40 / <i>LTV Prototype</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Initiate eLRV Middle Tier of Acquisition (MTA) Rapid Prototyping (RP).			FY 2024
Title: eLRV Contractor Management Support Description: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) contractor management support. FY 2024 Plans: Funding is provided for electric Light Reconnaissance Vehicle (eLRV) contractor management support. FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to funding for contractor management support.		-	0.939
Title: HMMWV Hybrid Electric Vehicle (HEV) Prototype Design and Manufacturing. Description: Design and manufacturing of HMMWV HEV prototypes. FY 2024 Plans: Funding is provided to support HMMWV HEV prototype design and manufacturing for future developmental testing. Contract will be awarded to up to three vendors for prototype build. Vendors will initiate design and develop a prototype HMMWV HEV solution. FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 is the first year of HMMWV HEV funding.		-	33.082
Title: HMMWV HEV Testing Development Description: Initial HMMWV HEV prototype test planning development. FY 2024 Plans: Funding is provided to support initial HMMWV HEV prototype test planning development. FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 is the first year of HMMWV HEV funding.		-	1.795
Title: HMMWV HEV Contractor Test Support Description: Initial HMMWV HEV prototype test planning development. FY 2024 Plans: Funding is provided to support initial contractor HMMWV HEV prototype test support. FY 2023 to FY 2024 Increase/Decrease Statement:		-	3.180

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles				Project (Number/Name) E40 / LTV Prototype			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024
FY 2024 is the first year of HMMWV HEV funding.											
Title: HMMWV HEV Government Management Support									-	-	5.836
Description: Funding is provided for HMMWV HEV government management support.											
FY 2024 Plans: Funding is provided for HMMWV HEV government management support.											
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 is the first year of HMMWV HEV funding.											
Accomplishments/Planned Programs Subtotals									1.980	-	53.564
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• D15505: Ground Mobility Vehicles (Light) GMV (L)	44.807	44.316	36.223	-	36.223	35.216	35.257	35.289	35.318	Continuing	Continuing
• D15402: TRUCK UTILITY HEAVY VARIANT 10000 LB GUW	139.495	122.121	25.904	-	25.904	5.255	4.589	81.207	135.012	0.000	513.583
Remarks											
D. Acquisition Strategy											
Infantry Squad Vehicle (ISV): A firm fixed priced production contract was awarded to General Motors Defense (GMD) on 26 June 2020 following successful prototype determination and findings from the ISV Other Transaction Authority (OTA). Per Army Requirements Oversight Council (AROC) on 08 February 2019, the Vice Chief Secretary of Army (VCSA) approved the Acquisition Procurement Objective (APO) of 11 Infantry Brigade Combat Team (IBCT) sets at 59 vehicles per IBCT (649 vehicles) to be completed by FY 2024. During a follow on AROC on 22 February 2019, the VCSA approved the ISV annex to the approved Special Operations Command (SOCOM) GMV1.1 Capabilities Production Document (CPD) which approved the total requirement for the ISV program. On 8 Feb 2021, AROCM 21-01 added 300 Security Force Assistance Brigades (SFAB) vehicles to the Base Of Issue Plan (BOIP) increasing the APO to 949. The APO was increased on 16 Feb 2023 to include an additional 187 ISVs for the 75th Ranger Regiment increasing the APO to 1136.											
electric Light Reconnaissance Vehicle (eLRV) :											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604642A / <i>Light Tactical Wheeled Vehicles</i>	Project (Number/Name) E40 / <i>LTV Prototype</i>
<p>Product Director Ground Mobility Vehicle (PD GMV) conducted market research and Industry coordination to assess industry capabilities and verify maturity of integration in support of an Army Requirements Oversight Council (AROC) in April 2021. eLRV Abbreviated-Capability Development Document (A-CDD) was validated July 2021. PD GMV will utilize a three-phased acquisition strategy for eLRV.</p> <p>Phase I Initial Prototypes: Will use novel acquisition approaches to award up to four vendors to procure two prototypes each for limited safety/performance testing and a Soldier Touch Point (STP). STP1 will focus on electric drive, off road mobility, and range/duration.</p> <p>Phase II Operational Prototypes: Option to down select at Critical Design Review (CDR) to up to four vendors to procure three prototypes each for additional developmental testing and STP2 focusing on operational effectiveness of militarized prototypes. Decision Point 1 (DP) will be conducted after CDR to provide transition Course of Action (COA) recommendations and updated production cost estimate.</p> <p>Phase III Transition to Production: Utilize Soldier Feedback and test data obtained during Phases I & II presented during DP2 to inform updates to Capability Development Document (CDD) and validate proposed transition path forward. COAs for path forward: COA1 Initiate a new Middle Tier of Acquisition (MTA)-Rapid Fielding, COA2 Transition to Major Capability Acquisition (MCA) Pathway at Milestone C, COA3 Transition to MCA Pathway at Milestone B, and COA4 Terminate the program.</p> <p>HMMWV Hybrid Electric Vehicle (HEV): Product Director Light Tactical Vehicle (PD LTV) plans to award a prototype development contract to design, develop and test HMMWV HEV prototypes. The program will leverage data from recent and ongoing Army Rapid Capabilities and Critical Technologies Office (RCCTO) HEV projects and commercial industry advancements to inform HMMWV HEV prototype requirements. Prototype conclusion will provide a decision point for Army Senior Leaders for transition alternatives into a production phase</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles				Project (Number/Name) E40 / LTV Prototype					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ISV Contractor Test Support	Various	General Motor Defense (GM-D) : Various	1.009	0.356	Aug 2022	-		0.030	Jan 2024	-		0.030	0.000	1.395	-
eLRV Prototypes	TBD	TBD : TBD	-	0.253	May 2022	-		0.938	Oct 2023	-		0.938	0.000	1.191	-
eLRV Contractor Test Support	TBD	TBD : TBD	-	-		-		0.429	Oct 2023	-		0.429	0.000	0.429	-
ISV Kit Development	Various	General Motor Defense (GM-D) : Various	-	-		-		2.833	Oct 2023	-		2.833	0.000	2.833	-
eLRV Contractor Management Support	TBD	TBD : TBD	-	-		-		0.939	Oct 2023	-		0.939	0.000	0.939	-
HMMWV HEV Prototypes	C/TBD	TBD : TBD	-	-		-		33.082	May 2024	-		33.082	0.000	33.082	-
HMMWV HEV Contractor Test Support	C/TBD	TBD : TBD	-	-		-		3.180	May 2024	-		3.180	0.000	3.180	-
Subtotal			1.009	0.609		-		41.431		-		41.431	0.000	43.049	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
eLRV Program Management Support	Various	PM Office : Selfridge ANG	-	0.345		-		1.158	Oct 2023	-		1.158	0.000	1.503	-
HMMWV HEV Government Management Support	Various	PM OFFICE : SELFRIDGE	-	-		-		5.836	Nov 2023	-		5.836	0.000	5.836	-
Subtotal			-	0.345		-		6.994		-		6.994	0.000	7.339	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles				Project (Number/Name) E40 / LTV Prototype					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ISV Performance and Qualification Testing	MIPR	Various : Various	7.454	0.926	May 2022	-		-		-		-	0.000	8.380	-
eLRV Test and Evaluation	MIPR	Various : Various	-	0.100	Jun 2022	-		3.004	Apr 2024	-		3.004	0.000	3.104	-
ISV Testing	MIPR	Various : Various	-	-		-		0.340	Jul 2024	-		0.340	0.000	0.340	-
HMMWV HEV Test Development	TBD	TBD : TBD	-	-		-		1.795	May 2024	-		1.795	0.000	1.795	-
Subtotal			7.454	1.026		-		5.139		-		5.139	0.000	13.619	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			8.463	1.980		-		53.564		-		53.564	0.000	64.007	N/A
Remarks															

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

Date: March 2023

Appropriation/Budget Activity

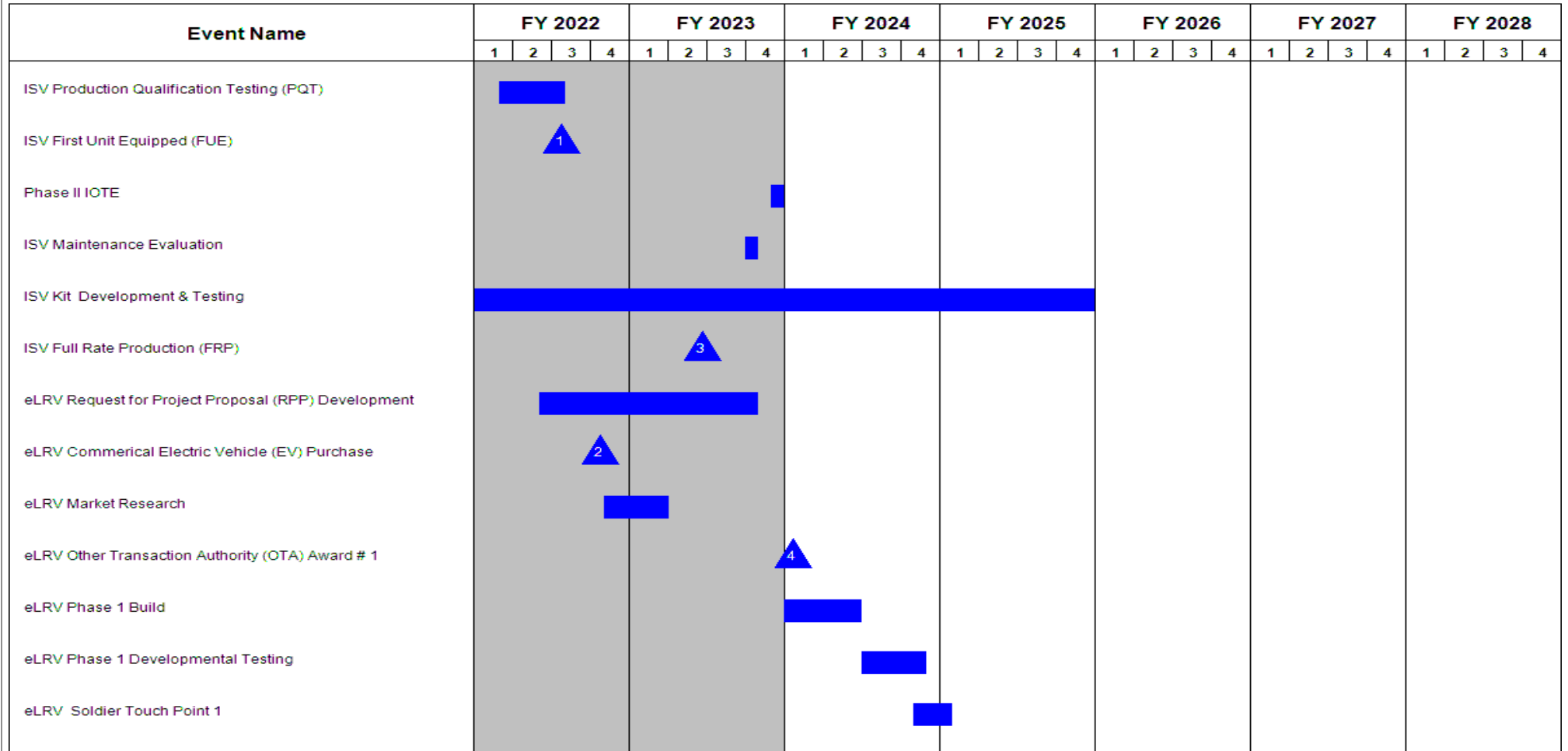
2040 / 5

R-1 Program Element (Number/Name)

PE 0604642A / Light Tactical Wheeled Vehicles

Project (Number/Name)

E40 / LTV Prototype



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604642A / <i>Light Tactical Wheeled Vehicles</i>		Project (Number/Name) E40 / <i>LTV Prototype</i>	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
eLRV Critical Design Review (CDR)													6															
eLRV Other Transaction Authority (OTA) Award # 2													7															
eLRV Knowledge Point (KP) # 1													8															
eLRV Phase 2 Build																												
eLRV Phase 2 Developmental Testing																												
eLRV Soldier Touch Point 2																												
eLRV Successful Prototype Determination (SPD)																												
eLRV Knowledge Point (KP) # 2																												
HMMWV HEV Prototype Contract Solicitation Development																												
HMMWV HEV Prototype Contract Award																												
HMMWV HEV Development																												
HMMWV HEV Prototype Build																												
HMMWV HEV Integration & Ktr Testing:																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles		Project (Number/Name) E40 / LTV Prototype	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
HMMWV HEV Prototype USG Developmental Testing																												
HMMWV HEV Production Transition Decision Point																												

Note
ISV Kit Development and Testing includes Infantry Squad Vehicle (ISV) Security Force Assistance Brigade (SFAB) kits.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles	Project (Number/Name) E40 / LTV Prototype	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ISV Production Qualification Testing (PQT)	1	2021	3	2022
ISV First Unit Equipped (FUE)	3	2022	3	2022
Phase II IOTE	4	2023	4	2023
ISV Maintenance Evaluation	4	2023	4	2023
ISV Kit Development & Testing	1	2022	4	2025
ISV Full Rate Production (FRP)	2	2023	2	2023
eLRV Request for Project Proposal (RPP) Development	2	2022	4	2023
eLRV Commerical Electric Vehicle (EV) Purchase	4	2022	4	2022
eLRV Market Research	4	2022	1	2023
eLRV Other Transaction Authority (OTA) Award # 1	1	2024	1	2024
eLRV Phase 1 Build	1	2024	2	2024
eLRV Phase 1 Developmental Testing	3	2024	4	2024
eLRV Soldier Touch Point 1	4	2024	1	2025
eLRV Critical Design Review (CDR)	1	2025	1	2025
eLRV Other Transaction Authority (OTA) Award # 2	1	2025	1	2025
eLRV Knowledge Point (KP) # 1	2	2025	2	2025
eLRV Phase 2 Build	1	2025	1	2026
eLRV Phase 2 Developmental Testing	2	2026	2	2026
eLRV Soldier Touch Point 2	3	2026	4	2026
eLRV Successful Prototype Determination (SPD)	4	2026	4	2026
eLRV Knowledge Point (KP) # 2	4	2026	4	2026
HMMWV HEV Prototype Contract Solicitation Development	2	2023	4	2024

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604642A / Light Tactical Wheeled Vehicles		Project (Number/Name) E40 / LTV Prototype
		Start		End
Events		Quarter	Year	Quarter Year
HMMWV HEV Prototype Contract Award		3	2024	3 2024
HMMWV HEV Development		3	2024	3 2025
HMMWV HEV Prototype Build		3	2025	4 2025
HMMWV HEV Integration & Ktr Testing:		1	2026	2 2026
HMMWV HEV Prototype USG Developmental Testing		2	2026	4 2026
HMMWV HEV Production Transition Decision Point		4	2026	4 2026
Note ISV Kit Development and Testing includes Infantry Squad Vehicle (ISV) Security Force Assistance Brigade (SFAB) kits.				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	0.000	118.296	63.131	102.201	0.000	102.201	65.249	0.000	0.000	0.000	0.000	348.877
EV8: Mobile Protected Firepower	-	118.296	63.131	102.201	-	102.201	65.249	-	-	-	0.000	348.877

A. Mission Description and Budget Item Justification

Infantry Brigades lack the mobile, protected firepower capability necessary to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. Mobile Protected Firepower (MPF) will provide the protected, long range, precision direct-fire capability to ensure freedom of movement during offensive operations and defeat attacking enemy during defensive operations.

The Armored Systems Modernization - Engineering Development program element is directly aligned with the Next Generation Combat Vehicle (NGCV) Army Modernization Priority.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	122.778	71.287	85.591	-	85.591
Current President's Budget	118.296	63.131	102.201	-	102.201
Total Adjustments	-4.482	-8.156	16.610	-	16.610
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-8.144			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.482	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	16.610	-	16.610
• FFRDC Transfer	-	-0.012	-	-	-

Change Summary Explanation

Adjustment to the FY 2024 budget year resources requirements to continue increased development of Mobile Protected Firepower training aids and devices.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev				Project (Number/Name) EV8 / Mobile Protected Firepower			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
EV8: Mobile Protected Firepower	-	118.296	63.131	102.201	-	102.201	65.249	-	-	-	0.000	348.877
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Infantry Brigades lack the mobile, protected firepower capability necessary to defeat enemy prepared positions, destroy enemy armored vehicles, close with the enemy through fire and maneuver, and ensure freedom of maneuver and action in close contact with the enemy. Mobile Protected Firepower (MPF) will provide the protected, long range, precision direct-fire capability to ensure freedom of movement during offensive operations and defeat attacking enemy during defensive operations.												
This program is directly aligned with the Next Generation Combat Vehicle (NGCV) Army Modernization Priority.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Product Development - LRIP Phase Logistics Products									20.367	11.330	11.104	
Description: MPF Low Rate Initial Production (LRIP) phase development activities for logistics products include Technical Manual (TM) and Training Support Package (TSP) updates, verification and demonstration of supportability tasks, evaluation of incidents during performance testing for supportability impacts, continued development of National/Depot Maintenance Work Requirements (NMWR/DMWR), continued execution of Level of Repair Analyses (LORA) and Source of Repair Analyses (SORA), the provisioning of spare parts, supportability analysis of operator and maintenance tasks, and management of the Integrated Logistics Support (ILS) program.												
FY 2023 Plans: FY 2023 efforts will continue logistics products development, to include Operator, Field Maintenance, and Battle Damage and Repair (BDAR) Manuals, initiation of Logistics Demonstration (Log Demo) planning, additive manufacturing concept exploration, predictive logistics integration, development of an interactive technical manual capability, continued LORA and Reliability & Maintainability (R&M) analyses, completion of spare parts provisioning and SORA, development of NMWRs/DMWRs, and continued creation of training products for operators, field level maintainers, and instructors.												
FY 2024 Plans: FY 2024 activities include execution of the Logistics Demonstration (Log Demo) to evaluate the adequacy of the product support package, continued LORA to determine whether vehicle parts will be replaced, repaired, or discarded should they malfunction, and NMWR/DMWR development to enable depot level sustainment of the vehicle and subsystems once MPF vehicles are fielded. Additionally, Full Material Release procedures and verification of Operator, Field Maintenance, BDAR manual development will be initiated, and New Equipment Training in support of the Initial Operational Test & Evaluation (IOT&E) will be conducted.												
FY 2023 to FY 2024 Increase/Decrease Statement:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Decrease is due to completion of the SORA and provisioning efforts.				
Title: Product Development - LRIP Phase Contractor Technical Support to Government Test Description: MPF Low Rate Initial Production (LRIP) phase development activities for Contractor Technical Support to Test include purchase of the spare parts for LRIP phase testing, root cause analysis and the development of corrective actions on test incidents, training of vehicle operators at U.S. Government test sites, initiation of vehicle lethality, survivability, and weight reduction integration efforts, and integration of system design changes informed by user feedback. Efforts also include Systems Technical Support (STS) in the form of test configuration updates to MPF vehicle subsystems and field service representatives at U.S. Government test sites to perform MPF vehicle maintenance. FY 2023 Plans: FY 2023 activities include contractor technical support and systems technical support to Toxic Fumes testing, Corrosion testing, Government System Level (SL) Live Fire testing, and Automatic Fire Extinguisher System (AFES) testing. Additionally, the procurement of long lead-time spare parts (engines, transmissions, gunner's sights) to support FY 2024 Production Qualification Testing (PQT) and the FY 2024 Initial Operational Test & Evaluation (IOT&E) will also occur. FY 2024 Plans: FY 2024 activities include contractor technical support and systems technical support to PQT, Full Up System Level (FUSL) Live Fire Testing, and Corrosion testing, initiation of support to Initial Operational Test & Evaluation (IOT&E), IOT&E material management, IOT&E technical support, and continued root cause and corrective action analysis of test incidents. Activities also include initiation of survivability, lethality, mobility, and weight reduction integration efforts, battlefield and target awareness improvements, vehicle subsystem updates leveraging commonality with existing Army systems, and integration of system design changes informed by user feedback. FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to additional test spare parts procurement, ammunition procurement, and field service representative support.		15.004	7.868	18.396
Title: Prototype Upgrade to LRIP Configuration Description: After a successful Milestone C, eight (8) prototype vehicles will be updated to the initial LRIP configuration to support LRIP phase survivability testing, logistics products development, and implementation of design changes driven by Production Qualification Testing (PQT) and Initial Operational Test and Evaluation (IOT&E). Upgrading MPF prototypes to LRIP configuration will result in substantial cost avoidance compared with producing additional LRIP vehicles to support test requirements. FY 2023 Plans:		18.302	20.064	8.483

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Material procurement and assembly labor to continue updating eight (8) MPF Prototypes to the initial LRIP configuration for use in survivability testing, logistics products development, and to aid implementation of design changes driven by PQT and IOT&E.			
FY 2024 Plans: Labor and material supporting final assembly, test, checkout, and acceptance of eight (8) MPF Prototypes upgraded to the initial LRIP configuration for use in survivability, performance, and reliability testing, logistics products development, and to aid implementation of design changes driven by PQT and IOT&E.			
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease is due to a reduction in material requirements as the prototype upgrades enter their final assembly, test, checkout, and acceptance.			
Title: LRIP Vehicles for Full-Up System-Level (FUSL) Live Fire		38.238	-
Description: New production of three (3) MPF LRIP vehicles for use in FUSL Live Fire Testing (LFT).			
Title: Government Test and Evaluation (Performance Testing)		5.425	8.973
Description: During the Rapid Prototyping phase, the Government executed performance testing on sixteen (16) prototypes (eight per contractor) and four BH&T assets (two per contractor). FY 2021 and FY 2022 performance testing during the Rapid Prototyping phase included Ballistic Hull & Turret (BH&T) survivability testing and Pre-Production Testing (PPT), which consisted of vehicle-level lethality, Reliability, Availability, and Maintainability (RAM), and electromagnetic compatibility and interference testing. PPT also contained an initial cybersecurity evaluation.			31.847
BH&T testing provided Force Protection and vehicle-level survivability data while PPT provided vehicle-level automotive, lethality, and RAM performance data. The results of Rapid Prototyping performance testing has informed the LRIP down select, which occurred on 24 June 2022.			
During the LRIP phase, the Government will execute performance testing on twelve (12) vehicles. Performance testing during the LRIP phase will include survivability testing and Production Quality Testing (PQT), which consists of vehicle-level lethality, RAM, electromagnetic compatibility and interference testing, environmental performance testing, and cybersecurity testing.			
FY 2023 Plans: In FY 2023, Prototypes, as well as Prototypes updated to LRIP configuration, will be utilized to conduct system performance testing, to include System Level (SL) Live Fire Testing (LFT), Automatic Fire Extinguisher System (AFES) testing, Controlled Damage Experiments (CDE), Special Armor testing, battery compartment ballistic testing, ammunition vulnerability testing, full-			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
load cooling testing, toxic fumes testing, and the initiation of Corrosion testing. Additionally, Modeling and System (M&S) will be conducted to demonstrate the ballistic resiliency and crew survivability of a production-representative vehicle. FY 2024 Plans: Activities include execution of the PQT and Full Up System Level (FUSL) Live Fire testing to inform the FY 2025 Full Rate Production (FRP) decision. PQT evaluating system reliability, transportability, and automotive performance will be assessed at the Yuma Test Center (YTC), Aberdeen Test Center (ATC), and the Cold Regions Test Center (CRTC). PQT environmental performance testing will be assessed at YTC and CRTC. PQT system safety will be evaluated at White Sands Missile Range (WSMR), YTC, ATC, and CRTC. PQT system safety will be evaluated at White Sands Missile Range (WSMR), YTC, ATC, and CRTC. PQT electromagnetic environmental effects (E3) testing will occur at WSMR. Fire control, lethality, and cybersecurity PQT will occur at ATC. Corrosion testing will also be completed at ATC. PQT assessing Army Interoperability Certification requirements will occur at Fort Hood, Texas. The FUSL Live Fire test will be performed at ATC and will assess ballistic resiliency and platform survivability. Additionally, ballistic survivability models and simulations will be updated with results from MPF FUSL Live Fire testing. FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to a broader and more extensive vehicle performance testing compared to FY 2023.				
Title: Government Test and Evaluation (Operational Testing) Description: During LRIP phase, the Government will execute a thirteen (13) vehicle Company-Level Initial Operational Test and Evaluation (IOT&E). The IOT&E is planned for FY 2024. FY 2024 Plans: Activities include site preparation, test planning, ATEC support to initiate execution of the MPF IOT&E, spare parts support to MPF, opposing force (OPFOR), tactical support, and other IOT&E participant vehicles, and test instrumentation of IOT&E participant vehicles. The IOT&E will evaluate the mission effectiveness, suitability, cybersecurity, and survivability of a unit equipped with MPF vehicles in an operational environment. The IOT&E will be conducted under realistic operational conditions using Army units executing decisive action operations in accordance with U.S. Army doctrine against a representative opposing force. Additionally, Soldier participants will undergo field maintenance and operator training in preparation for the IOT&E. The IOT&E will serve as a key data source for the Full Rate Production (FRP) decision. FY 2023 to FY 2024 Increase/Decrease Statement: Increase is due to the initiation of IOT&E activities in FY 2024.		-	-	10.814
Title: Training Aids and Devices Development Description: Development of aids and devices to facilitate institutional training for MPF operators and maintainers. MPF training aids and devices will include Hands on Trainers (HOT), Diagnostic/Troubleshooting Trainers (DTT), Part Task Trainers (PTT),		0.207	6.699	15.918

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Crew Modular Unit Recorders (CMUR), an Advanced Gunnery Training System (AGTS), and an MPF Combat Vehicle Tactical Engagement Simulation System (CVTESS). MPF aids and devices will be interoperable/compatible with the Army's current live Tactical Engagement Simulation (TES) systems, instrumentation systems, Common Training Instrumentation Architecture (CTIA), Live, Virtual Constructive-Integrated Architecture (LVC-IA) training enablers, and the future Synthetic Training Environment (STE).				
FY 2023 Plans: Efforts include training device development contract awards enabling software development for gunnery and maintenance training devices and development of MPF physical data interfaces enabling integration of the CVTESS and CMUR. Also, requirements development of MPF gunnery, maintenance, and collective training devices in coordination with training device material developers and Soldier representatives will continue.				
FY 2024 Plans: FY 2024 activities include contract awards for HOT, DTT, and AGTS development. HOT development will initiate the design of an MPF production representative turret and subsystem structure to enable the maintenance training of the MPF turret and its subsystems. DTT development will enable computer-based simulations of MPF repair tasks in a classroom setting using a three-dimensional (3D) virtual environment. AGTS development will include the build of prototype gunnery training devices which will train Soldiers on Gate-to-Live-Fire (GTLF) qualification and on the Crew Training Program which are exercises designed to train crew coordination supporting the execution of precision gunnery tasks.				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 is due to additional development and prototype build activity for gunnery and maintenance training devices.				
Title: Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping (RP) Phase		7.640	-	-
Description: MPF MTA RP, to include integration engineering, prototype builds, technical support to government test, and logistics products development efforts contracted to BAE Systems and General Dynamics Land Systems (GDLS).				
Title: Government Engineering and Project Management		9.764	5.893	5.639
Description: Government program management and system engineering support, to include salaries, travel, training, supplies, facilities, equipment, and support contractors necessary to manage development efforts during the MPF MTA Rapid Prototyping and LRIP phases.				
FY 2023 Plans:				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023					
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev				Project (Number/Name) EV8 / Mobile Protected Firepower					
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2022		FY 2023		FY 2024	
Continue engineering, logistics, product assurance and test, financial management, and operations support for MPF LRIP development activities from November 2022 through October 2023. Includes salaries, training, travel, supplies, facilities, and equipment to manage MPF test and evaluation and logistics products and training device development efforts. FY 2024 Plans: Continue engineering, logistics, product assurance and test, financial management, and operations support for MPF LRIP development activities from November 2023 through October 2024. Includes salaries, training, travel, supplies, facilities, and equipment to manage MPF test and evaluation and logistics products development efforts. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to a minor reductions in travel, training, supplies, facilities, equipment, and support contractors necessary to manage development efforts during the MPF MTA Rapid Prototyping and LRIP phases from FY 2023 to FY 2024.													
Title: Government Support to Product Development Description: Government support to MPF MTA Rapid Prototyping efforts, to include LRIP contract Source Selection activities, and Large Caliber Weapon System development.								3.349		-		-	
Title: SBIR/STTR Description: Requirements to support Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs. FY 2023 Plans: Requirements to support Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs. FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.								-		2.304		-	
Accomplishments/Planned Programs Subtotals								118.296		63.131		102.201	
C. Other Program Funding Summary (\$ in Millions)													
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost		
• G80820: Mobile Protected Firepower	286.977	354.708	394.635	-	394.635	558.656	569.125	590.208	620.822	Continuing	Continuing		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>	Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>	

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

Standard Serial Number (SSN) G80820 resources production of MPF. FY 2022 - FY 2024 resourcing supports MPF Low Rate Initial Production (LRIP). Resourcing in FY 2025 and beyond supports MPF Full Rate Production (FRP).

D. Acquisition Strategy

The MPF RFP was issued on 21 November 2017 as a full and open, best value competitive action. On 25 September 2018, the Army Acquisition Executive (AAE) approved the execution of MPF Rapid Prototyping activities under Section 804 of the 2016 National Defense Authorization Act (NDAA) (Public Law 114-92), Middle Tier Acquisition (Rapid Prototyping). The competitive selection process for MPF Rapid Prototyping contracts included the evaluation of written proposals and optional bid samples to provide additional substantiating data for Source Selection Evaluation. On 17 December 2018, two MPF Rapid Prototyping contracts were awarded, one to BAE Systems and the other to General Dynamics Land Systems (GDLS). On 24 June 2022 the MPF program obtained AAE Milestone C approval, and an LRIP phase contract was awarded to GDLS on 28 June 2022 for continued Logistics Products development, continued Contractor Technical Support to Test, and for the first production order of MPF vehicles. An MPF Full Rate Production (FRP) decision is targeted for 3rd Quarter, FY 2025.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev				Project (Number/Name) EV8 / Mobile Protected Firepower					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering and Project Management	MIPR	Various : Warren, MI; Picatinny, NJ	60.095	9.764	Nov 2021	5.893	Nov 2022	5.639	Nov 2023	-		5.639	5.298	86.689	-
SBIR/STTR	Various	Various : Various	-	-		2.304	Jan 2023	-		-		-	0.000	2.304	-
Subtotal			60.095	9.764		8.197		5.639		-		5.639	5.298	88.993	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development - LRIP Phase - LRIP Logistics Products	C/FFP	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	0.169	20.367	Jun 2022	11.330	Oct 2022	11.104	Oct 2023	-		11.104	3.459	46.429	46.429
Product Development - LRIP Phase - LRIP Contractor Technical Support to Government Test	C/FFP	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	-	12.442	Jun 2022	4.981	Oct 2022	9.837	Oct 2023	-		9.837	34.126	61.386	71.472
System Technical Support to Government Testing	SS/CPFF	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	-	2.562	Jun 2022	2.887	Oct 2022	8.559	Oct 2023	-		8.559	0.000	14.008	-
Prototype Upgrade to LRIP Configuration	C/FFP	General Dynamics Land Systems (GDLS) : Sterling Heights, MI	-	18.302	Jun 2022	20.064	Oct 2022	8.483	Oct 2023	-		8.483	0.129	46.978	46.966
LRIP Vehicles for Full-Up System-Level (FUSL) Live Fire	C/FPIF	TBD : TBD	-	38.238	Jun 2022	-		-		-		-	0.000	38.238	38.238
Product Development - Government Furnished Material (GFM) Procurement	Various	Various : Various	2.346	-		-		-		-		-	0.000	2.346	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023					
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev						Project (Number/Name) EV8 / Mobile Protected Firepower					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping Contracts	C/FFP	BAE Systems; General Dynamics Land Systems (GDLS) : Sterling Heights, MI; Sterling Heights, MI	697.556	7.640	Oct 2021	-		-		-		-	0.000	705.196	711.460		
Subtotal			700.071	99.551		39.262		37.983		-		37.983	37.714	914.581	N/A		
Remarks																	
Product Development - Middle Tier Acquisition (MTA) Rapid Prototyping Contracts Remark: MTA Rapid Prototyping contract costs are inclusive of both competitors during the Mobile Protected Firepower (MPF) MTA Rapid Prototyping Phase (1st Quarter FY 2019 to 3rd Quarter FY 2022). The MPF program down-selected to General Dynamics Land Systems to continue for LRIP phase activities following Milestone C approval by the Army Acquisition Executive on 24 June 2022.																	
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract		
Government Support to Product Development - Large Caliber Weapon System Development	PO	Armament Research, Development and Engineering Center (ARDEC); Watervliet Arsenal (WVA); Rock Island Arsenal (RIA) : Picatinny, NJ; Watervliet, NY; Rock Island, IL	6.220	2.030	Nov 2021	-		-		-		-	0.000	8.250	-		
Government Support to Product Development - Source Selection Evaluation Board (SSEB)	Various	Various : Various	4.992	1.319	Jan 2022	-		-		-		-	0.000	6.311	-		
Training Aids and Devices Development	Various	Program Executive Office Simulation, Training and Instrumentation	0.224	0.207	Mar 2022	6.699	Nov 2022	15.918	Nov 2023	-		15.918	16.515	39.563	-		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604645A / <i>Armored Systems Modernization (ASM) - Eng Dev</i>						Project (Number/Name) EV8 / <i>Mobile Protected Firepower</i>			
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		(PEO STRI) : Orlando, FL													
Subtotal			11.436	3.556		6.699		15.918		-		15.918	16.515	54.124	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Production Qualification Testing (PQT) at Aberdeen Test Center (ATC) & Army Interoperability Testing	PO	Aberdeen Test Center (ATC); Central Technical Support Facility (CTSF) : Aberdeen, MD; Fort Hood, TX	-	-		2.614	Jan 2023	8.424	Nov 2023	-		8.424	0.000	11.038	-
PQT at Yuma Test Center (YTC)	PO	Yuma Test Center (YTC) : Yuma, AZ	-	-		0.075	Jan 2023	5.666	Feb 2024	-		5.666	0.000	5.741	-
PQT at White Sand Missile Range (WSMR)	PO	White Sands Missile Range (WSMR) : White Sands Missile Range, NM	-	-		0.096	Jan 2023	1.928	Apr 2024	-		1.928	0.000	2.024	-
PQT at Cold Regions Test Center (CRTC)	PO	Cold Regions Test Center : Fort Greely, AK	-	-		0.100	Jan 2023	3.009	Sep 2024	-		3.009	0.000	3.109	-
Survivability, Lethality, and Full Up System Level (FUSL) Live Fire Testing	PO	Aberdeen Test Center (ATC) : Aberdeen, MD	-	-		5.887	Jan 2023	10.709	Dec 2023	-		10.709	0.770	17.366	-
Data Analysis and Evaluation Support	Various	Combat Capability Development Command - Data Analysis Center (CCDC-DAC), Army Evaluation Center (AEC), Combined Arms	-	-		0.201	Oct 2022	2.111	Nov 2023	-		2.111	0.225	2.537	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev				Project (Number/Name) EV8 / Mobile Protected Firepower					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Support Command (CASCOM) : Various													
Initial Operational Test & Evaluation (IOT&E)	PO	Operational Test Center (OTC) : Fort Hood, TX	-	-		-		10.814	Jun 2024	-		10.814	4.727	15.541	-
Middle Tier Acquisition (MTA) Rapid Prototyping (RP) Phase Performance and Operational Testing	PO	Various: ATC, YTC, WSMR : Various	36.239	5.425		-		-		-		-	0.000	41.664	-
Subtotal			36.239	5.425		8.973		42.661		-		42.661	5.722	99.020	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			807.841	118.296		63.131		102.201		-		102.201	65.249	1,156.718	N/A
Remarks															
Prior Years funding supported award of Rapid Prototyping contracts to design and build 24 total Mobile Protected Firepower (MPF) prototypes (12 per vendor) and four Ballistic Hull & Turrets (two per vendor) and initiation of Pre-production Prove-out Testing (PPT).															
FY 2021 funding supported the continuation of PPT, completion of Limited User Testing (LUT), and further development of MPF Logistics Products (Technical Manuals, Training Support Package, Repair Parts and Special Tools List). FY 2022 funding completed MPF Rapid Prototyping, executed the Low Rate Initial Production (LRIP) source selection, and awarded LRIP phase contracts to continue logistics products development and procure long lead spares for Performance Qualification Test (PQT) and Initial Operational Test & Evaluation (IOT&E). FY 2023 funding continued MPF logistics products development, initiated PQT, performed Modeling and Simulation (M&S) to aid in demonstrating system ballistic resiliency and survivability, and initiated efforts enabling integration of the Combat Vehicle Tactical Engagement Simulation System (CVTESS) and Crew Modular Unit Recorder (CMUR) training devices into the MPF vehicle. FY 2024 funding will continue LRIP phase logistics products development and contractor technical support to testing. FY 2024 will also exhibit training device contract awards for the development of the Hands on Trainer (HOT), Diagnostic Troubleshooting Trainer (DTT) and Part Task Trainer (PTT), award of the prototype contract for the Advanced Gunnery Training System (AGTS), and the execution of PQT and IOT&E.															

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

Date: March 2023

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev

Project (Number/Name)

EV8 / Mobile Protected Firepower

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Milestone C (MS C)			1 MS C																									
Full Rate Production (FRP) Decision													5 FRP Decision															
Full Material Release (FMR)													7 FMR															
First Unit Equipped (FUE)													8 FUE															
Risk Reduction of Large Caliber Weapon System																												
Mobile Protected Firepower (MPF) Rapid Prototyping Phase																												
Prototype Deliveries (24 Prototypes)																												
Pre-Production Test (PPT)																												
Limited User Training (LUT)																												
Training Support Package (TSP) Development																												
Maintenance Task Analysis (MTA) and Level Of Repair Anal...																												
Technical Manual (TM) Development																												
TM Validation																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev		Project (Number/Name) EV8 / Mobile Protected Firepower	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
TM Development Update																												
TM Verification																												
Level of Repair Analysis (LORA)																												
Source of Repair Analysis (SORA)																												
Training Support Package (TSP) Update																												
National/Depot Maintenance Work Instruction (NMWR/DMWR)/B...																												
Spares Provisioning																												
Logistics Demonstration (Log Demo)																												
Prototype Vehicle Updates to LRIP Configurations (Qty 8)																												
Corrosion Testing																												
CDE/SL/AFES Testing																												
Supportability Assessment (SA)																												
Training Devices Requirements Refinement Performance Spe...																												

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

Date: March 2023

Appropriation/Budget Activity

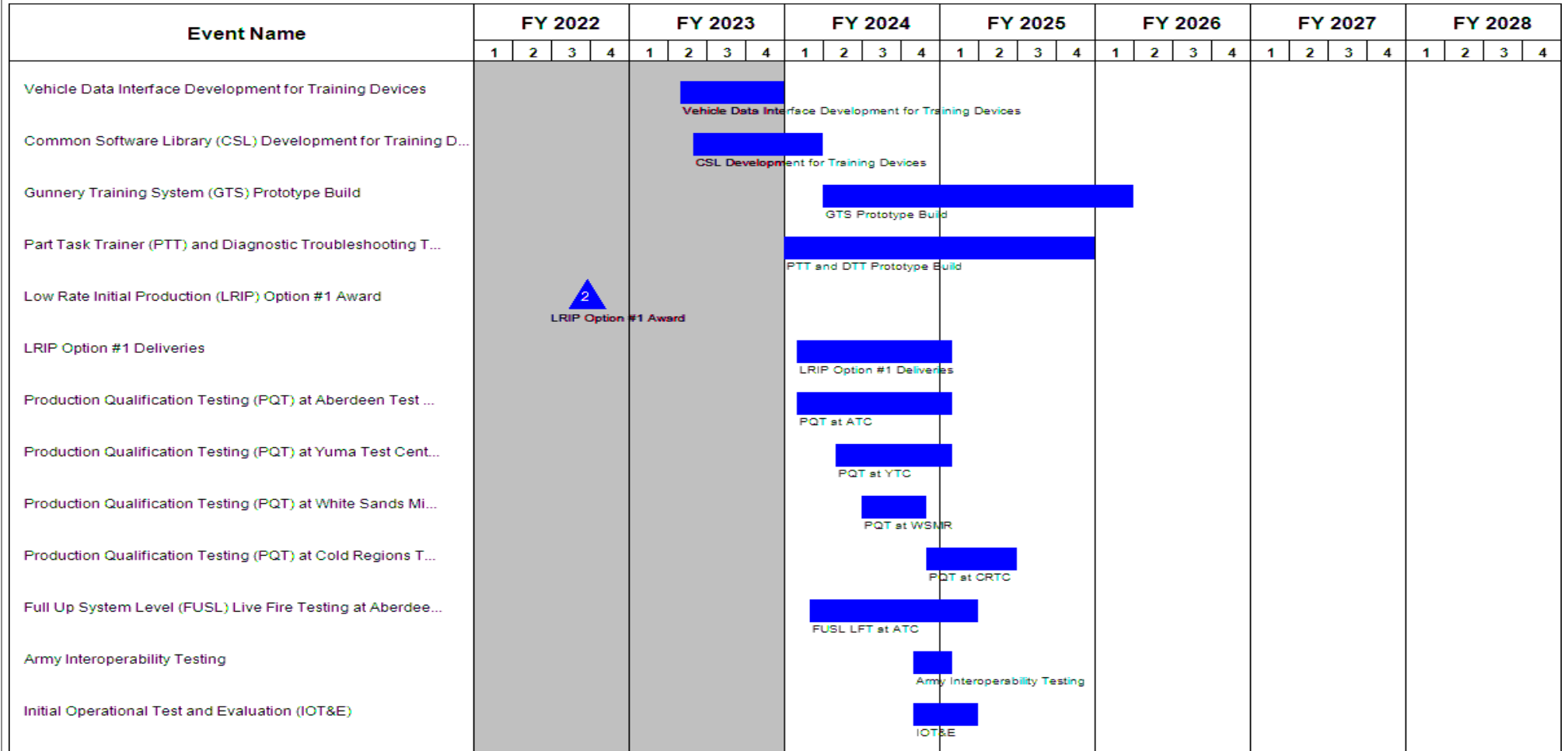
2040 / 5

R-1 Program Element (Number/Name)

PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev

Project (Number/Name)

EV8 / Mobile Protected Firepower



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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
2040 / 5		PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev		EV8 / Mobile Protected Firepower	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
LRIP Option #2 Award							3																					
LRIP Option #2 Deliveries																												
LRIP Option #3 Award												4																
LRIP Option #3 Deliveries																												
FRP Lot #1 Award																												
FRP Lot #1 Deliveries																												
FRP Lot #2 Award																												
FRP Lot #2 Deliveries																												
FRP Lot #3 Award																												
FRP Lot #3 Deliveries																												
FRP Lot #4 Award																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev	Project (Number/Name) EV8 / Mobile Protected Firepower	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Section 804 MTA Rapid Prototyping Designation	4	2018	4	2018
Milestone C (MS C)	3	2022	3	2022
Full Rate Production (FRP) Decision	2	2025	2	2025
Full Material Release (FMR)	4	2025	4	2025
First Unit Equipped (FUE)	4	2025	4	2025
Request for Proposal (RFP) Release	1	2018	1	2018
Risk Reduction of Large Caliber Weapon System	3	2017	3	2022
Middle Tier Acquisition (MTA) Source Selection Evaluation Board (SSEB)	2	2018	1	2019
Rapid Prototyping Contract Awards	1	2019	1	2019
Mobile Protected Firepower (MPF) Rapid Prototyping Phase	1	2019	3	2022
Design Maturity Review (DMR)	3	2019	3	2019
Ballistic Hull & Turret (BH&T) Deliveries (4 BH&Ts)	1	2021	2	2021
BH&T Test Readiness Review (TRR)	1	2021	1	2021
BH&T Test	2	2021	4	2021
Prototype Deliveries (24 Prototypes)	3	2020	2	2022
Pre-Production Test (PPT)	4	2020	2	2022
Soldier Vehicle Assessment (SVA) Readiness Review (RR)	1	2021	1	2021
SVA	2	2021	4	2021
Limited User Training (LUT)	4	2021	1	2022
Training Support Package (TSP) Development	2	2019	3	2022
Maintenance Task Analysis (MTA) and Level Of Repair Analysis (LORA)	2	2019	3	2022
Technical Manual (TM) Development	2	2019	3	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev		Project (Number/Name) EV8 / Mobile Protected Firepower	
Events	Start		End	
	Quarter	Year	Quarter	Year
TM Validation	3	2021	3	2022
TM Development Update	1	2023	4	2024
TM Verification	2	2024	4	2024
Level of Repair Analysis (LORA)	3	2022	2	2025
Source of Repair Analysis (SORA)	3	2022	3	2023
Training Support Package (TSP) Update	3	2022	3	2025
Nationa/Depot Maintenance Work Instruction (NMWR/DMWR)/Battle Damage Assessment and Repair (BDAR) Development	3	2022	3	2025
Spares Provisioning	3	2022	4	2023
Logistics Demonstration (Log Demo)	1	2024	2	2024
Prototype Vehicle Updates to LRIP Configurations (Qty 8)	3	2022	2	2024
Corrosion Testing	2	2023	2	2024
CDE/SL/AFES Testing	4	2022	4	2023
Supportability Assessment (SA)	1	2022	1	2022
Training Devices Requirements Refinement Performance Spec Development	2	2019	4	2023
Vehicle Data Interface Development for Training Devices	2	2023	4	2023
Common Software Library (CSL) Development for Training Devices	2	2023	1	2024
Gunnery Training System (GTS) Prototype Build	2	2024	1	2026
Part Task Trainer (PTT) and Diagnostic Troubleshooting Trainer (DTT) Prototype Build	1	2024	4	2025
Low Rate Initial Production (LRIP) Option #1 Award	3	2022	3	2022
LRIP Option #1 Deliveries	1	2024	1	2025
Production Qualification Testing (PQT) at Aberdeen Test Center (ATC)	1	2024	1	2025
Production Qualification Testing (PQT) at Yuma Test Center (YTC)	2	2024	1	2025
Production Qualification Testing (PQT) at White Sands Missile Range (WSMR)	3	2024	4	2024
Production Qualification Testing (PQT) at Cold Regions Test Center (CRTC)	4	2024	2	2025
Full Up System Level (FUSL) Live Fire Testing at Aberdeen Test Center (ATC)	1	2024	1	2025

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604645A / Armored Systems Modernization (ASM) - Eng Dev		Project (Number/Name) EV8 / Mobile Protected Firepower
		Start		End
Events	Quarter	Year	Quarter	Year
Army Interoperability Testing	4	2024	1	2025
Initial Operational Test and Evaluation (IOT&E)	4	2024	1	2025
LRIP Option #2 Award	3	2023	3	2023
LRIP Option #2 Deliveries	1	2025	1	2026
LRIP Option #3 Award	3	2024	3	2024
LRIP Option #3 Deliveries	1	2026	1	2027
FRP Lot #1 Award	3	2025	3	2025
FRP Lot #1 Deliveries	1	2027	1	2028
FRP Lot #2 Award	3	2026	3	2026
FRP Lot #2 Deliveries	1	2028	1	2029
FRP Lot #3 Award	3	2027	3	2027
FRP Lot #3 Deliveries	1	2029	1	2030
FRP Lot #4 Award	3	2028	3	2028
FRP Lot #4 Deliveries	1	2030	1	2031

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	41.831	92.951	48.720	-	48.720	104.429	92.382	92.709	93.742	Continuing	Continuing
BQ6: Visual Augmentation System Eng Dev	-	6.254	68.043	7.973	-	7.973	70.982	72.490	73.262	74.079	Continuing	Continuing
L67: Soldier Night Vision Devices	-	11.482	4.435	6.061	-	6.061	5.826	5.716	5.776	5.840	Continuing	Continuing
L70: Night Vision Dev Ed	-	19.166	9.039	10.521	-	10.521	7.648	7.690	7.771	7.858	Continuing	Continuing
L79: Joint Effects Targeting Systems (JETS)	-	4.929	11.434	24.165	-	24.165	19.973	6.486	5.900	5.965	Continuing	Continuing

A. Mission Description and Budget Item Justification

A portion of this funding line is directly aligned to the Army Soldier Lethality Modernization Priority in support of situational awareness for the Close Combat Soldier. This program element provides night vision/reconnaissance, surveillance and target acquisition technologies required for United States defense forces to engage enemy forces twenty-four hours a day under conditions of degraded visibility due to darkness, adverse weather, battlefield obscurants, foliage and man-made structures. These developments and improvements to high performance night vision electro-optics, radar, laser, and thermal systems and integration of related multi-sensor suites will enable near to long range target acquisition, identification and engagement to include significant fratricide reduction, which will improve battlefield command and control in "around-the-clock" combat operations.

Project BQ6 This project focuses on transitioning demonstrated technologies that bring improvements to the dismounted Soldier's augmented vision and situational awareness system and provide Soldiers with the ability to fight, rehearse, train and win during multi-domain operations. Funded efforts will accelerate the implementation of components, terrain shared coordinate data and processing, algorithms including machine learning/artificial intelligence and demonstrations in support of the next generation augmented vision and situational awareness. Efforts will provide rapid decision making and targeting capabilities with the integration of external video and data sources such as weapon sights, unmanned air and ground vehicles and other data sources enabled by tactical cloud package and advanced network services. This project will provide data driven analytics to optimize unit performance and enhance lethality and to enable Synthetic Training Environment (STE) squad capability to perform live mixed reality training and rehearsing. This project includes costs for efforts associated with movement of information and high level processing, integration, and interface of products with the Soldiers' head, body, weapon, and transportation. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy. This project supports the Soldier Lethality Cross Functional Team. Congressional Interest Item funding provided for continued 1.2 development.

The total cost of the Integrated Visual Augmentation System Rapid Prototyping Middle Tier of Acquisition effort is \$871 million RDT&E from FY18 to FY21. The total cost of the IVAS 1.2 Middle Tier of Acquisition effort is \$221 million RDT&E from FY23 to FY24.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				
Project L67 project develops, improves and miniaturizes high performance electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. It focuses on adapting demonstrated technologies that bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability. This project includes cost associated with efforts for the development, integration and interface of products on Soldiers head, body and weapons. Funding in this project supports the Army's Soldier Lethality Cross Functional Teams (SL CFT) initiatives. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.						
Project L70 focuses on night vision, reconnaissance, surveillance and target acquisition (RSTA) sensor and suites of sensors to provide well-defined surveillance and targeting capabilities for a variety of Current, Modular, and Future Force platforms. This project includes: 3rd Generation Forward Looking Infra-Red (3GEN FLIR) B-Kit development activities, the 3GEN Long Range Advanced Scout Surveillance System (LRAS3) Modification Work Order (MWO) to integrate 3GEN FLIR B-Kit, and the Assistant Secretary of the Army for Acquisition, Logistics, and Technology ASA(ALT) Common Operating Environment (COE) effort to meet sensor interoperability requirements and improve the soldier-machine interface of the Program of Record (POR).						
Project L79 is an Army program with joint information (Air Force and Marine Corps). JETS addresses the one-man, hand-held precision targeting gap identified by the Fires Center of Excellence (FCoE). JETS is a light-weight, handheld system that will provide the single dismounted observer with a common, enhanced day and night thermal capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. JETS Target Location and Designation System (TLDS) will be able to interface with existing and future Forward Entry Systems (FESs) and operate in environments where global positioning system (GPS) capabilities are degraded or denied including the integration of military GPS user equipment (M-Code) GPS receivers. This project will address continued development and integration of improved precision targeting components to reduce size, weight, power, and cost of systems for dismounted precisions Fires mission. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		43.417	62.679	38.594	-	38.594
Current President's Budget		41.831	92.951	48.720	-	48.720
Total Adjustments		-1.586	30.272	10.126	-	10.126
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-3.228			
• Congressional Rescissions		-	-			
• Congressional Adds		-	33.500			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-1.586	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	10.126	-	10.126

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604710A I Night Vision Systems - Eng Dev	
Congressional Add Details (\$ in Millions, and Includes General Reductions)		FY 2022	FY 2023
Project: BQ6: Visual Augmentation System Eng Dev			
Congressional Add: HUD Congressional Add		-	33.500
Congressional Add Subtotals for Project: BQ6		-	33.500
Congressional Add Totals for all Projects		-	33.500
Change Summary Explanation Increase in FY 2024 funding request from Previous President's Budget to Current President's Budget due to Army investment in Joint Effects Targeting Systems (JETS).			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) BQ6 / Visual Augmentation System Eng Dev			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
BQ6: Visual Augmentation System Eng Dev	-	6.254	68.043	7.973	-	7.973	70.982	72.490	73.262	74.079	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project focuses on transitioning demonstrated technologies that bring improvements to the dismounted Soldier's augmented vision and situational awareness system and provide Soldiers with the ability to fight, rehearse, train and win during multi-domain operations. Funded efforts will accelerate the implementation of components, terrain shared coordinate data and processing, algorithms including machine learning/artificial intelligence and demonstrations in support of the next generation augmented vision and situational awareness. Efforts will provide rapid decision making and targeting capabilities with the integration of external video and data sources such as weapon sights, unmanned air and ground vehicles and other data sources enabled by tactical cloud package and advanced network services. This project will provide data driven analytics to optimize unit performance and enhance lethality and to enable Synthetic Training Environment (STE) squad capability to perform live mixed reality training and rehearsing. This project includes costs for efforts associated with movement of information and high-level processing, integration, and interface of products with the Soldiers' head, body, weapon, and transportation. Funding for this project aligns with the Army's priorities in support of the National Defense Strategy. This project supports the Soldier Lethality Cross Functional Team.

Congressional Interest Item funding provided for continued 1.2 development.

The total cost of the Integrated Visual Augmentation System Rapid Prototyping Middle Tier of Acquisition effort is \$871 million RDT&E from FY18 to FY21. The total cost of the IVAS 1.2 Middle Tier of Acquisition effort is \$221 million RDT&E from FY23 to FY24.

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

	FY 2022	FY 2023	FY 2024
Title: Heads Up Display (HUD)	6.254	33.282	7.973
Description: Integrated Visual Augmentation System (IVAS) HUD provides a digital platform for Soldier to fight, rehearse, and train in day and night that provides increased lethality, mobility, and situational awareness necessary to achieve overmatch against our current and future adversaries.			
FY 2023 Plans: Optimize IVAS 1.2 prototype performance and address IVAS 1.2 manufacturability and producibility. Begin test and evaluation of IVAS 1.2.			
FY 2024 Plans: Improve IVAS 1.2 producibility and reliability. Continue test and evaluation of IVAS 1.2			
FY 2023 to FY 2024 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>				Project (Number/Name) BQ6 / <i>Visual Augmentation System Eng Dev</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2022	FY 2023	FY 2024	
Change in funding for FY 2024 reflects costs for IVAS 1.2 developmental efforts.											
Title: SBIR/STTR Transfer								-	1.261	-	
Description: Funding transferred in accordance with Title 15 USC 638											
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638											
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638											
Accomplishments/Planned Programs Subtotals								6.254	34.543	7.973	
								FY 2022	FY 2023		
Congressional Add: HUD Congressional Add								-	33.500		
FY 2023 Plans: Congressional Interest Item funding provided for continued 1.2 development.											
Congressional Adds Subtotals								-	33.500		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• K36402: <i>IVAS/Heads Up Display</i>	405.140	-	89.451	-	89.451	-	-	-	-	Continuing	Continuing
• BQ5: <i>Visual Augmentation System Advanced Development</i>	56.463	86.594	67.935	-	67.935	29.084	29.703	30.021	30.356	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Based on the IVAS Operational Test results, the Army is adjusting the IVAS program plan to field a limited number of IVAS 1.0 and IVAS 1.1 systems while accelerating the development, production, and fielding of IVAS 1.2. IVAS 1.2 will be accomplished as a technology insertion to the base production agreement was awarded in Dec 2022. Initial Low Rate 1.2 variant representative deliveries are slated for 1QFY2024, a second lot of Improved Low Rate 1.2 units are expected to begin in 4QFY2024. IVAS 1.2 OT in 4QFY2024 will validate the system improvements and inform a production and fielding decision in 1QFY2025. IVAS will transition to a Major Capability Acquisition pathway no later than October 2025.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) BQ6 / Visual Augmentation System Eng Dev					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	MIPR	Various : Various	17.876	0.023	Sep 2022	-		-		-		-	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	To Be Determined : To Be Determined	-	-		1.261	Mar 2023	-		-		-	0.000	1.261	-
Subtotal			17.876	0.023		1.261		-		-		-	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Heads Up Display (HUD)	Various	Various : Various	27.919	-		0.220	Feb 2023	0.226	Nov 2023	-		0.226	Continuing	Continuing	-
Vehicle Integration	Various	Various : Various	-	0.026	Aug 2022	-		-		-		-	Continuing	Continuing	-
Heads Up Display (HUD)	C/FFP	Microsoft : Redmond, WA	-	2.689	Dec 2022	63.340	Dec 2023	4.677	Mar 2024	-		4.677	Continuing	Continuing	-
Subtotal			27.919	2.715		63.560		4.903		-		4.903	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IVAS HUD Testing	MIPR	Various : Various	10.476	3.516	Feb 2023	3.222	Sep 2023	3.070	Mar 2024	-		3.070	Continuing	Continuing	-
Subtotal			10.476	3.516		3.222		3.070		-		3.070	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			56.271	6.254		68.043		7.973		-		7.973	Continuing	Continuing	N/A
Remarks Some cost categories include multiple efforts, so award date is the last date where funds were awarded. FY 2024 BQ6 funds are dedicated to IVAS 1.2 producibility and testing.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) BQ6 / Visual Augmentation System Eng Dev	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Improved Technology Production Transition	Development																											
Operational Test																												
Follow-on Testing (Production Improvements)					Development																							
HUD and System Improvements													Development															
1.2 Tech Insertion					Development																							
1.2 Test					Development																							
Extensibility and Platform Integration					Development																							
1.3 / 2.0 Development Cycle																	Development											

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) BQ6 / Visual Augmentation System Eng Dev

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Heads Up Display (HUD)	4	2018	4	2020
Improved Technology Production Transition	4	2021	2	2025
Operational Test	3	2022	4	2022
Follow-on Testing (Production Improvements)	1	2023	4	2024
HUD and System Improvements	1	2025	4	2028
1.2 Tech Insertion	1	2023	1	2025
1.2 Test	1	2023	4	2025
Extensibility and Platform Integration	2	2023	4	2028
1.3 / 2.0 Development Cycle	2	2026	2	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L67 / Soldier Night Vision Devices			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L67: Soldier Night Vision Devices	-	11.482	4.435	6.061	-	6.061	5.826	5.716	5.776	5.840	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops, improves and miniaturizes high performance electro-optics, thermal and laser systems. It also provides for systems integration of related multi-sensor suites to enable near to long-range target acquisition and engagement as well as improved battlefield command and control in around-the-clock combat operations. It focuses on adapting demonstrated technologies that bring improvements to the dismounted Soldiers' equipment. This project develops or enhances equipment that provides the individual Soldier's day/night situational awareness and individual targeting capability and supports the Night Vision Goggles Modernization Strategy. This project includes cost associated with efforts for the development, integration and interface of products on Soldiers head, body and weapons. Funding in this project supports the Army's Soldier Lethality Cross Functional Teams (SL CFT) initiatives. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

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

	FY 2022	FY 2023	FY 2024
Title: Family of Weapon Sights (FWS)	3.509	0.946	2.027
<p>Description: There are three variants in the Family of Weapon Sights: FWS-Individual (FWS-I), FWS-Crew Served (FWS-CS) and FWS-Sniper (FWS-S). These sights enable combat forces to acquire and engage targets with small arms and conduct surveillance and fire control under day/night obscurants, no-light, and adverse weather conditions. The FWS utilizes advancements in thermal and low light level sensors to produce sights operable in-line with a day optic or in stand-alone mode. This RDT&E project integrates smaller pixel thermal detectors/imagers in high definition formats with improved sensitivity, clarity, and range, while simultaneously reducing the size, weight and power consumption for all FWS variants and provides a minimum of a 20% overmatch for each of the weapon platforms they are intended.</p> <p>The FWS-I variant is a weapon-mounted thermal sensor that enables Soldiers to fire quickly and accurately from any carry position and with significantly reduced exposure to enemy fire by providing a wireless, zeroed weapon aimpoint in the Soldier's Enhanced Night Vision Goggle - Binocular (ENVG-B) or Integrated Visual Augmentation System (IVAS). FWS-I requires RDT&E in FY2022 and FY2023 to design and qualify a second vendor in production, because additional capacity is required to meet the increase AAO of 112K.</p> <p>The FWS-CS variant leverages the success of the FWS-I development effort, and will be the primary sight for the MK19, M240B and M2. The FWS-CS system integrates High Definition (HD) Thermal and Day Color imagers, an Integrated Laser Range Finder (ILRF) and ballistic calculator to provide Soldiers with an accurate aimpoint that adjusts automatically for range, ammunition</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev		Project (Number/Name) L67 / Soldier Night Vision Devices	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
<p>characteristics, vertical angle, and weapon cant. The FWS-CS includes a wireless HD Helmet Mounted Display (HMD) that receives weapon sight imagery allowing the Soldier to utilize the weapon sight without requiring them to look through the weapon sights eyepiece. This wireless HMD provides the opportunity for the Solder to stay in a protected, unexposed posture while still accurately detecting and engaging targets. Additionally, the FWS-CS will integrate into Adaptive Squad Architecture and wirelessly share video and data with the Night Vision Systems (NVS) and the Nett Warrior End User Device (EUD). All wireless communication will be through the Intra Soldier Wireless (ISW) Network.</p> <p>The FWS-S variant utilizes a HD thermal sensor and mounts in-line with the Sniper's direct view optic providing a thermal capability without the need to remove or re-boresight the current direct view optic. The FWS-S provides Snipers a large format display with increased pixel density that enables accurate long range engagements in all battlefield conditions while utilizing the direct view optic's aiming features, extending lethality and providing exceptional observation.</p> <p>FY 2023 Plans: FWS Crew Served will conduct reliability growth testing, production qualification testing, and operational testing to support Low Rate Initial Production. FWS Individual will also conduct testing to support qualification of a second vendor for production and collection of weapons firing data on various weapon systems.</p> <p>FY 2024 Plans: Both FWS Individual and FWS Crew Served will continue to conduct operational and airborne testing, to include an Airborne Limited User Test for FWS-CS. In addition, integration efforts between FWS Individual and the fused awareness system.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The increase in funding from FY23 to FY24 is due to the integration efforts between FWS Individual and the fused awareness system.</p>					
<p>Title: Enhanced Night Vision Goggle - Binocular (ENVG-B)</p> <p>Description: The ENVG-B system is a modular helmet-mounted, passive electro-optical fused sensor imaging device in a binocular configuration. The system integrates dual Image Intensification (I2) sensors with the thermal sensor imagery into a single viewing display. The thermal sensor provides the Soldier with the capability to rapidly detect and recognize human-sized targets in adverse weather, obscurants and in varying light conditions. The dual I2 sensors provide the Soldier with depth perception for ease of low-light level maneuvers and the ability to detect rifle-mounted aiming lights to engage targets. The ENVG-B can also be operated in a monocular configuration by moving one of the two individually rotating monoculars. The ENVG- B has a near infrared (NIR) emitting light source that provides illumination for close-up viewing. The ENVG-B mounts on current Soldier equipment, including the Advanced Combat Helmet (ACH), the Enhanced Combat Helmet (ECH) and Integrated Head Protection System (IHPS). The ENVG-B has a multi-point wireless interface to the FWS-I and Nett Warrior in order to support augmented</p>			5.039	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L67 / <i>Soldier Night Vision Devices</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
reality requirements. The ENVG-B wirelessly operates with the FWS-I to provide Rapid Target Acquisition (RTA) capability. RTA is the capability to view the boresighted/zeroed weapon sight reticle in the ENVG- B display, enabling the Soldier to accurately engage targets without having to bring the weapon to eye level and without the use of active lasers, all while remaining in defilade.			
Title: Night Vision Device - Next (NVD-N) (formerly Night Vision Goggle-Next (NVG-N)) Description: NVD-N provides the capability to engage threat personnel at night or in low light conditions with greater clarity, depth perception, and increased recognition range for engagements. NVD-N systems will replace Soldiers' legacy monocular AN/PVS-14s and bi-ocular AN/PVS-7s increasing the Soldiers' situational awareness, mobility, speed, and effectiveness to support an increased operational tempo. FY 2023 Plans: Initiate the development and testing of the NVD-N product in support of the Situational Awareness Modernization Strategy. FY 2024 Plans: Continue development and testing of the NVD-N product in support of the Situational Awareness Modernization Strategy. FY 2023 to FY 2024 Increase/Decrease Statement: The FY2023 to FY2024 funding increase continues NVD-N risk reduction efforts through revision and update of unit cost trade studies.		-	1.935
Title: Small Tactical Optical Rifle Mounted (STORM) Description: The STORM Micro-Laser Range Finder (MLRF) is a weapon-mounted multi-function laser system. It provides an eye safe laser range finder, digital compass, Infrared (IR) and visible aiming lights, and an IR illuminator for far target location with continuous range, accuracy, weight and power performance enhanced capabilities. Funding supports qualifying smaller, lighter, and a less expensive STORM variant for Soldiers. Funding also supports integrating ballistics calculator and in-line display capabilities into the STORM as well as a power/data rail interface to support the sharing of laser range finder (LRF) data to other enablers on the weapon.		1.029	-
Title: Laser Target Locator Module (LTLM) Description: LTLM is a Lightweight, Handheld Laser Target Locator with a direct view optic, un-cooled thermal camera, eye-safe laser range finder, digital magnetic compass, and an internal Selective Availability Anti-Spoofing Module (SAASM) GPS receiver, which provides the dismounted observer or Scout a fully digital, handheld system to accurately determine target location and the ability to call for fire during all weather and light conditions. FY 2023 Plans:		1.905	1.392
			1.134

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L67 / <i>Soldier Night Vision Devices</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
FY 2023 funding will support the qualification and Government testing for the upgraded LTLM variant beginning in the 2Q FY 2023. FY 2024 Plans: Funding for FY 2024 will support the completion of testing and qualification of the LTLM upgraded variant. FY 2023 to FY 2024 Increase/Decrease Statement: The decrease in funding from FY 2023 to FY 2024 is due to the completion of the LTLM upgraded variant's testing and qualification.			
Title: SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC 638 FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.	-	0.162	-
Accomplishments/Planned Programs Subtotals	11.482	4.435	6.061

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• VT7: <i>Soldier Maneuver Sensors - Adv Dev</i>	3.639	8.839	3.729	-	3.729	3.589	3.707	3.746	3.787	Continuing	Continuing
• K22002: <i>FWS-INDIVIDUAL</i>	151.956	143.833	129.807	-	129.807	147.556	95.922	94.803	94.234	0.000	858.111
• K35110: <i>Small Tactical Optical Rifle Mounted MLRF</i>	21.103	11.357	15.484	-	15.484	11.119	2.217	1.599	11.338	Continuing	Continuing
• B53800: <i>Laser Target Locator Systems</i>	27.771	34.229	21.539	-	21.539	22.055	2.820	2.846	21.942	Continuing	Continuing
• K22003: <i>FWS-CREW SERVED</i>	25.673	33.850	42.649	-	42.649	51.220	-	-	46.863	Continuing	Continuing
• K22004: <i>FWS-SNIPER</i>	11.101	11.000	13.178	-	13.178	13.491	13.213	13.483	13.711	Continuing	Continuing
• BQ5: <i>Visual Augmentation System Advanced Development</i>	56.463	86.594	67.935	-	67.935	29.084	29.703	30.021	30.356	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>				Project (Number/Name) L67 / <i>Soldier Night Vision Devices</i>			
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2024</u>	<u>FY 2024</u>	<u>FY 2024</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Complete</u>	<u>Total Cost</u>
• BQ6: <i>Visual Augmentation System Eng Dev</i>	6.254	68.043	7.973	-	7.973	70.982	72.490	73.262	74.079	Continuing	Continuing
• K36400: <i>Helmet Mounted Enhanced Vision Devices</i>	234.906	300.000	30.153	-	30.153	-	-	-	-	0.000	565.059
Remarks											
D. Acquisition Strategy											
The various developmental programs in this project continue to exercise competitively awarded contracts using best value source selection procedures.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L67 / Soldier Night Vision Devices					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PROGRAM MGMT	MIPR	Various : Various	24.009	0.804	Nov 2021	0.867	Nov 2022	0.850	Nov 2023	-		0.850	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.167	Mar 2023	-		-		-	0.000	0.167	-
Subtotal			24.009	0.804		1.034		0.850		-		0.850	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Weapon Sights-Individual (FWS-I)	C/FFP	Various : Various	-	3.046	Apr 2022	-		1.687	Feb 2024	-		1.687	0.000	4.733	-
Enhanced Night Vision Goggle - Binocular (ENVG-B)	C/FFP	L3Harris Corporation: : Londonderry, NH	16.129	1.549	May 2022	-		-		-		-	0.000	17.678	-
Enhanced Night Vision Goggle - Binocular (ENVG-B)	C/FFP	Elbit Systems of America : Roanoke, VA	12.579	1.549	May 2022	-		-		-		-	0.000	14.128	-
Night Vision Device - Next	C/TBD	TBD : TBD	-	-		0.796	Aug 2023	0.812	Feb 2024	-		0.812	Continuing	Continuing	-
STORM II	C/CPFF	L3H : Londonderry, NH	2.010	0.280	Jan 2022	-		-		-		-	0.000	2.290	-
Laser Target Location Module (Optics 1)	C/CPFF	Optics 1 : Bedford, NH	4.351	1.080	Apr 2022	-		-		-		-	0.000	5.431	-
Subtotal			35.069	7.504		0.796		2.499		-		2.499	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	RTI : Ft Belvoir, VA	30.301	0.387	Dec 2021	0.519	Dec 2022	0.540	Dec 2023	-		0.540	Continuing	Continuing	-
Subtotal			30.301	0.387		0.519		0.540		-		0.540	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L67 / Soldier Night Vision Devices					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support Activity	MIPR	Army Test and Evaluation Command : Various	65.517	2.787	Mar 2022	2.086	Mar 2023	2.172	Mar 2024	-		2.172	Continuing	Continuing	-
Subtotal			65.517	2.787		2.086		2.172		-		2.172	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			154.896	11.482		4.435		6.061		-		6.061	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>		Project (Number/Name) L67 / <i>Soldier Night Vision Devices</i>	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
FWS-I Contract 2nd Source / Design Qualification																												
FWS-I and the fused awareness system																												
FWS-CS Qualification Testing																												
FWS-S (GOTS Systems) Limited User Testing (LUT)																												
FWS-S Directed Requirement (DR)																												
ENVG-B LRIP Qualification																												
STORM II Qualification Testing																												
STORM II Wireless Technology Integration																												
STORM II - Power Data Rail Integration																												
LTLM M-Code GPS Integration																												
Advanced Sensor Development/Enhancements																												
Night Vision Device-Next Qualification & Government Testing																												
Night Vision Device-Next MS C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L67 / Soldier Night Vision Devices	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FWS-I Contract 2nd Source / Design Qualification	3	2022	2	2023
FWS-I and the fused awareness system	1	2024	2	2026
FWS-CS Qualification Testing	2	2021	4	2023
FWS-S (GOTS Systems) Limited User Testing (LUT)	3	2021	1	2022
FWS-S Directed Requirement (DR)	1	2022	1	2022
ENVG-B LRIP Qualification	4	2020	2	2022
STORM II Qualification Testing	2	2019	2	2022
STORM II Wireless Technology Integration	2	2019	4	2022
STORM II - Power Data Rail Integration	1	2024	2	2026
LTL M-Code GPS Integration	2	2021	3	2023
Advanced Sensor Development/Enhancements	3	2026	4	2028
Night Vision Device-Next Qualification & Government Testing	4	2023	2	2026
Night Vision Device-Next MS C	3	2026	3	2026

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L70 / Night Vision Dev Ed			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L70: Night Vision Dev Ed	-	19.166	9.039	10.521	-	10.521	7.648	7.690	7.771	7.858	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The project supports the 3rd Generation Forward Looking Infrared (3GEN FLIR) B-Kit program, which incorporates the next generation of forward looking infrared technologies. The 3GEN FLIR program provides a common 3GEN FLIR B-Kit for integration into US Army FLIR sensor systems in accordance with the approved Improved Forward Looking Infrared (I-FLIR) Capability Development Document (CDD). The common 3GEN FLIR B-Kit will initially integrate with the Abrams platform, and is planned for integration into future platforms such as the Next Generation Combat Vehicle / Optionally Manned Fighting Vehicle (NGCV/OMFV) platform with the potential for 3GEN FLIR components to be utilized in future reconnaissance and airborne applications. The 3GEN FLIR B-Kit provides Mid Wave Infrared and Long Wave Infrared digital video and the electronic interfaces required to integrate the 3GEN FLIR technology with the host platform sensor. When integrated in platform sensor packages, 3GEN FLIR technology enhances the warfighters' survivability and lethality through increased identification range performance, while enabling the detection of difficult or obscured targets and faster threat detection through automated processes. Executing Army guidance to implement product improvements that will incorporate advancements in digital processing and artificial intelligence to ensure the sensor overmatch provided by 3GEN FLIR is maintained. The 3GEN FLIR B-Kit program is also a key element in maintaining the Army's FLIR industrial base.

FY 2024 Base funding in the amount of \$10.521 million supports the 3GEN FLIR B-Kit program activities.

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

	FY 2022	FY 2023	FY 2024
Title: 3GEN FLIR B-Kit EMD	19.166	-	-
Description: 3GEN FLIR EMD requirements and contract awards.			
Title: SBIR/STTR Transfer	-	0.330	-
Description: Funding transferred in accordance with Title 15 USC 638			
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638			
Title: 3GEN FLIR B-Kit Product Improvements & Competition Development	-	8.709	10.521
Description: 3GEN FLIR B-Kit Product Improvements, Technical Insertions, and promotion of competition			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / <i>Night Vision Systems - Eng Dev</i>	Project (Number/Name) L70 / <i>Night Vision Dev Ed</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<i>FY 2023 Plans:</i> FY 2023 Base Funding supports continued integration of sensor automation and artificial intelligence/machine learning to support Aided Target Detection and Recognition and promote competition for full rate production. <i>FY 2024 Plans:</i> FY 2024 Base Funding supports demonstration of the continued integration of sensor automation and artificial intelligence/machine learning to support Aided Target Detection and Recognition and promote competition for full rate production. <i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase due to program transition from EMD phase to 3GEN FLIR B-Kit Product Improvements & Competition Development activities. Overall funding increase attributable to the sensor automation demonstration planned activities.			
Accomplishments/Planned Programs Subtotals	19.166	9.039	10.521

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

<u>Line Item</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u> <u>Base</u>	<u>FY 2024</u> <u>OCO</u>	<u>FY 2024</u> <u>Total</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 330: <i>Abrams Tank Improve Prog</i>	118.471	61.205	96.240	-	96.240	83.621	83.688	84.581	85.524	Continuing	Continuing
• CF6: <i>Optionally Manned Fighting Vehicle (OMFV)</i>	194.936	554.925	996.653	-	996.653	542.476	369.090	373.020	377.183	0.000	3,408.283
• KA4511: <i>Improved Forward Looking Infrared (IFLIR) B-Kit</i>	11.929	37.914	20.438	-	20.438	70.115	68.561	125.223	125.331	Continuing	Continuing

Remarks

D. Acquisition Strategy

3GEN FLIR: Materiel Development Decision (MDD) was received from the Army Acquisition Executive (AAE) and the Acquisition Decision Memorandum (ADM) was signed on 22-Dec-2014. Per the ADM, 3GEN FLIR entered the acquisition lifecycle at Milestone B (MS B) in 2Q FY 2016. After a successful MS B decision, competitive EMD contracts were awarded to design, develop, integrate and test the 3GEN FLIR B-Kit prior to production and mitigate the industrial base risk. The host platforms are responsible for integration of the 3GEN FLIR B-Kit. 3GEN FLIR product improvement efforts will continue to focus on the integration and refinement of the artificial intelligence/machine learning capabilities per Army guidance.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L70 / Night Vision Dev Ed					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Management	MIPR	PM TS : Ft. Belvoir, VA	16.867	0.550	Jan 2022	0.512	Jan 2023	0.522	Jan 2024	-		0.522	Continuing	Continuing	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.330		-		-		-	0.000	0.330	-
Subtotal			16.867	0.550		0.842		0.522		-		0.522	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
3GEN FLIR B-Kit EMD	C/CPIF	Various : Various	213.495	15.291	Feb 2022	-		-		-		-	0.000	228.786	-
3GEN FLIR Product Improvements	TBD	Various : Various	-	-		7.830	Mar 2023	9.625	Jan 2024	-		9.625	Continuing	Continuing	-
Subtotal			213.495	15.291		7.830		9.625		-		9.625	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
3GEN FLIR B-Kit Support	C/TBD	Various : Various	42.713	0.951	Feb 2022	0.367	Feb 2022	0.374	Feb 2024	-		0.374	Continuing	Continuing	-
Subtotal			42.713	0.951		0.367		0.374		-		0.374	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Test Support	MIPR	Various : Various	15.850	2.374	Jan 2022	-		-		-		-	0.000	18.224	15.850
Subtotal			15.850	2.374		-		-		-		-	0.000	18.224	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army											Date: March 2023			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev					Project (Number/Name) L70 / Night Vision Dev Ed				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		288.925	19.166		9.039		10.521		-		10.521	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L70 / Night Vision Dev Ed	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
3GEN FLIR B-Kit Development, Test, and Integration																												
3GEN FLIR Incremental Product Improvements																												
3GEN FLIR B-Kit MS C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L70 / Night Vision Dev Ed	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
3GEN FLIR Materiel Development Decision (MDD)	1	2015	1	2015
3GEN FLIR Development Request For Proposal Release Review (DRFP RR)	3	2015	3	2015
3GEN FLIR B-Kit MS B	2	2016	2	2016
3GEN FLIR B-Kit Development, Test, and Integration	2	2016	3	2023
3GEN FLIR Incremental Product Improvements	4	2022	4	2030
3GEN FLIR B-Kit MS C	3	2023	3	2023
3GEN LRAS3 ECP to Integrate 3GEN FLIR B-Kit: Spec Development & Documentation	1	2018	4	2019
Common Operating Environment, Development	2	2012	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L79: Joint Effects Targeting Systems (JETS)	-	4.929	11.434	24.165	-	24.165	19.973	6.486	5.900	5.965	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Effects Targeting System (JETS) is an Army Joint Information Program. JETS addresses the one-man, hand-held precision targeting gap identified by the Fires Center of Excellence (FCoE). JETS is a light-weight, handheld system that will provide the single dismounted observer with a common, enhanced day and night thermal capability to rapidly acquire, accurately locate, positively identify, and precisely designate targets. JETS Target Location and Designation System (TLDS) is able to interface with existing and future Forward Entry Systems (FESS) and will be able to operate in environments where global positioning system (GPS) capabilities are degraded or denied, and integrating military GPS user equipment (M-Code) GPS receivers. This project will develop and integrate improved precision targeting components to reduce size, weight, power, and cost of systems for dismounted precision Fires mission. Funding in this project aligns with the Army's priorities in support of the National Defense Strategy.

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

	FY 2022	FY 2023	FY 2024
Title: Precision Targeting and Target Acquisition Development	4.929	-	-
Description: This project develops prototype precision targeting systems incorporating improved target acquisition sensors and optics, improved targeting sensors, and updated targeting algorithms while reducing size, weight, and power requirements. Incorporates JETS into the Adaptive Squad Architecture (ASA) and integrates the Intra Soldier Wireless (ISW) capability.			
Title: JETS II Development	-	11.017	24.165
Description: This project performs engineering and manufacturing development of the next generation JETS, transitioning technologies developed in the Precision Targeting and Target Acquisition Development project. The JETS II will be an advanced, lighter weight precision targeting systems incorporating improved target acquisition sensors and optics, improved targeting sensors, targeting algorithms, and a M-Code GPS receiver while reducing size, weight, and power requirements. It will integrate JETS into the Adaptive Squad Architecture (ASA) using the Intra Soldier Wireless (ISW) capability.			
FY 2023 Plans: The FY23 resources will initiate the engineering and manufacturing development of JETS II.			
FY 2024 Plans: The FY24 resources will continue to support the competitive engineering and manufacturing development of JETS II.			
FY 2023 to FY 2024 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
The FY 2024 increased funding reflects the ramp up of the engineering and manufacturing development phase for JETS II.												
Title: SBIR/STTR Transfer										-	0.417	-
Description: Funding transferred in accordance with Title 15 USC 638												
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638												
Accomplishments/Planned Programs Subtotals										4.929	11.434	24.165
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• VT8: SOLDIER PRECISION	2.432	2.045	2.011	-	2.011	2.010	2.012	2.033	2.056	Continuing	Continuing	
TARGETING DEVICES - ADV DEV												
• K32101: JOINT EFFECTS	62.082	2.576	8.932	-	8.932	9.347	69.020	69.683	69.753	Continuing	Continuing	
TARGETING SYSTEM (JETS)												
Remarks												
D. Acquisition Strategy												
The Joint Effects Targeting System (JETS) Target Location Designation System (TLDS) entered the acquisition framework on 25 February 2013 at Milestone (MS) B and the Engineering Manufacturing & Development phase. On 26 May 2016, MS C was approved for entry into the Production and Deployment Phase, Low Rate Initial Production. On 6 March 2022, the Milestone Decision Authority provided an Acquisition Decision Memorandum directing the Product Manager to develop a comprehensive plan to acquire an updated version of JETS, implementing M-Code to be compliant with Public Law 111-383, and insertion of other capability improvements commensurate with user Requirements.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	MIPR	PM-IVAS : Ft Belvoir, VA 22060	5.285	0.368	Feb 2022	0.379	Feb 2023	0.400	Dec 2023	-		0.400	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.417	Mar 2023	-		-		-	0.000	0.417	-
Subtotal			5.285	0.368		0.796		0.400		-		0.400	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Precision Targeting & Target Acquisition Development	C/FFP	Elbit : Merrimack, NH	9.359	3.241	Feb 2022	-		-		-		-	0.000	12.600	-
JETS II	C/FFP	TBD : TBD	-	-		9.415	Aug 2023	22.606	Nov 2023	-		22.606	Continuing	Continuing	Continuing
Subtotal			9.359	3.241		9.415		22.606		-		22.606	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Matrix Support	MIPR	C5ISR (RTI) : Ft. Belvoir, VA	13.456	0.411	Jan 2022	0.423	Feb 2023	0.250	Dec 2023	-		0.250	Continuing	Continuing	-
Science and Engineering Support	SS/CPFF	Johns Hopkins University : Laurel, MD	8.488	0.909	Jan 2022	0.800	Feb 2023	0.659	Jan 2024	-		0.659	Continuing	Continuing	-
Subtotal			21.944	1.320		1.223		0.909		-		0.909	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing	MIPR	Various : Various	6.061	-		-		0.250	Jan 2024	-		0.250	Continuing	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev				Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)					
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			6.061	-		-		0.250		-		0.250	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			42.649	4.929		11.434		24.165		-		24.165	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev		Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Full Materiel Release (FMR)		1																										
Precision Targeting and Target Acquisition Development																												
JETS II Development Decision																												
JETS II Development																												
JETS II Limited User Test																												
JETS II Production Decision																												
JETS II Production																												
JETS II Initial Operational Test & Evaluation																												
JETS II SWAP-C																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604710A / Night Vision Systems - Eng Dev	Project (Number/Name) L79 / Joint Effects Targeting Systems (JETS)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Full Materiel Release (FMR)	2	2022	2	2022
Precision Targeting and Target Acquisition Development	2	2019	4	2022
JETS II Development Decision	4	2022	4	2022
JETS II Development	4	2023	2	2026
JETS II Limited User Test	3	2025	4	2025
JETS II Production Decision	1	2026	1	2026
JETS II Production	3	2026	2	2032
JETS II Initial Operational Test & Evaluation	3	2027	3	2027
JETS II SWAP-C	2	2027	4	2030

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity	R-1 Program Element (Number/Name)											
2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>											
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	1.598	1.566	2.223	-	2.223	1.620	1.622	1.639	1.658	0.000	11.926
548: <i>Mil Subsistence Sys</i>	-	1.598	1.566	2.223	-	2.223	1.620	1.622	1.639	1.658	0.000	11.926

A. Mission Description and Budget Item Justification

Projects under this Program Element support the development, demonstration and Non-Developmental Item (NDI) Commercial Off The Shelf (COTS) evaluation of combat feeding equipment to enhance soldier efficiency, improve soldier survivability, and reduce food service logistics requirements for all four services. These Projects support multi-fuel, rapidly deployable field food service equipment initiatives. Efforts also support the Engineering and Manufacturing Development (EMD) phase of programs to improve equipment, enhance safety in food service, and decrease fuel and water requirements. The Projects develop critical enablers that support the Joint Future Capabilities and Joint Expeditionary mindset, by maintaining readiness through integrating new equipment, enhancing the field soldier's well-being, and providing soldiers usable equipment. The Projects also reduce sustainment requirements, related Combat Support/Combat Service Support (CS/CSS) demands on lift, the combat zone footprint, and costs for logistical support.

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

B. Program Change Summary (\$ in Millions)	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	1.658	1.566	2.270	-	2.270
Current President's Budget	1.598	1.566	2.223	-	2.223
Total Adjustments	-0.060	0.000	-0.047	-	-0.047
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.060	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	-0.047	-	-0.047

Change Summary Explanation

Decreased funding to support higher Army priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment				Project (Number/Name) 548 / Mil Subsistence Sys			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
548: Mil Subsistence Sys	-	1.598	1.566	2.223	-	2.223	1.620	1.622	1.639	1.658	0.000	11.926
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This Project enables system development and demonstration of Joint Service combat rations and field feeding equipment/systems designed to improve warfighter performance and reduce the logistics burden of subsistence support. Efforts funded in this Project support all four Services, the Special Operations Command, and the Defense Logistics Agency (DLA). The Army serves as the Executive Agent for this Department of Defense (DoD) program, with oversight and coordination provided by the DoD Combat Feeding Research and Engineering Board (CFREB) as required by DoD Directive (DoDD) 3235.02E. Centralized execution of the DoD Combat Feeding Research and Engineering Program (CFREP) with Joint Service review and approval eliminates unnecessary duplication of efforts across the Services and maximizes use of common materiel solutions.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Joint Service Combat Ration System Development									0.884	1.238	1.186	
Description: This effort integrates and demonstrates mature Joint Service combat ration systems that enable warfighter maneuver, readiness and effectiveness during highly mobile, dispersed operations. Prototypes are transitioned from APE 0603747A Project 610 to develop individual and group combat rations with improved capabilities including improved warfighter physical and cognitive performance through optimized nutrition and reduced logistics burden through weight and cube reduction. This effort completes operational test and evaluation (OT&E) to confirm system level performance, and develops ration specifications for transition to Defense Logistics Agency - Troop Support (DLA - Troop Support) for procurement.												
FY 2023 Plans: For existing ration platforms (Meal, Ready-to-Eat; Close Combat Assault Ration; Unitized Group Rations - A/M/H&S), integrate prototype components/technologies into menu systems and ration assembly processes to improve quality, optimize nutritional content, decrease weight/cube/cost and/or improve modularity and field utility; continue to conduct OT&E on ration systems to validate system level performance; present recommendations to the Joint Services for Milestone C approval; finalize procurement documents and initiate transition to DLA-Troop Support; obtain US Army, Surgeon General approval of revised menus; execute production testing with industry to ensure consistent ration quality, validate documents, and resolve vendor/supplier technical production issues; and conduct confirmatory sensory, chemical, physical and shelf life testing. For developmental EGR, present to the JSORF for Milestone C approval and develop Technical Data Packages (TDP's) for procurement documents. Conduct OT&E of through the mask feeding system to enable safe feeding capabilities in hazardous environments												
FY 2024 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>For existing operational ration platforms (Meal, Ready-to-Eat; Close Combat Assault Ration; Unitized Group Rations - A/M/ Heat&Serve, Expeditionary Group Ration), will integrate prototype components/technologies into menu systems and ration assembly processes to improve quality, optimize nutritional content, decrease weight/cube/cost and/or improve modularity and field utility; will continue to conduct OT&E on ration systems to validate system level performance; will present recommendations to the Joint Services for Milestone C approval; will finalize procurement documents and initiate transition to DLA-Troop Support; will obtain US Army, Surgeon General approval of revised menus; will execute production testing with industry to ensure consistent ration quality, validate documents, and resolve vendor/supplier technical production issues; and will conduct confirmatory sensory, chemical, physical and shelf life testing, in addition to complete nutrient analysis.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding change reflects planned lifecycle of this effort, for OT&E in support of operational ration procurements.</p>			
<p>Title: Joint Service Field Feeding Systems Development</p> <p>Description: This effort integrates and demonstrates field feeding equipment systems in support of the Navy (USN), Air Force (USAF), and Marine Corps (USMC) that reduce the logistics burden, improve efficiency, and decrease operation and support costs as directed by the DoD CFREB and Joint Service partners. Validated systems, specifications, and technical data packages are transitioned to the appropriate Service partner for procurement and fielding. Service partners include Product Manager Combat Support Equipment (PdM-CSE), Naval Sea Systems Command (NAVSEA), Naval Supply Systems Command (NAVSUP), Navy Expeditionary Combat Command (NECC) and USAF Basic Expeditionary Airfield Resources (BEAR) Program Office.</p> <p>FY 2023 Plans: Conduct OT&E the Expeditionary Field Feeding Equipment System to reduce logistics requirements for squad feeding; and transition validated prototype equipment and technical data to USMC.</p> <p>FY 2024 Plans: Will complete system fabrication and integration of upgraded Expeditionary Field Kitchen in support of DT&E and Limited User Testing; Will finalize technical data package for Expeditionary Field Feeding Equipment System and transition package to DLA-TS for procurement and sustainment; Will complete DT&E of Joint Air Containerized Kitchen Systems for air transportability and deliver systems to USAF for limited user evaluations; In support of Navy galley operations, will award contracts and initiate T&E for bakery equipment, to increase equipment diagnostics and automation, while reducing labor requirements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding increase supports OT&E for upgrades to field feeding equipment systems.</p>		0.714	0.271
Title: SBIR/STTR Transfer		-	0.057

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604713A / Combat Feeding, Clothing, and Equipment				Project (Number/Name) 548 / Mil Subsistence Sys				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
Description: Funding transferred in accordance with Title 15 USC §638.												
FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638.												
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638.												
Accomplishments/Planned Programs Subtotals										1.598	1.566	2.223
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• 610: Food Adv Development	2.791	4.060	3.550	-	3.550	4.154	4.160	4.204	4.251	0.000	27.170	
Remarks												
D. Acquisition Strategy												
Complete Engineering and Manufacturing Development (EMD) and Demonstration of food items and equipment for transition into competitive procurement contract. Complete advanced research efforts to support Engineering Change Proposals for previously developed equipment.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>						Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Combat Feeding Program Management	C/FP	CCDC Soldier Center : Natick, MA	4.464	0.388	Oct 2021	0.350	Oct 2022	0.111	Oct 2023	-		0.111	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.057	Feb 2023	-		-		-	0.000	0.057	-
Subtotal			4.464	0.388		0.407		0.111		-		0.111	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Service Rations and Combat Feeding Equipment	Various	Various : Various	7.071	0.163	Oct 2021	0.148	Oct 2022	0.211	Oct 2023	-		0.211	Continuing	Continuing	Continuing
Subtotal			7.071	0.163		0.148		0.211		-		0.211	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Service Rations and Combat Feeding Equipment	Allot	CCDC Soldier Center : Natick, MA	3.974	1.047	Oct 2021	1.011	Oct 2022	1.901	Oct 2023	-		1.901	Continuing	Continuing	Continuing
Subtotal			3.974	1.047		1.011		1.901		-		1.901	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			15.509	1.598		1.566		2.223		-		2.223	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>		Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Conduct operational testing of combat ration systems																												
Conduct OT&E of Close Combat Assault Ration (CCAR)																												
Obtain Joint Service and Army Surgeon General approval o...																												
Develop CCAR Technical Data Package and contract for Low...																												
Develop and transition CCAR documents to DLA-TS for proc...																												
Conduct OT&E of Expeditionary Group Ration (EGR)																												
Develop and transition EGR documents to DLA-TS for procu...																												
Obtain Joint Service and Army Surgeon General approval o...																												
Conduct OT&E of through the mask feeding system																												
Develop and transition individual and group ration docum...																												
Obtain Joint Service and Army Surgeon General approval o...																												
Conduct OT&E & transition labor & energy saving bakery u...																												
Conduct OT&E of Energy Conversation technologies for BEA...																												

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

Date: March 2023

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

PE 0604713A / *Combat Feeding, Clothing, and Equipment*

Project (Number/Name)

548 / Mil Subsistence Sys

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604713A / <i>Combat Feeding, Clothing, and Equipment</i>	Project (Number/Name) 548 / <i>Mil Subsistence Sys</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conduct operational testing of combat ration systems	1	2018	4	2028
Conduct OT&E of Close Combat Assault Ration (CCAR)	1	2020	4	2022
Obtain Joint Service and Army Surgeon General approval of first generation CCAR	3	2021	2	2022
Develop CCAR Technical Data Package and contract for Low Rate Initial Production	3	2021	1	2022
Develop and transition CCAR documents to DLA-TS for procurement	1	2022	2	2022
Conduct OT&E of Expeditionary Group Ration (EGR)	1	2023	4	2023
Develop and transition EGR documents to DLA-TS for procurement	2	2023	4	2024
Obtain Joint Service and Army Surgeon General approval of EGR	2	2024	3	2024
Conduct OT&E of through the mask feeding system	1	2023	4	2023
Develop and transition individual and group ration documents annually to DLA-TS	1	2018	4	2028
Obtain Joint Service and Army Surgeon General approval of MORE Performance Pack	2	2022	3	2022
Conduct OT&E & transition labor & energy saving bakery upgrades to USN	1	2024	4	2025
Conduct OT&E of Energy Conversation technologies for BEAR kitchens to USAF	1	2025	4	2025
Conduct OT&E and transition Mobile Feeding Galley to USN	1	2020	3	2020
Conduct OT&E & transition labor & energy saving galley/scullery upgrades to USN	1	2020	4	2021
Conduct OT&E of expeditionary kitchen systems for shore-based Navy units	1	2022	4	2022
Conduct OT&E of Improved Tray Ration Heater and transition to USMC	1	2020	4	2021
Obtain Aerial Delivery Certification of Inflatable Refrigerated Space (IRefS)	1	2020	4	2021
Conduct OT&E of IRefS and transition to Services	1	2021	4	2022
Conduct OT&E of EFK upgrades and transition to USMC	1	2024	4	2025
Conduct OT&E of intuitive kitchen and galley equipment; transition to Services	1	2021	4	2022
Conduct OT&E of EFFES at the squad/platoon level	1	2022	4	2024

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					PE 0604715A / Non-System Training Devices - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	28.605	18.588	21.441	-	21.441	24.778	22.136	21.437	22.901	Continuing	Continuing
241: Nstd Combined Arms	-	28.605	18.588	21.441	-	21.441	24.778	22.136	21.437	22.901	Continuing	Continuing

A. Mission Description and Budget Item Justification

Program Element funds development of Non-System Training Devices to support force-on-force and force-on-target training at the Combat Training Centers (CTC), general military training, and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Army training devices and training simulations contribute to the modernization of the forces by enabling readiness and strengthening combat effectiveness through realistic training solutions for the Warfighter. Training devices maximize the transfer of knowledge, skills, and experience from the training situation to a combat situation. Force-on-force training and force-on-target at the National Training Center (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Polk, LA, Joint Multinational Readiness Center (JMRC), Hohenfels, Germany; Home Stations and deployed locations around the world; and battle staff training in Battle Command Training Program (BCTP) provide increased combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project 241, Non-System Training Devices-Combined Arms, develops simulation training devices for Army-wide use, including the CTCs.

FY 2024 Project 241 funds significant development efforts in support of U.S. Army Training and Readiness on the Combat Training Center Instrumentation Systems (CTC-IS), Instrumentable-Multiple Integrated Laser Engagement System (I-MILES), Home Station Instrumentation Training System (HITS), Common Training Instrumentation Architecture (CTIA), Future Army System of Integrated Targets (FASIT), Medical Simulation Training Center (MSTC), Unmanned Aerial Systems (UAS) Swarm, Opposing Forces Mechanized Vehicle Replacement (OMVR), and the Live, Virtual, Constructive Integrating - Architecture (LVC-IA).

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	26.514	18.600	13.146	-	13.146
Current President's Budget	28.605	18.588	21.441	-	21.441
Total Adjustments	2.091	-0.012	8.295	-	8.295
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.091	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	8.295	-	8.295
• FFRDC Transfer	-	-0.012	-	-	-

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	
<p>Change Summary Explanation</p> <p>FY2024 funding increase will be utilized for requirements analysis, initial prototype development and design, logistics planning and host chassis maintenance associated with the Opposing Forces Mechanized Vehicle Replacement (OMVR) program. Efforts will also include preparation of a contract package that will support the development, design, fabrication and testing and fielding of the OMVR Visual Modifications (VISMOSDs) to the CTCs.</p> <p>FY2024 Base dollars in the amount of \$6.730 million is in support of the Pacific Deterrence Initiative. This is an increase from the FY2023 funding level, which had no request for PDI funding in program element 0604715A. This funding will be utilized for Low-Cost Threat Emitter (LCTE) Prototypes, integration of Multi-domain training and extension of the Combined Joint Systems Integration Lab (CJSIL) test floor.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
241: Nstd Combined Arms	-	28.605	18.588	21.441	-	21.441	24.778	22.136	21.437	22.901	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Common Training Instrumentation Architecture (CTIA) program is the foundation architecture of the Live Training Transformation Family of Training Systems (LT2-FTS). The program contains critical core product-line architecture which provides commonality across training instrumentation systems and interoperability across Live, Virtual, Constructive Integrated Training Environment (LVC-ITE) and joint training systems. CTIA includes Army owned software components, architecture services, standards, protocols and governance used by domain-specific Live Training Transformation (LT2) and Live Training Systems (LTS) to include instrumented Force-On-Force (FOF) and Force-On-Target (FOT) training requirements. The CTIA also provides Post Deployment Software Support (PDSS) and technology refresh for the LT2 family of LTS supporting over 22 live instrumented training products which are fielded at over 200 CONUS and OCONUS sites across the Army.

Combat Training Center Instrumentation System (CTC-IS) funds the continued development of the existing Instrumentation Systems (IS) at the National Training Center (NTC), Joint Readiness Training Center (JRTC) and Joint Multinational Readiness Center (JMRC). CTC-IS funds the continued development of the Range Communication System at the NTC and JRTC, to provide high-fidelity live, virtual, and constructive brigade training rotations which prepare Brigade Combat Teams (BCTs), Joint partners, and supporting units to deploy in support of the Army Sustainable Readiness Model (SRM). The CTCs primary goal is to develop agile and adaptive leaders at the tactical, operational and strategic levels while providing BCTs the core training necessary to conduct decisive action in a dynamic operating environment.

The Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) program provides realistic, real-time casualty effects for force-on-force tactical engagement training scenarios. Its ability to integrate into training instrumentation systems provides for high fidelity combined arms combat exercises supporting Readiness and closely aligns with the Modernization priority of Soldier Lethality. I-MILES is required for use at Home Stations, the Combat Training Centers (CTCs) and in theater of operations to meet force-on-force training requirements. I-MILES program funding provides for the Development and Integration of new vehicle and dismount weapon systems meeting the Common Operating Environment (COE) requirements, as well as embedded Tactical Engagement Simulation (TES) development. This includes development efforts of the LTEC / LPAN Development of Legacy software patches that incorporate the Government owned LTEC operating system software. This creates a common architecture that provides the ability to develop new services to adapt to evolving Army requirements (i.e. Changes in weapon platforms, technologies, Pk Table Updates).

The Home Station Instrumentation Training System (HITS) currently provides a high-fidelity deployable instrumented training capability to support platoon thru battalion ground based Soldiers and vehicles in Force-on-Force Training. HITS tracks location of soldiers and vehicles and simulates weapons' effects and engagements, allowing units to "Train as they Fight" against live opponents. HITS provides accurate feedback to training units. HITS consists of light deployable components that can be rapidly assembled/disassembled and transported to support deployed training. HITS is a member of the Live Training Transformation (LT2) product line of training systems implementing hardware and software reuse with other Instrumentation Systems (IS). HITS provides the only Live training component for the large scale Live-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>
<p>Virtual-Constructive (LVC) military training exercises. HITS begins US Army aviation vehicle integration with Home Station instrumentation to cover comprehensive training engagements between ground and air forces.</p> <p>The Medical Simulation Training Center (MSTC) provides realistic medical training to both medical and non-medical Soldiers in the Active, Reserve, and National Guard. MSTCs provide hands-on instruction on the latest battlefield trauma and critical care techniques based on Army Medical Center of Excellence (MEDCoE) approved performance oriented Program of Instruction (POI). Medical treatment validation exercises simulate the high stress of performing medical interventions in combat. MSTC supports Unit Medical Readiness by validating Combat Medic (68W) Emergency Medical Technician (EMT) biennial recertification requirements and provides Combat Lifesaver (CLS) training to non-medical Soldiers. The Tactical Combat Casualty Care Exportable (TC3X) Soldier System provides capability to train Soldiers on medical Warrior skills at the individual, leader, and collective levels.</p> <p>The Basic Electronics Maintenance Trainer (BEMT) provides the essential modernized electronic system maintenance training capability for the Army, Army National Guard, and the Army Reserve to achieve Military Occupational Specialty-Qualification (MOS-Q) for 40 Military Occupational Specialties (MOS) at 24 Active, National Guard, and Army Reserve camps, posts, and stations. Soldiers utilizing the BEMT system receive highly realistic training using scenarios which require performing basic electronic tasks in a virtual environment including tests, diagnosis, and repair while saving institutions significant expenses over live training alternatives. The BEMT consists of an Instructor Operator Station (IOS), Student Training Station(s) (STS), associated test equipment, COTS computer, electronics console(s), supporting experiment cards, soldering station, and content server as applicable.</p> <p>The Live, Virtual, Constructive Integrating Architecture (LVC-IA) provides a net-centric linkage that collects, retrieves and exchanges data among LVC Training Aids, Devices, Simulations, and Simulators (TADSS) to include: Aviation Combined Arms Tactical Trainer (AVCATT), Close Combat Tactical Trainer (CCTT), Games For Training (GFT), Home Station Instrumentation Training System (HITS), Joint Land Component Constructive Training Capability (JLCCTC) and Synthetic Environment Core (SE Core), Universal Mission Simulator (UMS) and Mission Command Information Systems. The LVC-IA defines "how" information is exchanged among the different LVC domains and the Mission Command Information Systems. The LVC-IA provides enterprise level tools for exercise control, after action review, and system information assurance. It develops hardware and software to interface the different Live, Virtual, Constructive and Gaming communication protocols and to provide a correlated common operating picture for the training audience on their organic Mission Command equipment. The integration of the LVC TADSS with the Mission Command equipment will enable larger and more robust training events, to better prepare U.S. Soldiers for their missions at an overall reduced cost. The end-state goal is to enable an LVC Integrated Training Environment that can replicate Operational Environments in a cost effective manner to provide a high level of value-added training and mission rehearsal opportunities to Army Commanders and their Soldiers. In FY 2019, the LVC-IA program commence design and developmental activities for Version 4, which allowed for Web-based optimization; inclusion of new simulations to the architecture; and concurrency with core system TADSS and Army Mission Command Information Systems through FY 2022. FY 2024 request will continue developmental and integration activities to ensure concurrency with the Synthetic Training Environment (STE), TADSS, and Mission Command Information Systems. The LVC-IA program supports the modernization and readiness priorities by bringing JLCCTC and HITS to the Synthetic Training Environment enabling an Integrated Training Environment until the STE constructive and live systems are developed integrated with STE.</p> <p>The Army identified an operational gap in the training strategy for the OPFOR Integrated Air Defense System (IADS). It is a collection of enemy air defense weapons systems that engages Army aviation assets. Training Aircraft Survivability Equipment (ASE) Simulation Suite (TASS) is a live training system consisting of aircraft</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>
<p>components and ground emitters that replicates current and emerging enemy Air Defense systems. Its fidelity supports individual pilot training as well as the collective training requirements of the Brigade Combat Team to fully plan, prepare, execute and react against an enemy air defense weapons at the Combat Training Centers (CTC).</p> <p>Future Army System of Integrated Targets (FASIT) provides Live Fire training systems and software capable of supporting all Army automated ranges and it's Installations around the world. The FASIT training systems include: A single, universal target control software for all automated ranges (ground and aviation) identified in TC 25-8, providing users a controller with a common look and feel; downrange stationary and moving infantry and armor Presentation Devices (PDs) that interact with the control software to present targets and provide scoring feedback; battlefield/weapons effects devices that simulate combat situations, visuals, and sounds; and targets that provide visual, and thermal representations of friendly/threat engagements. The FASIT systems enable trainers to develop scenarios to simulate wartime mission tasks in a stressful battlefield environment.</p> <p>The Digital Range Training System (DRTS) provides advanced instrumentation specifically required for live fire gunnery training and qualification with the Abrams, Bradley, Stryker/MGS, Apache Aircraft and Unmanned Aerial Systems (UAS) on larger mounted maneuver Instrumented "Digital" Ranges. DRTS provides crew, section, platoon and company training and qualification capabilities above and beyond any other range in the Army inventory. These ranges interface with the tactical vehicles through an Integrated Player Unit Recorder (IPUR) or Smart Onboard Data Interface Module (SMODIM) to provide both real-time feedback to leaders and rapid development of complete After Action Reviews (AARs) and Take Home Packages (THPs). These AAR THPs include synchronized Thru-Sight Video (TSV) from the Commander/Gunner sights, crew camera video from inside the vehicles, thermal field camera video from the range cameras and internal crew audio for a complete evaluation. Nine of these DRTS ranges also incorporate Aerial Weapons Scoring System (AWSS) to interface with Aviation and Unmanned Aerial System gunnery training and qualification in a similar manner. The five standard training ranges utilize all available combat systems capabilities and digitally integrate them to manage all forces undergoing crew through collective live-fire training and qualification: Digital Multi-Purpose Range Complex (DMPRC) supports all gunnery tables and Combined Arms Live Fire Exercise (CALFEX) for Armor, Infantry and Aviation; Digital Multi-Purpose Training Range (DMPTR) supports crew and section qualification for Armor and Infantry; Battle Area Complex (BAX) supports crew through company CALFEX for Stryker & Infantry Brigade Combat Teams (SBCT/IBCT); Digital Air Ground Integration Range (DAGIR) supports all gunnery tables and CALFEX for Armor, Infantry and Aviation platforms; Aerial Gunnery Range (AGR) at Fort Bragg supports crew through Company CALFEX for manned/unmanned aviation platforms.</p> <p>OPFOR Surrogate Wheeled Vehicles (OSWV) provides a collection of wheeled vehicles, used as training aids to portray threat vehicles including tactical vehicles, technical vehicles, and Civilian on the Battlefield vehicles (COB-V). The program supports the CTC OPFOR/COE Pillar capability through technical vehicles, unique VISMODs, and COB-Vs. This capability provides for an accurate replication of OPFOR and COB-Vs environment that rotational units must train against.</p> <p>Unmanned Aerial Systems (UAS) Swarm provides integrated, multi-domain threat representative UAS platforms through custom UAS components and payloads that challenge training communities' execution of UAS Tactics, Techniques and Procedures (TTPs), use of current and evolving UAS technologies (i.e., Drone buster), and gives feedback on their vulnerabilities to UAS-enabled Intelligence, Surveillance, and Reconnaissance, Cyber, Electronic Warfare, Dynamic Targeting and Swarm operations.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
Opposing Forces Mechanized Vehicle Replacement (OMVR) will consist of a common Army tracked platform that uses modular visual modifications (VISMODs). This capability will allow the Opposing Forces to replicate five of the six warfighting functions. This replication will train Army units to synchronize all Intelligence, Surveillance, and Reconnaissance (ISR) assets available to the Brigade Combat Rotational Training Unit (RTU), present threat representative tracked/mechanized vehicles and formations to the RTU across the depth and breadth of the training area, and provide the OPFOR and the Army with a sustainable system that is safe for Soldiers to operate and maintain.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Common Training Instrumentation Architecture (CTIA) program.</p> <p>Description: Continue EMD phase contract activities for the CTIA program to provide common architecture capabilities.</p> <p>FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$2.598 million will fund the continued development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for 22 live training systems at 200+ training locations worldwide, to include the Combat Training Centers-Instrumentation System utilized at the National Training Center, the Joint Readiness Training Center, and at the Joint Multinational Readiness Center; the Home Station Instrumentation System; the Digital Ranges Training System, and future modernization efforts including emerging Army and joint architectures.</p> <p>FY 2024 Plans: FY 2024 Base RDTE dollars in the amount of \$2.740 million will fund the continued development of CTIA to provide the common architecture capabilities that are essential for development, fielding, technology and capability insertion for 22 live training systems at 200+ training locations worldwide, to include the Combat Training Centers-Instrumentation System utilized at the National Training Center, the Joint Readiness Training Center, and at the Joint Multinational Readiness Center; the Home Station Instrumentation System; the Digital Ranges Training System, and future modernization efforts including emerging Army and joint architectures.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase of \$0.142 million from FY 2023 to FY 2024 due to economic assumptions.</p>		2.453	2.598	2.740
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Combat Training Center Instrumentation System (CTC-IS).</p> <p>Description: Continue EMD phase contract activities for the CTC-IS.</p> <p>FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$2.582 million will fund the modeling and final design efforts for the NTC Western Training Area extension for the NTC Instrumentation System. Tracking, Observer Controller / Trainer (OC/T) Situational</p>		6.804	2.582	0.520

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
<p>Awareness, OC/T Voice. Army Aviation, Voice Tactical Monitoring, Spectrum Monitoring, video and AAR support will be extended into the Western Training area. Network, antenna site, antenna tower, fiber optics and power generation must be designed for this effort; Instrumented Player Unit (IPU) will fund the studies, capability analysis, and initial design for the next generation Combat Training Center IPU, which will be utilized at the three CTC's to provide improvements to increase battery life and reduce data plan usage include decentralized indirect fire, minefields and sleep functions; M SHORAD Integration effort will fund post deployment software support to implementation of software to support improved Air Defense Artillery (ADA) and Multi-Domain Operations (MDO) replication at the CTC's providing more realistic MDO training environment.</p> <p>FY 2024 Plans: FY 2024 Base RDTE dollars in the amount of \$0.520 million will fund Post Deployment Software Support (PDSS), After Action Review (AAR) Artificial Intelligence (AI) Engine Study on the application of Artificial Intelligence (AI) for the development of AAR products to research the opportunity of utilizing AI software to analyze combat Training Center training events for cause and effect, which would provide swifter in-depth awareness to trainers for AAR purposes.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$2.062 million from FY 2023 to FY 2024 is due to a shift in scope of CTC RDTE efforts. The FY 2023 work was completed, and FY 2024 will focus on initiation of After-Action Review (AAR) Artificial Intelligence (AI).</p>				
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Instrumentable-Multiple Integrated Laser Engagement System (I-MILES).</p> <p>Description: EMD phase contract activities for the I-MILES program.</p> <p>FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$3.080 million RDTE funding will analyze, develop, test and implement the Live Training Engagement Composition (LTEC) through Post Deployment Software Support efforts. Funding will ensure that baseline relevancy is maintained. Funding will also ensure that there is development and integration of new functionality to maintain concurrency. By FY 2023 three of the five I-MILES product lines will be at end of useful live. This work will extend the useful life of the product lines.</p> <p>FY 2024 Plans: FY 2024 Base RDTE dollars in the amount of \$3.608 million will continue to analyze, develop, test and implement the Live Training Engagement Composition (LTEC) through Post Deployment Software Support. Funds will also begin service life extension development efforts to redesign the Tactical Vehicle System (TVS) and Individual Weapon System (IWS) product line key components to extend product life and supportability as a result of them reaching end of useful life.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement:</p>		2.876	3.080	3.608

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Increase of \$0.528 million from FY 2023 to FY2024 is due to IMILES beginning service life extension development in addition to ongoing LTEC PDSS development.				
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Home Station Instrumentation Training System (HITS) program.</p> <p>Description: EMD phase contract activities for the HITS program.</p> <p>FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$1.616 million will continue efforts for Home-Station Instrumentation Training Systems (HITS) Concurrency for new software (either COTS or developmental) that will yield additional capabilities to HITS; as well as HITS Aviation for small UAS (Drones outfitted with tracking devices (radios) that can be picked up by the HITS tracking software). Funding will also allow for Integrating new tactical radios with a particular locations communication architecture. PDSS for new software support (exercise support) will provide expertise and troubleshooting during force on force exercises.</p> <p>FY 2024 Plans: FY 2024 Base RDTE dollars in the amount of \$0.495 million will continue efforts for Home-Station Instrumentation Training Systems (HITS) Concurrency for new software (either COTS or developmental) that will yield additional capabilities to HITS.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$1.121 million from FY 2023 to FY 2024 due to decrease of HITS concurrency requirements.</p>		3.995	1.616	0.495
<p>Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Medical Simulation Training Center (MSTC).</p> <p>Description: Contract activities for the MSTC program to develop the Virtual Patient System technologies. The approved MSTC Capability Production Document (CPD), Inc 1, Rev 1, dtd 6 MAR 2019, shows capability has additional unfulfilled requirements. The MSTC CPD requires that ALL GENDERS shall be represented within the medical training simulations and scenarios. The FEMALE GENDER is now under development. The CPD also states that realistic medical scenarios are required, which are also being developed.</p> <p>FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$1.165 million will allow the continued development and modification of the Female Trauma Mannequin, developed through a SBIR Phase II contract, utilizing the hardware and software solutions developed by Industry in FY 2021. RDT&E funding for the Female Trauma Mannequin is required for the FY 2023 line for the continued integration and validation of a relevant and realistic GENDER-specific FEMALE mannequin/trauma simulator. RDT&E funding will support the Developmental Test for both mitigation of medical capability gaps and cold weather environment assessment. The Developmental Test will be conducted to assess and obtain feedback from Army medical providers, Combat Medics,</p>		0.484	1.165	0.289

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
and non-medical Soldiers as a touch point in the developmental process of the Female Trauma Simulator. The goal of this Developmental Test is to produce an anatomically-correct severe trauma female mannequin that will enable the Army's 68W Medic the full range of TC8-800 training. Efficacy of material solutions to meet TC3 medical training standards will be assessed including simulated tension pneumothorax, traumatic hemorrhage, nasal pharyngeal airway, and Foley catheter placement, among other interventions. Cold weather immersion and impacts to training performance due to thermal change are key factors in this assessment. Operational Test for the Female Trauma Mannequin will be conducted in 4QFY2023 to determine its operational efficacy of the Tactical Combat Casualty Care material capabilities. FY 2024 Plans: FY 2024 Base RDTE dollars in the amount of \$0.289 million will allow the continuation of the analysis of the test results and Report generation of the Operational Test of the Female Trauma Mannequin. The verification, validation, and accreditation (VV&A) results from the Operational Test of the hardware will allow the productionization of the Female Trauma Mannequin and posture the mannequin for fielding in FY 2024. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease in FY2024 funding due to scale-down from FY2023 Gender Mannequin Research and Development.				
Title: Live, Virtual, Constructive Integrating Architecture (LVC-IA) Engineering and Manufacturing Development (EMD) phase contract activity. Description: Continue EMD phase contract activities for the LVC-IA program. FY 2023 Plans: Live, Virtual, and Constructive-Integrating Architecture (LVC-IA) program will continue system development, integration and demonstration of the LVC-IA capability to ensure concurrency with Synthetic Training Environment (STE), core system Training Aids, Devices, Simulators and Simulations (TADSS) and Army Mission Command Information Systems. FY 2024 Plans: Live, Virtual, and Constructive-Integrating Architecture (LVC-IA) program will continue system development, integration and demonstration of the LVC-IA capability to ensure concurrency with Synthetic Training Environment (STE), core system Training Aids, Devices, Simulations, and Simulators (TADSS), and Army Mission Command Information Systems. FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY2023 to FY2024 is due to economic assumptions.		2.748	2.714	2.985
Title: Live, Virtual, Constructive Integrating Architecture (LVC-IA) Program Government System Test and Evaluation. Description: Government System Test and Evaluation for the LVC-IA Program.		0.295	0.372	0.385

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
FY 2023 Plans: LVC-IA will continue integration, testing and evaluation activities in support of LVC-IA interoperability with STE, TADSS and other Mission Command Information Systems.				
FY 2024 Plans: LVC-IA will continue integration, testing and evaluation activities in support of LVC-IA interoperability with STE, TADSS and Mission Command Information Systems.				
FY 2023 to FY 2024 Increase/Decrease Statement: Increase from FY2023 to FY2024 is due to economic assumptions.				
Title: Government Program Management for the Live, Virtual, Constructive Integrating Architecture (LVC-IA) Program. Description: Government Program Management for the LVC-IA Program.		0.327	0.386	0.338
FY 2023 Plans: Will provide program management, engineering and technical oversight, contract support, and travel for the LVC-IA Program.				
FY 2024 Plans: Will provide program management, engineering and technical oversight, contract support, and travel for the LVC-IA Program.				
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease due to level of engineering and technical oversight required to support program activities.				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Future Army System of Integrated Targets (FASIT). Description: The FASIT program's primary innovation goals are the development of advanced non-contact ballistic hit detection and recognition system, advanced human type targets, non-contact area scoring technology, combat ID targets, electromagnetic/cyber replication, multi domain operations, and augmented reality on live fire ranges; all aimed at increasing training realism, enhancing Soldier resiliency, and lowering life cycle costs.		5.636	1.241	0.944
FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$1.241 million provides for development of Non-Contact Area Scoring Technology (NCAST). NCAST is a capability that will be developed to replace the mobile Aerial Weapons Scoring System (AWSS) systems as well as the fixed AWSS on select aviation Home Station ranges to support Aviation Gunnery Training. Additionally, the system				

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
will provide real-time detection of incoming munitions, location of penetration, and determine the caliber and velocity of incoming rounds. These efforts and solutions will align with the defined OPTEMPO in the FASIT CPD and Army Training Circular 25-8.			
FY 2024 Plans: FY 2024 Base RDTE dollars in the amount of \$0.944 million provides for the final development and testing of the prototype components for the Non-Contact Area Scoring Technology (NCAST). NCAST is a capability that will be developed to replace the mobile Aerial Weapons Scoring System (AWSS) systems as well as the fixed AWSS on select aviation Home Station ranges to support Aviation Gunnery Training. Additionally, the system will provide real-time detection of incoming munitions, location of penetration, and determine the caliber and velocity of incoming rounds. These efforts and solutions will align with the defined OPTEMPO in the FASIT CPD and Army Training Circular 25-8.			
FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.297 million from FY 2023 to FY 2024 is due to completion of NCAST Research and Development (R&D) in FY 2024.			
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Digital Range Training System (DRTS) Description: Conduct development of a government-owned Technical Data Package (TDP) for the DRTS program to enable competitive acquisitions for targets. FY 2023 Plans: FY 2023 Base RDTE dollars in the amount of \$0.997 million will finalize the development, testing and evaluation of a Government-owned and managed Technical Data Package (TDP) for the presentation devices (target lifters) utilized on the DRTS and FASIT ranges. The funding will be used to build prototype and first article units to perform the developmental and environmental testing to validate that the TDP works as required and the presentation devices can be used to support the technology refresh and modernization efforts on all Army ranges. It will also be used to see how the new design works in its operational training environment to establish the Reliability, Availability and Maintainability performance of the devices. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.997 million from FY 2023 to FY 2024 is due to completion of Digital Range Training System (DRTS) activities.		1.139	0.997
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the OPFOR Integrated Air Defense System (IADS) Description: EMD phase contract activities for the IADS Program		0.554	-
Title: Engineering and Manufacturing Development (EMD) phase contract activity for Basic Electronics Maintenance Trainer (BEMT)		0.295	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Description: BEMT provides the essential modernized electronic system maintenance training capability for the Army, Army National Guard, and the Army Reserve to achieve Military Occupational Specialty-Qualification (MOS-Q) for 40 MOS at 24 Active, National Guard, and Army Reserve camps, posts, and stations. BEMT will be modernizing the electronics maintenance training. BEMT provides training in basic electronics, while saving institutions significant administrative expenses over live training alternatives.				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Unmanned Aerial System (UAS) Swarm FY 2023 Plans: FY 2023 RDTE of \$1.158 million provides for the incremental funding for development of UAS Swarm software and integration with 4G/LTE networks, development of payload and integration, initial operational assessments, and will support hardware development for charging stations, tablets, and manual/remote deployment systems. FY 2024 Plans: FY 2024 RDTE of \$0.900 million provides for the incremental funding for continued development of UAS Swarm software and integration with 4G/LTE networks, development of payload and integration, initial operational assessments, and hardware development for charging stations, tablets, and manual/remote deployment systems. FY 2023 to FY 2024 Increase/Decrease Statement: Decrease of \$0.258 million from FY 2023 to FY 2024 due to program reaching FOC and transitioning to sustainment.		0.999	1.158	0.900
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638		-	0.679	-
Title: Prototype phase contract activity for Opposing Forces Mechanized Vehicle Replacement (OMVR) Description: The Opposing Forces Mechanized Vehicle Replacement (OMVR) will consist of a common Army tracked platform that uses modular visual modifications (VISMODs). This capability will allow the Opposing Forces to replicate five of the six warfighting functions. This replication will train Army units to synchronize all Intelligence, Surveillance, and Reconnaissance (ISR) assets available to the Brigade Combat Rotational Training Unit (RTU) across the depth and breadth of the training area, and provide the Opposing Force (OPFOR) and the Army with a sustainable system that is safe for Soldiers to operate and maintain. FY 2024 Plans:		-	-	1.507

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
FY2024 funding will be utilized for program management (OTA white paper evaluation, contract package preparation, and technical evaluations), baseline host chassis, conduct host chassis variation analysis to determine and document differences between variants, and begin prototype development. FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 funding will be utilized for requirements analysis, initial prototype development and design, logistics planning and host chassis maintenance associated with the OMVR program. Efforts will also include preparation of a contract package that will support the development, design, fabrication and testing and fielding of the OMVR Visual Modifications (VISMOS) to the CTCs. There are 11 variants as part of this effort. OMVR is a new project in this APE in FY 2024.				
Title: Engineering and Manufacturing Development (EMD) phase contract activity for the Joint Pacific Maneuver Readiness Center (JPMRC) FY 2024 Plans: FY2024 Base RDTE dollars in the amount of \$2.511 million will fund the USARPAC Low Cost Threat Emitter (LCTE) Prototypes which supports the Pacific Multi-Domain Training and Experimentation Capability (PMTEC) campaign plan to instrument high end threat replication capabilities, USARPAC conducts spiral development and experimentation with 3 x LCTE prototype systems in partnership with US Army Intel Center of Excellence, Electronic Proving Ground, USAF 56th RMO, and Arizona State University Affiliated Research Center (UARC). The LCTE is a portable system that contributes to the EMS effects toolkit for realistic, Joint training. An LCTE formation can create an Integrated Air Defense System (IADS) threat operating environment that can closely mimic our adversary's A2AD bubble to include radars, vehicle signatures, and unit EMS signatures. By utilizing sophisticated, abundant, integrated, and easily deployable threat emitters during training, the Joint Force can better understand the threat spectrum and how to best operate in a contested environment. With functional integration in a Joint exercise as early as April 2023, the LCTE will enhance MDO training for the MSTF, all service components fixed wing, UAS units, SOF, and other experimental assets. These funds will be executed by USARPAC (Command 820). FY 2023 to FY 2024 Increase/Decrease Statement: Initiation of JPMRC efforts in FY2024.		-	-	2.511
Title: USARJ Cyberspace Integration FY 2024 Plans: USAR-J is postured to integrate multi-domain training FWD in Japan in FY2022-2026, advancing USARPAC multi-domain land power objectives and experimentation throughout the Pacific Theater. This effort will support cyberspace domain integration into Army exercises in Japan (Orient Shield, Yama Sakura, North Wind). This will be accomplished via a Cyberspace exercise		-	-	2.712

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army								Date: March 2023			
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Dev ices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2022	FY 2023	FY 2024	
integration services contract that will enable realistic cyber training for Joint and Bilateral exercises and support USARPAC MDO experimentation FED in Japan. This effort will transition current USAR-J cyber OALs from notional white card cyber training to practical value-added cyberspace exercise integration providing active cyberspace simulation venues for MDTF/MDEB, US cyber, and JSDF system protection unit (cyber) teams to train on METL and exercise objectives.											
These funds will be executed by USARPAC (Command 820).											
FY 2023 to FY 2024 Increase/Decrease Statement: Initiation of USARJ Cyberspace Integration efforts in FY2024.											
Title: Establish Combined Joint System Integration Laboratory (CJSIL) Nodes								-	-	1.507	
FY 2024 Plans: Pilot Program to extend the Combined Joint Systems Integration Lab (CJSIL) test floor using a deployable "forward node" to support USARPAC experimentation. The "How" Small forward node (transit case) connects USARPAC to closed restricted sandbox at the CJSIL, Aberdeen Proving Ground (APG). Majority of test architecture will be deployed at APG, experimental systems can be either connected to the forward node or located at APG. The "Why" First contact / initial testing can be conducted in a lab environment before incurring costs to deploy in live / exercise environment. Provides a clean, instrumented, reproducible environment with experts on hand to assist where needed. Remotely accessible, persistent "sandbox" environment to accommodate rapid execution and flexible evaluation requirements. Lower IA thresholds for System Under Test (SUT) deployment -Insert vendor systems into test architecture in CONUS. The "So What" Cost Savings - Reduces or eliminates travel costs for CIV, MIL, CTR, and Vendors; Architecture blend of Virtual/Real systems provides an efficient, reusable footprint for testing. Time Savings - Reduces experimentation lead time; allows for 'quick looks' at proposed technologies. Risk Mitigation - Reduces Integration risks for formal events / exercises.											
These funds will be executed by USARPAC (Command 820).											
FY 2023 to FY 2024 Increase/Decrease Statement: Initiation of Combined Joint System Integration Laboratory (CJSIL) Nodes effort in FY2024.											
Accomplishments/Planned Programs Subtotals								28.605	18.588	21.441	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• MA6600: Combat Training Centers Support	94.965	48.046	56.619	-	56.619	65.038	54.415	44.283	44.337	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• NA0100: Training Devices, Nonsystem	174.644	199.669	226.379	-	226.379	202.061	201.091	220.679	228.516	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Competitive development efforts based on performance specifications.											
1. In FY 2019 - 2023, Combat Training Center Instrumentation Systems (CTC-IS) RDTE will be used to fund a Life Cycle Product-line Management (LCPM) contract structured as a 5 year Single Award Indefinite-Delivery/Indefinite-Quantity (IDIQ) for the implementation of a Hardware Product Line (HPL), the contractor was selected. The strategy is to establish a deliberate approach to Life Cycle Management (LCM) of Live Training Family of Systems, providing the framework for future Life Cycle Efforts for the Hardware Product Line Framework.											
2. In FY 2020, a new competitive IDIQ contract with a 1-year base and 7 single-year option periods was awarded to General Dynamics Mission Systems - CTIA will be executed under this contract.											
3. In FY2022, the Live, Virtual, Constructive Integrating Architecture (LVC-IA) program awarded a new competitive IDIQ contract with a 2-year base period, two 2-year option periods and four 1-year option periods was awarded to Dignitas Technologies, LLC. The LVC-IA concurrency and Synthetic Training Environment interoperability will be executed under this contract.											
4. In FY 2024, FASIT will incrementally fund the Small Business Innovative Research Phase III contract for the development of the NCAST capabilities.											
5. In FY 2023, the Digital Range Training System (DRTS) will continue the funding under the Delivery Order (established in FY 2022) under the Life Cycle Product-line Management (LCPM) IDIQ contract, which will finalize the development and testing of the target Technical Data Package (TDP).											
6. In FY 2023-2026, Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) will leverage the General Dynamics contract vehicle and competitive OTA approaches to address EUL / relevancy challenges as product lines reach those trigger points in their life cycle or changes to weapon system configurations drive those actions. By FY23 three of the five I-MILES product lines will be at end of useful live. These efforts will enable a wide range of industry partners to integrate LTEC/LPAN into existing systems and execute Tech Refresh activities as required until Live STE capabilities are introduced.											
8. In FY 2021, Home Station Instrumentation Training System (HITS) awarded a new delivery order on the General Dynamics contract.											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev	Project (Number/Name) 241 / Nstd Combined Arms
<p>9. In FY 2022, OPFOR Integrated Air Defense System (IADS) will start development of weapon processor software, integration with the training instrumentation systems at the Combat Training Centers (CTCs), and validate the solution through testing.</p> <p>10. UAS Swarm will continue to provide the U.S. Army Combined Training Centers with UAS Swarm support utilizing the existing Aviation and Missile Technology Consortium OTA.</p> <p>11. FY 2024, OMVR program will have a full and open competitive contract for the initial prototype development and design, logistics planning and host chassis maintenance for the OMVR program. The contract package will support the development, design, fabrication, testing, and fielding of the OMVR Visual Modifications to the Combat Training Centers.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
HITS Program Management	Various	PEO STRI : Orlando, FL	1.348	-		-		-		-		-	0.000	1.348	Continuing
LVC-IA Program Management	Various	PEO STRI : Orlando, FL	11.180	0.327	Feb 2022	0.386	Feb 2023	0.385	Feb 2024	-		0.385	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.679		-		-		-	0.000	0.679	-
Subtotal			12.528	0.327		1.065		0.385		-		0.385	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
I-MILES	Option/ IDIQ	General Dynamics Mission Systems : Orlando, FL	5.485	2.714	Dec 2021	2.924	Dec 2022	2.123	Dec 2023	-		2.123	Continuing	Continuing	Continuing
I-MILES SLEP Development	C/TBD	TBD : TBD	-	-		-		1.388	Feb 2024	-		1.388	Continuing	Continuing	Continuing
HITS	Option/ IDIQ	General Dynamics Mission Systems (GDMS) : Orlando, FL 32826	4.842	3.995	Mar 2022	1.616	Mar 2023	0.495	Mar 2024	-		0.495	Continuing	Continuing	Continuing
MSTC Development	C/FP	Multiple : Various	6.033	0.484	Jul 2022	1.165	May 2023	0.289	Feb 2024	-		0.289	0.000	7.971	8.014
LVC-IA Follow-On Contract	C/CPFF	Dignitas Technologies, LLC : Orlando, FL	-	2.748	Apr 2022	2.714	Apr 2023	2.985	Apr 2024	-		2.985	Continuing	Continuing	Continuing
CTIA	C/CPFF	General Dynamics Mission Systems, Inc (GDMS) : Orlando, FL	4.837	2.453	Jan 2022	2.598	Jan 2023	2.740	Jan 2024	-		2.740	Continuing	Continuing	Continuing
CTC-IS	C/IDIQ	General Dynamics Mission Systems : Orlando, FI	46.678	0.541	May 2022	2.582	May 2023	0.520	May 2024	-		0.520	Continuing	Continuing	Continuing
CTC IS	Option/ IDIQ	GENERAL DYNAMICS	-	1.806	Feb 2022	-		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		ONE SOURCE : ORLANDO, FL													
Future Army System of Integrated Targets (FASIT) Battlefield Effects Devices	C/CPFF	General Dynamics One Source, LLC : Fairfax, VA	-	1.914	Feb 2022	-		-		-		-	Continuing	Continuing	Continuing
Future Army System of Integrated Targets (FASIT) Dynamic Infrared Projection	SS/CPFF	JRM Technologies : Orlando, FL	-	1.600	Jan 2022	-		-		-		-	Continuing	Continuing	Continuing
Future Army System of Integrated Targets (FASIT) Non-Pyro Effects	SS/CPFF	Digital Solid State Propulsion, Inc. : Reno, NV	-	2.122	Feb 2022	-		-		-		-	Continuing	Continuing	Continuing
Future Army Systems of Integrated Targets (FASIT) Non-Contact Area Scoring Technology	C/CPFF	SensorMetrix : San Diego, CA	-	-		1.241	Jan 2023	0.944	Nov 2023	-		0.944	Continuing	Continuing	Continuing
Digital Range Training System (DRTS)	Option/CPFF	General Dynamics One Source, LLC : Fairfax, VA	1.445	1.139	Jan 2022	0.997	Jan 2023	-		-		-	Continuing	Continuing	Continuing
OPFOR Integrated Air Defense System (IADS) MANPADS	TBD	TBS : Orlando, FL	-	0.554	Dec 2021	-		-		-		-	Continuing	Continuing	Continuing
Unmanned Aerial System Swarm	Option/CPFF	Colsa : Huntsville, AL	-	0.999	Apr 2022	1.158	Jan 2023	0.900	Jan 2024	-		0.900	Continuing	Continuing	Continuing
CTC-IS	C/IDIQ	GENERAL DYMAMICS ONE SOURCE : Orlando, FL	7.820	4.457	Oct 2021	-		-		-		-	Continuing	Continuing	Continuing
Basic Electronics Maintenance Trainer (BEMT)	SS/FFP	Nida Corp : Melbourne, FL	0.402	0.295	Nov 2021	-		-		-		-	0.000	0.697	0.708
OMVR	C/FFP	TBD : Redstone Arsenal, AL	-	-		-		1.507	Jan 2024	-		1.507	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Devices - Eng Dev				Project (Number/Name) 241 / Nstd Combined Arms					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Pacific Manuever Readiness Center (JPMRC)	C/FFP	USARPAC : PACIFIC REGION	-	-		-		2.511	May 2024	-		2.511	0.000	2.511	-
Combined Joint System Integration Laboratory (CJSIL) Nodes	C/TBD	USARPAC : PACIFIC REGION	-	-		-		1.507	May 2024	-		1.507	0.000	1.507	-
USARJ Cyberspace Integration	C/TBD	USARPAC : PACIFIC REGION	-	-		-		2.712	May 2024	-		2.712	0.000	2.712	-
Subtotal			77.542	27.821		16.995		20.621		-		20.621	Continuing	Continuing	N/A
Remarks															
1. The Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) - FY 2022 began the fielding of the LTEC integration into VTESS and TVS. FY 2023 to FY 2026 will be focused on extending the product life of the three I-MILES product lines that are at the end of useful life.															
2. The LVC-IA program awarded its follow-on contract on 24 May 2022 to Dignitas Technologies, LLC. This follow-on award will continue their concurrency efforts with the Synthetic Training Environment (STE) and Mission Command Information Systems (MCIS) through program completion slated for FY 2035. FY 2024 Base RDTE will support the award option period 1 on the follow-on contract continue concurrency effort with the STE and MCIS.															
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
LVC-IA Test Support	Various	Multiple : Orlando, FL	13.640	0.295	Nov 2021	0.372	Nov 2022	0.338	Nov 2023	-		0.338	Continuing	Continuing	Continuing
I-MILES EPG Testing	MIPR	ATEC : FT Huachuca, AZ	0.162	0.162	Mar 2022	0.156	Mar 2023	0.097	Mar 2024	-		0.097	Continuing	Continuing	Continuing
Subtotal			13.802	0.457		0.528		0.435		-		0.435	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			103.872	28.605		18.588		21.441		-		21.441	Continuing	Continuing	N/A
Remarks															

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

Date: March 2023

Appropriation/Budget Activity

2040 / 5

R-1 Program Element (Number/Name)

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

Project (Number/Name)

241 / Nstd Combined Arms

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
CTIA Development and Architectural Evolution																												
CTC IS Development																												
I-MILES Development																												
I-MILES RELEVANCY																												
HITS Development																												
MSTC Trainer Developments																												
LVC-IA - Version 4 (Development, Integration, Demonstrat...																												
LVC-IA - Concurrency with STE, TADSS, and Mission Comm...																												
FASIT Battlefield Effects Device																												
FASIT Dynamic Infrared Projections																												
FASIT Non Pyro Effects																												
FASIT Non Contact Area Scoring Tech																												
FASIT Combat Identification																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army																Date: March 2023												
Appropriation/Budget Activity 2040 / 5									R-1 Program Element (Number/Name) PE 0604715A / Non-System Training Dev ices - Eng Dev								Project (Number/Name) 241 / Nstd Combined Arms											
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
Digital Range Training System (DRTS) Development																												
OPFOR Integrated Air Defense System (IADS)																												
Unmanned Aerial Systems (UAS) Swarm Development																												
OPFOR Attack Aircraft Shoot-back Capability (OA2SBC)																												
BEMT Army Enterprise Network Server Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604715A / <i>Non-System Training Devices - Eng Dev</i>	Project (Number/Name) 241 / <i>Nstd Combined Arms</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CTIA Development and Architectural Evolution	1	2012	4	2027
CTC IS Development	1	2010	4	2027
I-MILES Development	2	2017	3	2027
I-MILES RELEVANCY	2	2018	4	2027
HITS Development	3	2012	4	2024
MSTC Trainer Developments	2	2017	4	2024
LVC-IA - Version 3 (Development, Integration, Demonstration and Testing)	4	2016	3	2018
LVC-IA - Version 4 (Development, Integration, Demonstration and Testing)	4	2018	4	2023
LVC-IA - Concurrency with STE, TADSS, and Mission Command Systems	1	2024	4	2032
FASIT Battlefield Effects Device	2	2022	2	2023
FASIT Dynamic Infrared Projections	2	2022	2	2023
FASIT Non Pyro Effects	4	2021	4	2023
FASIT Non Contact Area Scoring Tech	4	2022	4	2024
FASIT Combat Identification	1	2025	4	2027
Digital Range Training System (DRTS) Development	2	2018	4	2023
Integrated Military Operations in Urban Terrain (MOUT) Training System (IMTS)	2	2020	4	2021
OPFOR Integrated Air Defense System (IADS)	4	2017	4	2022
Unmanned Aerial Systems (UAS) Swarm Development	1	2022	4	2026
OPFOR Surrogate Wheeled Vehicles (OSWV)	2	2019	4	2021
OPFOR Attack Aircraft Shoot-back Capability (OA2SBC)	2	2021	2	2022
S/SVT - Development	3	2019	3	2020
BEMT Army Enterprise Network Server Development	1	2020	1	2023

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	58.633	55.541	74.738	-	74.738	70.022	64.141	70.657	71.628	Continuing	Continuing
126: PEO Electronic Protect	-	3.687	-	14.061	-	14.061	-	-	-	-	0.000	17.748
146: Air & Msl Defense Planning Control Sys	-	2.772	1.255	26.367	-	26.367	20.465	15.600	15.893	16.160	Continuing	Continuing
FG5: Counter Unmanned Aerial Systems (UAS)	-	52.174	54.286	34.310	-	34.310	49.557	48.541	54.764	55.468	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Army Long-Range Persistent Surveillance (ALPS) is a passive sensor that provides long-range surveillance against Cruise Missile (CM), Fixed Wing (FW), Rotary Wing (RW), and Unmanned Aircraft System (UAS) threats.

FY 2024 requested funding in the amount of \$14.061 million is for the ALPs program office to provide development and integration in support of the Pacific Deterrence Initiative including the engineering, testing and validation of the system and software updates necessary to meet the new requirement for ALPS to integrate into the Army Integrated Air and Missile Defense (AIAMD) architecture (\$1.004 million). This funding will also provide prototype fabrication, system support and operation for air surveillance assessments including hardware, engineering and testing of the system necessary to determine the effective use of ALPS. (\$13.057 million).

A portion of this funding line is a key enabler of the Army Modernization Priorities in support of Air Missile Defense Planning and Control System (AMDPCS).

AMDPCS FY 2024 funding request of \$26.367 million provides integration of air and missile defense operations at all echelons. Specifically, the Air and Missile Defense Work Station (AMDWS) provides a correlated air picture using local radars, allowing the Commander the visibility and situational understanding of the airspace; automated defense design and staff planning tools in AMDWS afford soldiers horizontal and vertical collaborative planning with adjacent units. Air Defense System Integrator (ADSI) serves as a joint tactical data link gateway/air picture, and when correlated by the Forward Area Air Defense Command and Control (FAAD C2) and displayed on AMDWS, provides a near real-time, three-dimensional air picture for the Commander. Joint Tactical Terminal (JTT) provides soldiers Theater Ballistic Missile (TBM) early warning, allowing them to take appropriate actions. AMDPCS is fielded to Army Air and Missile Defense Commands (AAMDC), Air Defense Artillery Brigades (ADA BDE), Air and Missile Defense Battalions (AMD BN), and Terminal High Altitude Area Air Defense Batteries (THAAD BTRY). Air Defense Airspace Management (ADAM), a variant of AMDPCS with similar capabilities, is fielded to Corps, Divisions, Brigade Combat Teams (BCT), and multi-functional support brigades. As part of the capability and technology reuse, AMDWS external interfaces are being leveraged by Integrated Battle Command System (IBCS) to avoid redevelopment of existing capabilities. AMDWS and FAAD C2 are core components of the Air and Missile Defense system-of-systems currently deployed in combat zones.

The Counter-Rocket, Artillery, Mortar (C-RAM) system-of-systems is an evolutionary program that detects RAM launches, provides localized warning to the defended area, intercepts rounds in flight, and enhances response to and defeat of enemy forces. C-RAM combines multi-service fielded and non-developmental item sensors, command and control (C2) equipment, warning systems, and a modified U.S. Navy intercept system (Land-based Phalanx Weapon System [LPWS]), all connected via

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604741A / <i>Air Defense Command, Control and Intelligence - Eng Dev</i>
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a wireless local area network. The FAAD C2 system has been enhanced to integrate the sensors, weapons, and warning systems to provide C2 for the C-RAM system-of-systems. FAAD C2 software correlates the RAM sensor data, evaluates the threat, provides early warning, directs engagements, and cues counterfire systems and reaction forces. FAAD C2 employs an agile software development, maintenance, and sustainment strategy, with Urgent Materiel Releases (UMR) every six (6) months and Full Materiel Releases (FMR) every 15-18 months to keep pace with rapidly fielding integrated systems to meet operational needs. C-RAM capability in theater is supported through the Overseas Operations (OCO) process. Base RDT&E supports FAAD C2 basic Air Defense functionality as well as directed enhancements to the C-RAM system-of-systems capability, such as development and integration of C-RAM network security enhancements and development of all-digital radar technology to address emerging threats.

Counter-Unmanned Aircraft Systems (C-UAS) requested FY 2024 funding for \$34.310 million will provide forces at all echelons with cross-domain capabilities, while supporting joint operational requirements. These combined arms solutions will support the full kill-chain and result in solutions addressing fixed/semi-fixed, mobile platform, and dismounted missions. Development efforts are aligned with Joint Requirements Oversight Council Memorandum (JROCM) 078-20, which codifies the threshold and objective capability requirements for C-UAS development and focuses on technologies which increase capabilities to identify, classify, track, and defeat Groups 1-3 UAS threats.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	59.518	39.541	34.335	-	34.335
Current President's Budget	58.633	55.541	74.738	-	74.738
Total Adjustments	-0.885	16.000	40.403	-	40.403
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.885	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	40.403	-	40.403

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

Project: FG5: *Counter Unmanned Aerial Systems (UAS)*

Congressional Add: *Software Integration Facility (SWIF) Digital Ecosystem*

	FY 2022	FY 2023
	-	20.000
Congressional Add Subtotals for Project: FG5	-	20.000
Congressional Add Totals for all Projects	-	20.000

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	
<div>Change Summary Explanation</div> <div>The increase in FY 2024 is the result of increased software development and FAAD C2 convergence refactoring and modernization efforts.</div>		

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 126 / PEO Electronic Protect			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
126: PEO Electronic Protect	-	3.687	-	14.061	-	14.061	-	-	-	-	0.000	17.748
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Note In FY 2023, Project 126: PEO Electronic Protect had no requested funding. Beginning in FY 2022, the Army Long-Range Persistent Surveillance (ALPS) system efforts transitioned from Program Element 0603327A, Air and Missile Defense Systems Engineering to Program Element 0604741A, Project 126: PEO Electronic Protect.												
A. Mission Description and Budget Item Justification Army Long-Range Persistent Surveillance (ALPS) is a passive sensor that provides long-range surveillance against Cruise Missile (CM), Fixed Wing (FW), Rotary Wing (RW), and Unmanned Aircraft System (UAS) threats. President's Budget 2024 request in the amount of \$14.061 million is for the ALPs program office to provide development and integration in support of the Pacific Deterrence Initiative including the engineering, testing and validation of the system and software updates necessary to meet the new requirement for ALPS to integrate into the Army Integrated Air and Missile Defense (AIAMD) architecture (\$1.004 million). This funding will also provide prototype fabrication, system support and operation for air surveillance assessments including hardware, engineering and testing of the system necessary to determine the effective use of ALPS. (\$13.057 million).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: ALPS Development and Integration for COCOMs									3.687	-	-	
Description: Provide ALPS prototype systems to meet EUCOM, INDOPACOM, and CENTCOM identified operational needs and to conduct an assessment via a report by the combatant commander(s).												
Title: ALPS Surveillance Assessment									-	-	13.057	
Description: Provide prototype fabrication, system support and operation for air surveillance assessments.												
FY 2024 Plans: This support includes fabricating hardware, engineering and testing of the system.												
FY 2023 to FY 2024 Increase/Decrease Statement: The increase in FY 2024 funds supports prototype fabrication, system support and operation for air surveillance assessments.												
Title: ALPS Development and Integration for Pacific Deterrence Initiative									-	-	1.004	
Description: Provide development and integration in support of the Pacific Deterrence Initiative.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 126 / PEO Electronic Protection			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024
FY 2024 Plans: This support includes the engineering, testing and validation of the system and software updates necessary to meet the new requirement for ALPS to integrate into the AIAMD architecture.											
FY 2023 to FY 2024 Increase/Decrease Statement: The increase in FY 2024 is the result of additional funding for providing development and integration in support of the Pacific Deterrence Initiative.											
Accomplishments/Planned Programs Subtotals									3.687	-	14.061
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• EX2: Lower Tier Air Missile Defense (LTAMD) Capability	408.766	380.147	816.663	-	816.663	118.939	122.544	89.261	90.257	0.000	2,026.577
• FM3: Future Interceptor	6.643	8.179	8.040	-	8.040	8.042	8.052	8.138	8.229	0.000	55.323
• C53101: MSE Missile	1,333.148	1,037.093	1,212.832	-	1,212.832	961.192	973.464	985.250	985.854	Continuing	Continuing
• C62002: IFPC INC 2- I BLOCK 1 SYSTEM	19.053	18.924	313.189	-	313.189	697.307	1,002.324	1,023.636	985.973	0.000	4,060.406
• 0604117A: Maneuver - Short Range Air Defense (M-SHORAD)	37.939	274.838	281.239	-	281.239	331.362	324.855	422.392	455.779	Continuing	Continuing
• C14300: M-SHORAD - Procurement	332.984	135.747	400.697	-	400.697	-	-	-	-	Continuing	Continuing
• 0604820A: Radar Development	124.832	71.259	94.944	-	94.944	48.837	18.987	8.508	8.603	0.000	375.970
• S40: Army Integrated Air and Missile Defense	154.257	263.545	254.163	-	254.163	355.723	214.394	135.637	166.652	0.000	1,544.371
• BZ5075: IAMD Battle Command System	399.800	438.967	412.556	-	412.556	509.654	572.362	658.046	442.781	Continuing	Continuing
• 0604741A: Air Defense Command, Control and Intelligence - Eng Dev	58.633	55.541	74.738	-	74.738	70.022	64.141	70.657	71.628	Continuing	Continuing
• AD5070: AIR & MSL Defense Planning & Control Sys	67.193	72.619	68.892	-	68.892	67.495	-	-	-	0.000	276.199
• 0605052A: Indirect Fire Protection Capability Inc 2 - Block 1	175.604	131.093	196.248	-	196.248	154.275	166.672	113.841	135.117	0.000	1,072.850

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army							Date: March 2023				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 126 / PEO Electronic Protect			

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• 146: Air & Msl Defense Planning Control Sys	2.772	1.255	26.367	-	26.367	20.465	15.600	15.893	16.160	0.000	98.512

Remarks
ALPS was previously funded under Program Element 0603327A, Air and Missile Defense Systems Engineering. This funding transitioned to Program Element 0604741A, Project 126: PEO Electronic Protect.

D. Acquisition Strategy

ALPS will utilize an Indefinite Delivery, Indefinite Quantity (IDIQ) contract to support the engineering, testing and validation of the system and software updates required to integrate ALPS into the AIAMD architecture and provide prototype fabrication, system support and operation for air surveillance assessments.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev						Project (Number/Name) 126 / PEO Electronic Protection and Intelligence - Eng Dev			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Agencies & Government Program Management	Various	Various : Various	2.622	1.200		-		1.557	Dec 2023	-		1.557	Continuing	Continuing	Continuing
Subtotal			2.622	1.200		-		1.557		-		1.557	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ALPS Development and Integration for COCOMs	Various	Various : Various	26.537	2.487	May 2022	-		-		-		-	0.000	29.024	-
ALPS Surveillance Assessment	Various	Various : Various	-	-		-		11.500	Dec 2023	-		11.500	0.000	11.500	-
ALPS Development and Integration for Pacific Deterrence Initiative	Various	Various : Various	-	-		-		1.004	Dec 2023	-		1.004	0.000	1.004	-
Subtotal			26.537	2.487		-		12.504		-		12.504	0.000	41.528	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			29.159	3.687		-		14.061		-		14.061	Continuing	Continuing	N/A
Remarks ALPS was previously funded under PE 0603327A.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 126 / PEO Electronic Protect	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
ALPS Prototype Development and Integration																												
ALPS Prototype Deployments																												
ALPS Pacific Deterrence Initiative - Engineering for Sys...																												
ALPS Pacific Deterrence Initiative - System and Software...																												
ALPS Pacific Deterrence Initiative - Integration Validation																												
ALPS Air Surveillance Assessments - Fabricate Hardware																												
ALPS Air Surveillance Assessments - Testing																												
ALPS Air Surveillance Assessments - Assessment																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 126 / PEO Electronic Protect	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ALPS Prototype Development and Integration	1	2017	4	2022
ALPS Prototype Deployments	3	2019	4	2022
ALPS Pacific Deterrence Initiative - Engineering for System and Software Updates	1	2024	2	2024
ALPS Pacific Deterrence Initiative - System and Software Testing	2	2024	3	2024
ALPS Pacific Deterrence Initiative - Integration Validation	4	2024	4	2024
ALPS Air Surveillance Assessments - Fabricate Hardware	1	2024	2	2024
ALPS Air Surveillance Assessments - Testing	2	2024	4	2024
ALPS Air Surveillance Assessments - Assessment	4	2024	4	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
146: Air & Msl Defense Planning Control Sys	-	2.772	1.255	26.367	-	26.367	20.465	15.600	15.893	16.160	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding line is a key enabler of the Army Modernization Priorities in support of Air and Missile Defense.

The Air Missile Defense Planning and Control System (AMDPCS) provides integration of air and missile defense operations at all echelons. AMDPCS is comprised of the following major subsystems: Air Missile Defense Work Station (AMDWS) provides a correlated air picture using local radars, allowing the Commander the visibility and situational understanding of the airspace; tools in AMDWS afford Soldiers horizontal and vertical collaborative planning with adjacent units. Air Defense System Integrator (ADSI) serves as a joint tactical datalink gateway/air picture. Forward Area Air Defense Command and Control (FAAD C2), correlates the joint and local air picture and when displayed on AMDWS, provides a near real time, three dimensional air picture for the Commander. Joint Tactical Terminal (JTT) provides Soldiers Theater Ballistic Missile (TBM) early warning allowing them to take appropriate actions. AMDPCS are currently fielded to Army Air and Missile Defense Commands (AAMDC), Air Defense Artillery Brigades, (ADA BDE), Air and Missile Defense Battalions (AMD BN) and Terminal High Altitude Area Defense Batteries (THAAD BTRY). Air Defense Airspace Management (ADAM), a variant of AMDPCS, are fielded to Corps, Divisions, Brigade Combat Teams (BCTs) and multi-functional support brigades. AMDPCS is also being procured to support Interim Maneuver Short Range Air Defense (IM-SHORAD), European Deterrence Initiative (EDI), and Grow the Army (GTA) initiative. As part of the capability and technology reuse, AMDWS external interfaces are being leveraged by Integrated Battle Command System (IBCS) to avoid redevelopment of existing capabilities. AMDWS and FAAD C2 are core components of the Air and Missile Defense system-of-systems currently deployed in combat zones.

FY 2024 Base dollars in the amount of \$26.367 million fund development, cyber compliance and certification of AMDWS and FAAD C2 software, as well as accreditation of AMDPCS family-of-systems shelters and software.

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

	FY 2022	FY 2023	FY 2024
Title: AMDWS Software Development	2.097	0.513	2.894
Description: Supports LandWarNet, Common Operating Environments (COE), and Defense Information Systems Agency (DISA) architecture framework. AMDWS software engineering and development ensures interoperability and integration with maneuver battle command elements. AMDWS will interface with Integrated Air and Missile Defense (IAMD) and serves as a planning tool for the system-of-systems, as well as providing external interfaces.			
FY 2023 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
Provide critical cyber security compliance only.					
FY 2024 Plans: Support updated Army interfaces with the new Kessel Run program, expanded interfaces with Command and Control Battle Management and Communications (C2BMC) Planner and Theater High Altitude Air Defense (THAAD) Portable Planner, and supporting additional geospatial requirements with Mission Command.					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase due to requirements for supporting updated Army interfaces with the new Kessel Run program, expanded interfaces with Command and Control Battle Management and Communications (C2BMC) Planner and Theater High Altitude Air Defense (THAAD) Portable Planner, and supporting additional geospatial requirements with Mission Command.					
Title: Engineering, Development, Test and Evaluation Description: Ensures Interoperability Engineering System Suite Tool and Software Suitability and Supportability Service, testing and licenses, and interoperability and cyber compliance through engineering, development, test, and evaluation of the AMDPCS family-of-systems shelter objective configurations; execute evaluation and finalization of the AMDPCS tactical communications, data processing, and vehicle/shelter/power generation/environmental system block upgrade program for fielded systems. FY 2023 Plans: Maintains interoperability and cyber compliance for AMDPCS family-of-systems shelter objective configurations and migration to Integrated Battle Command System (IBCS) configuration. FY 2024 Plans: Maintain FAAD C2 and AMDWS cyber certification and accreditation for AMDPCS Family-of-Systems and Integrated Battle Command System (IBCS) convergence. FY 2023 to FY 2024 Increase/Decrease Statement: The increase in this cost element is driven by required software development and modernization, test, staffing, prime contract, and efforts to maintain interoperability and cyber compliance for FAAD C2 software required to support AMDPCS/Integrated Battle Command System (IBCS) convergence.			0.424	0.437	8.585
Title: Software System Certification Testing, Accreditation, and Approval of Authority-to-Operate (ATO) Description: Accomplish software system certification testing, accreditation, and approval of ATOs for the various software systems; BitLocker encryption and other authorized/approved G6 software implementation; Army and joint integration and interoperability assessments. FY 2023 Plans:			0.251	0.259	0.267

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
Conduct Information Assurance Vulnerability Assessments and Management activities, and maintain required Authority to Operate (ATOs).					
FY 2024 Plans: Conduct Information Assurance Vulnerability Assessments and Management activities and maintain required Authority to Operate (ATOs).					
FY 2023 to FY 2024 Increase/Decrease Statement: Increase is a result of inflation.					
Title: SBIR/STTR Transfer			-	0.046	-
Description: Funding transferred in accordance with Title 15 USC 638.					
FY 2023 Plans: Funding transferred in accordance with Title 15 USC 638.					
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.					
Title: FAAD C2 Software Development and Modernization			-	-	9.400
Description: Supports software lab, testing, interoperability, cyber compliance, Hardware Obsolescence and software configuration management of the FAAD C2 software required to support program of record AMDPCS, Counter-Rocket, Artillery, Mortar (C-RAM), Counter-Unmanned Aerial Systems (C-UAS), and Short-Range Air Defense (SHORAD) Command and Control (C2) solutions.					
FY 2024 Plans: FY 2024 funding provides for FAAD C2 software integration, development, and tests in support to AMDPCS Family-of-Systems and future program platform requirements in support of IBCS convergence.					
FY 2023 to FY 2024 Increase/Decrease Statement: The increase in this cost element is driven by required software development and modernization efforts to maintain interoperability and cyber compliance for FAAD C2 software required to support AMDPCS/Integrated Battle Command System (IBCS) convergence.					
Title: IBCS/FAAD C2 Convergence; Ada to C++ Refactoring and Modernization			-	-	5.221

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Description: Convert the Forward Area Air Defense (FAAD) Command and Control (C2) software capabilities and interfaces from Ada software language to C++ Software Language; modernize the software by modularizing the capabilities, and developing a capabilities software product line (SPL) for Integrated Air and Missile Defense Battle Command System's (IBCS) to utilize.</p> <p>FY 2024 Plans: Convert FAAD C2 software ADA language to C++. Modernize the Software by Modularizing it. Develop a Software Capabilities SPL to be converged into IBCS for a single software baseline.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: The increase in this cost element is driven by the requirement to modernize and convert FAAD C2 software to C++ language, and architecturally decompose FAAD into modules of capability that can be leveraged by the IBCS architecture in support of IBCS convergence.</p>			
Accomplishments/Planned Programs Subtotals	2.772	1.255	26.367

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

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• AD5070: AIR & MSL Defense Planning & Control Sys	67.193	72.619	68.892	-	68.892	67.495	-	-	-	0.000	276.199
• 0605457A: Army Integrated Air and Missile Defense (AIAMD)	154.257	263.545	284.095	-	284.095	365.377	216.206	136.141	167.156	0.000	1,586.777
• BZ5075: IAMD Battle Command System	399.800	438.967	412.556	-	412.556	509.654	572.362	658.046	442.781	Continuing	Continuing
• 0604117A: Maneuver - Short Range Air Defense (M-SHORAD)	37.939	274.838	281.239	-	281.239	331.362	324.855	422.392	455.779	Continuing	Continuing
• C14300: M-SHORAD - Procurement	332.984	135.747	400.697	-	400.697	-	-	-	-	Continuing	Continuing

Remarks

This program is an integral part of the Army Integrated Fires Mission Command (IFMC) convergence capability for Integrated Battle Command System (IBCS) architecture.

D. Acquisition Strategy

The acquisition strategy relies primarily a Non-Developmental Item (NDI) integration efforts. The primary intent of the AMDPCS program is to take the best available governmental and commercial technologies and integrate them into a seamless Command and Control (C2) program to provide common tools for airspace situational

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys
<p>awareness, and command and control for all Army Air Defense units at all echelons. Also, to continue development, testing, and certification of AMDWS software, and ensure accreditation of AMDPCS shelter configurations and software until convergence with the Integrated Air & Missile Defense (IAMD) Battle Command System (IBCS). Finally, to complete procurement of AMDPCS shelter configurations, field, and execute tech refresh on fielded systems until convergence with IBCS and transition to sustainment in FY 2027.</p> <p>The AMDWS software development contract is sole source (SS)/cost plus fixed fee (CPFF) to Northrop Grumman.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	34.865	0.291	Dec 2021	0.299	Dec 2022	0.307	Dec 2022	-		0.307	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	Various : TBD	-	-		0.046		-		-		-	0.000	0.046	-
Subtotal			34.865	0.291		0.345		0.307		-		0.307	Continuing	Continuing	N/A
Remarks Not Applicable															
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
AMDWS Software Development and Engineering	SS/CPFF	Northrop Grumman : Huntsville AL	185.126	2.037	Oct 2021	0.513	Oct 2022	2.894	Oct 2022	-		2.894	Continuing	Continuing	Continuing
Developmental Engineering	Various	Various : Various	48.094	0.383	Dec 2021	0.334	Dec 2022	8.278	Dec 2022	-		8.278	Continuing	Continuing	Continuing
IBCS/FAAD C2 Convergence; Ada to C++ Refactoring and Modernization	TBD	Various : Redstone Arsenal	-	-		-		5.221		-		5.221	0.000	5.221	-
Subtotal			233.220	2.420		0.847		16.393		-		16.393	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FAAD C2 Software Development and Modernization	TBD	Various : Redstone Arsenal	-	-		-		9.400		-		9.400	0.000	9.400	-
Subtotal			-	-		-		9.400		-		9.400	0.000	9.400	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev						Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys			
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification/Testing	Various	JITC : Ft Huachuca, AZ	1.509	0.026	Feb 2022	0.027	Feb 2023	0.267	Feb 2023	-		0.267	Continuing	Continuing	Continuing
Interoperability Assessment	Various	CTSF : Ft Hood, TX	1.964	0.035	May 2022	0.036	May 2023	-		-		-	Continuing	Continuing	Continuing
Subtotal			3.473	0.061		0.063		0.267		-		0.267	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			271.558	2.772		1.255		26.367		-		26.367	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)		Project (Number/Name)	
2040 / 5		PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev		146 / Air & Msl Defense Planning Control Sys	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
AMDWS Block VI Contract																												
AMDWS Block VI Contract																												
AMDWS AMD Interfaces: C2BMC, Kessel Run, AOC WS, etc																												
AMDWS AIC 7.0.3.1																												
AMDWS AIC 7.0.3.2																												
FAAD C2 SW Maintenance and Modernization Planning																												
FAAD C2 Modernization																												
FAAD C2 Modularity to IBCS Manuever																												
FAAD C2 Certification Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) 146 / Air & Msl Defense Planning Control Sys

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AMDWS Block VI Contract	1	2022	2	2026
AMDWS AMD Interfaces: C2BMC, Kessel Run, AOC WS, etc	4	2012	4	2030
AMDWS AIC 7.0.3.1	1	2022	3	2022
AMDWS AIC 7.0.3.2	1	2024	3	2024
FAAD C2 SW Maintenance and Modernization Planning	2	2022	1	2025
FAAD C2 Modernization	1	2025	1	2027
FAAD C2 Modularity to IBCS Manuever	2	2024	2	2028
FAAD C2 Certification Testing	3	2027	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
FG5: Counter Unmanned Aerial Systems (UAS)	-	52.174	54.286	34.310	-	34.310	49.557	48.541	54.764	55.468	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
Counter-Unmanned Aircraft Systems (C-UAS) efforts will provide forces at all echelons with cross-domain capabilities, while supporting joint operational requirements. These combined arms solutions will support the full kill-chain and result in solutions addressing fixed/semi-fixed, mobile platform, and dismounted missions. Development efforts are aligned with Joint Requirements Oversight Council Memorandum (JROCM) 078-20, which codifies the threshold and objective capability requirements for C-UAS development and focuses on technologies which increase capabilities to identify, classify, track, and defeat Groups 1-3 UAS threats.												
Funding supports:												
Fixed/Mobile System Development: FY 2024 Base dollars in the amount of \$8.695 million will fund rapid component prototyping, facilitate operational assessments, pursue development and integration of mature hardware, address obsolescence, and test performance improvements of existing systems against current and near-term threats (managed by Program Executive Office Missiles and Space (PEO MS)).												
Tech Refresh for Army JUON/JEON Efforts: FY 2024 Base dollars in the amount of \$5.250 million will fund technological development of C-UAS capabilities supporting deployed systems, to keep pace with evolving threats in response to existing Joint Urgent Operational Need (JUON) CC-0558 (managed by PEO MS). FY 2024 Base dollars in the amount \$1.580 million will fund technology refreshes in support of existing Army Joint Emergent Operational Need (JEON) system improvements in response to ST-0008, to provide Army priority fixed sites with the ability to detect, engage, and defeat Groups 1 and 2 UAS (managed by PEO Intelligence, Electronic Warfare and Sensors (IEWS)).												
C-sUAS Capability Development Document (CDD) Pre-Planned Product Improvement (P3I): FY 2024 Base dollars in the amount of \$18.785 million will fund prototyping, pursue development and integration of emerging technologies, and test performance improvements against a 2035 threat (managed by PEO MS).												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: Fixed/Mobile System Development									15.252	10.064	8.695	
Description: Funds rapid component prototyping, facilitates operational assessments, pursues development and integration of mature hardware, addresses obsolescence, and tests performance improvements of existing systems against current and near-term threats.												

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev		Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
FY 2023 Plans: FY 2023 Base funding will support prototype build and integration efforts for a small, flat-panel fire control radar, to provide fixed and mounted systems with an enhanced air surveillance capability against fixed wing, rotary wing, and Groups 1-3 UAS. Funding will support biannual C-UAS system of systems integration/record tests for new and enhanced components, systems, and subsystems.					
FY 2024 Plans: FY 2024 Base funding will complete prototype build and integration efforts and support environmental and qualification testing for a small, flat-panel fire control radar, to provide fixed and mounted systems with an enhanced air surveillance capability against fixed wing, rotary wing, and Groups 1-3 UAS. Funding will support biannual C-UAS system of systems integration/record tests for new and enhanced components, systems, and subsystems.					
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 Base funds decrease due to completion of initial hardware and software design efforts.					
Title: Tech Refresh for Army JUON/JEON Efforts Description: Funds technology refreshes in response to ST-0008 and continues technological development of C-UAS capabilities supporting deployed systems in response to JUON CC-0558.			6.688	6.660	6.830
FY 2023 Plans: FY 2023 Base funding will provide technology refresh supporting existing Army JEON system improvements in response to ST-0008, to develop new and emerging signals of interest to pace the evolving threat and provide Army priority fixed sites with the ability to detect, engage, and defeat Groups 1 and 2 UAS. This funding will also support technological development of C-UAS systems deployed under existing JUON CC-0558, to include improvements to electronic warfare effectiveness against current and future threats.					
FY 2024 Plans: FY 2024 Base funding will provide technology refresh supporting existing Army JEON system improvements in response to ST-0008, to develop new and emerging signals of interest to pace the evolving threat and provide Army priority fixed sites with the ability to detect, engage, and defeat Groups 1 and 2 UAS. This funding will also support technological development of C-UAS systems deployed under existing JUON CC-0558, to include improvements to electronic warfare effectiveness against current and future threats.					
FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 Base funds increase is very slight, as funding has remained stable over time.					
Title: Family of Counter UAS Systems (FoCUS)			30.234	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev		Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2022	FY 2023	FY 2024
Description: Matures artificial intelligence and machine learning algorithms that enable FoCUS man-out-of-the-loop (MOTL) operations and passive UAS sensor search, target interrogation, and verification capabilities. Continued algorithm development supports operational assessment and follow-on procurement of FoCUS capabilities required to mitigate critical counter-small UAS capability gaps in CONUS and OCONUS.					
Title: C-sUAS Capability Development Document (CDD) Pre-Planned Product Improvement (P3I) Description: Funds prototyping, pursues development and integration of emerging technologies, and tests performance of system improvements against a 2035 threat. This effort was previously titled Next Generation Product Development. FY 2023 Plans: FY 2023 Base funding will identify and characterize emerging technologies which support prototyping, integration, and testing of system improvements to increase the capability to detect, track, and defeat the 2035 C-sUAS threat, including execution of an M-LIDS single vehicle Concept Verification Event (CVE) at Yuma Proving Ground, development and testing of updated technical manuals and safety documentation required to transition Coyote interceptor loading responsibility to Soldiers, Coyote Blk 2+ improvements to address reliability and obsolescence, enhanced command and control systems for automated decision aids, and improvements to address obsolescence and reduce reliance on contractor logistics support for Electronic Warfare (EW) systems. Testing will ensure technologies meet environmental and reliability/survivability/availability requirements. FY 2024 Plans: FY 2024 Base funding will continue efforts to identify and characterize emerging technologies which support prototyping, integration, and testing of system improvements to increase the capability to detect, track, and defeat the 2035 C-sUAS threat, and will continue development and testing of updated technical manuals and safety documentation required to transition Coyote interceptor loading responsibility to Soldiers, enhanced command and control systems for automated decision aids, and improvements to address obsolescence and reduce reliance on contractor logistics support for EW systems. Testing will ensure technologies meet environmental and reliability/survivability/availability requirements. FY 2023 to FY 2024 Increase/Decrease Statement: FY 2024 Base funds increase due to ramp up of funding to support C-sUAS P3I requirements.			-	16.311	18.785
Title: FY 2023 SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC 638. FY 2023 Plans:			-	1.251	-

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army									Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024
Funding transferred in accordance with Title 15 USC 638.											
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC 638.											
Accomplishments/Planned Programs Subtotals									52.174	34.286	34.310
								FY 2022	FY 2023		
Congressional Add: Software Integration Facility (SWIF) Digital Ecosystem								-	20.000		
FY 2023 Plans: FY 2023 Base funding will support hardware procurement, development, and integration to provide the initial SWIF for the Integrated Fires Rapid Capabilities Office (IFRCO), managed by PEO MS. The SWIF capability provides an integrated development environment, and it enables increased system-of-systems (SoS) development and integration speed and efficiency across the Integrated Fires architecture.											
Congressional Adds Subtotals								-	20.000		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• AD0511: C-SUAS FIXED	710.143	299.789	27.847	-	27.847	16.202	39.919	38.632	39.665	0.000	1,172.197
• AD0512: C-SUAS OPERATIONAL	-	-	313.490	-	313.490	261.806	270.466	279.008	287.471	0.000	1,412.241
• AD0513: C-SUAS	-	-	24.039	-	24.039	5.223	6.881	5.354	6.489	0.000	47.986
GROUND READINESS											
Remarks											
D. Acquisition Strategy											
The C-UAS program is transitioning from a rapid acquisition and deployment of interim capabilities, in response to JUON CC-0558 and JEON ST-0008, to a formalized acquisition approach. Technical refreshes will enable JUON/JEON capabilities to remain current, and incremental improvements will mitigate gaps created by enemy Groups 1-3 UAS, until they can be acquired using multiple Acquisition Category (ACAT) III programs of record. Starting in FY 2022, based on C-sUAS Capability Development Document (CDD) Increment 1 and Army Acquisition Executive (AAE) direction, the Army began efforts to establish five programs of record: Fixed Site-Low, slow, small Unmanned Aircraft System (UAS) Integrated Defeat System (FS-LIDS); Mobile-Low, slow, small UAS Integrated Defeat System (M-LIDS); Ku-band Radio Frequency System (KuRFS) Family of Radars; Coyote Block 2+ Interceptor; and Handheld/Dismounted Systems. A P3I program will incorporate incremental improvements to address future C-sUAS capabilities, creating enduring next generation C-sUAS solutions. C-sUAS efforts utilize multiple contract vehicles, types, and vendors. Existing Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts are in place through FY25 to procure and field all C-sUAS major end items. Handheld systems are procured through the Defense Logistics Agency, Army Contracting Command, and U.S. Special Operations Command.											

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)
<p>The C-UAS program incorporates development and test for survivability and resiliency in denied environments and will incorporate emerging technologies as they mature. Funding supports biannual C-UAS system of systems integration/record tests for new and enhanced components, systems, and subsystems.</p> <p>C-UAS 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.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management - CsUAS	Various	Multiple : Multiple	-	1.293	Nov 2021	2.374	Feb 2023	2.946	Dec 2023	-		2.946	Continuing	Continuing	-
Program Management - JUON CC-0558	Various	Multiple : Multiple	32.569	0.428	Nov 2021	0.457	Feb 2023	-		-		-	Continuing	Continuing	-
Program Management - FoCUS	Various	Multiple : Multiple	-	3.050	Nov 2021	-		-		-		-	0.000	3.050	-
Program Management - SWIF	Various	Multiple : Multiple	-	-		1.600	May 2023	-		-		-	0.000	1.600	-
SBIR/STTR Transfer	TBD	Various : Various	-	-		1.251		-		-		-	0.000	1.251	-
Subtotal			32.569	4.771		5.682		2.946		-		2.946	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fixed/Mobile System Development	C/IDIQ	Multiple : Multiple	92.866	13.166	Mar 2022	8.162	May 2023	7.052	Mar 2024	-		7.052	Continuing	Continuing	-
Tech Refresh - JUON CC-0558	C/Various	Multiple : Multiple	5.000	4.359	Mar 2022	4.114	Feb 2023	4.258	Mar 2024	-		4.258	Continuing	Continuing	-
Tech Refresh - JEON ST-0008	MIPR	Multiple : Multiple	-	1.638	Feb 2022	1.587	Feb 2023	1.580	Jan 2024	-		1.580	0.000	4.805	-
CDD P3I	C/Various	Multiple : Multiple	-	-		13.228	Jun 2023	15.234	Mar 2024	-		15.234	Continuing	Continuing	-
Software Integration Facility (SWIF) Digital Ecosystem	C/IDIQ	To Be Determined : To Be Determined	-	-		18.400	May 2023	-		-		-	0.000	18.400	-
Family of Counter UAS Systems (FoCUS)	Various	Multiple : Multiple	15.000	23.184	Jan 2022	-		-		-		-	0.000	38.184	-
Kinetic Defeat Development	C/Various	Multiple : Multiple	138.953	-		-		-		-		-	0.000	138.953	-
Sensor Development	C/Various	Multiple : Multiple	94.439	-		-		-		-		-	0.000	94.439	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev				Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)					
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C-UAS C2 Software Development	C/CPFF	Northrop Grumman : Redondo Beach, CA	38.866	-		-		-		-		-	0.000	38.866	-
Dismounted/Handheld Systems Development	Various	Multiple : Multiple	19.022	-		-		-		-		-	0.000	19.022	-
FY20 OMNIBUS Funding	Various	Multiple : Multiple	37.950	-		-		-		-		-	0.000	37.950	-
Subtotal			442.096	42.347		45.491		28.124		-		28.124	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support - C-sUAS	MIPR	Multiple : Multiple	-	0.793	Dec 2021	2.611	May 2023	2.720	Feb 2024	-		2.720	Continuing	Continuing	-
Test Support - JUON CC-0558	MIPR	Multiple : Multiple	65.809	0.263	Dec 2021	0.502	Feb 2023	0.520	Feb 2024	-		0.520	Continuing	Continuing	-
Test Support - FoCUS	Various	Multiple : Multiple	-	4.000	Dec 2021	-		-		-		-	0.000	4.000	-
Subtotal			65.809	5.056		3.113		3.240		-		3.240	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			540.474	52.174		54.286		34.310		-		34.310	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev		Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
C-UAS Emerging Threat Development	Emerging Threat Development, Obsolescence Mitigation, and System Updates																											
Q-50A False Track Mitigation Development	Q-50A False Track Mitigation Development																											
FoCUS 1A Developmental Test	FoCUS 1A Developmental Test																											
C-sUAS FY22 Winter Test	C-sUAS FY22 Winter Test																											
Universal C2 Demonstration	Universal C2 Demonstration																											
FoCUS 1A Record Test	FoCUS 1A Record Test																											
Flat Panel Radar (FPR) HW/SW Design Updates & Producibil...					FPR HW/SW Design Updates & Producibility, Build & Integration																							
C-sUAS FY22 Summer Test	C-sUAS FY22 Summer Test																											
CDD P3I Program - Development & Prototyping					CDD P3I Program - Development & Prototyping																							
Single Vehicle Concept Verification Event (CVE)					C-sUAS CVE																							
C-sUAS FY23 Winter Test					C-sUAS FY23 Winter Test																							
Software Integration Facility (SWIF) Hardware Procuremen...									SWIF Hardware Procurement, Development & Integration																			
C-sUAS FY23 Summer Test									C-sUAS FY23 Summer Test																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev		Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
FPR Engineering Test #1																												
FoCUS 1B Record Test																												
FPR Environmental Test and Qualification																												
C-sUAS FY24 Winter Test																												
FPR Engineering Test #2																												
C-sUAS FY24 Summer Test																												
C-sUAS FY25 Winter Test																												
FPR Engineering Test #3																												
C-sUAS FY25 Summer Test																												
C-sUAS FY26 Winter Test																												
FPR Record Test																												
FPR Tech Manuals, Training Materials, and Safety Documen...																												
C-sUAS FY26 Summer Test																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev	Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
C-UAS Emerging Threat Development	1	2017	4	2028
Q-50A False Track Mitigation Development	1	2021	2	2022
Coyote Block 2 Enhanced Seeker Development	2	2021	4	2021
Mobile LIDS (M-LIDS) Inc 1 Testing and Downselect	1	2018	1	2018
Expeditionary LIDS (E-LIDS) Engineering and Record Test	2	2018	2	2018
M-LIDS Inc 1 Engineering and Record Test	3	2018	4	2018
LIDS System-of-Systems (SoS) Record Test	4	2018	1	2019
E-LIDS/M-LIDS Inc 1 Engineering Test	3	2019	3	2019
LIDS Advanced Position, Navigation & Timing (PNT) Test	4	2019	4	2019
Inc 2 SoS Record Test	1	2020	1	2020
FS-LIDS/M-LIDS Inc 2 Record Test	1	2020	2	2020
M-LIDS Inc 2 Delta Record Test #1	3	2020	3	2020
M-LIDS Inc 2 Delta Record Test #2	4	2020	4	2020
C-UAS FY20 Summer Test	4	2020	4	2020
C-UAS SoS Integration/Record Test (Winter FY21)	2	2021	2	2021
C-UAS SoS Integration/Record Test (Summer FY21)	4	2021	4	2021
FoCUS 1A Developmental Test	1	2022	1	2022
C-sUAS FY22 Winter Test	2	2022	2	2022
Universal C2 Demonstration	2	2022	2	2022
FoCUS 1A Record Test	2	2022	2	2022
Flat Panel Radar (FPR) HW/SW Design Updates & Producibility, Build & Integration	3	2022	3	2024
C-sUAS FY22 Summer Test	4	2022	4	2022

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604741A / Air Defense Command, Control and Intelligence - Eng Dev		Project (Number/Name) FG5 / Counter Unmanned Aerial Systems (UAS)	
	Start		End	
Events	Quarter	Year	Quarter	Year
CDD P3I Program - Development & Prototyping	1	2023	4	2028
Single Vehicle Concept Verification Event (CVE)	1	2023	1	2023
C-sUAS FY23 Winter Test	2	2023	2	2023
Software Integration Facility (SWIF) Hardware Procurement, Development, and Integration	3	2023	3	2024
C-sUAS FY23 Summer Test	4	2023	4	2023
FPR Engineering Test #1	4	2023	4	2023
FoCUS 1B Record Test	4	2023	4	2023
FPR Environmental Test and Qualification	4	2023	4	2024
C-sUAS FY24 Winter Test	2	2024	2	2024
FPR Engineering Test #2	2	2024	2	2024
C-sUAS FY24 Summer Test	4	2024	4	2024
C-sUAS FY25 Winter Test	2	2025	2	2025
FPR Engineering Test #3	2	2025	2	2025
C-sUAS FY25 Summer Test	4	2025	4	2025
C-sUAS FY26 Winter Test	2	2026	2	2026
FPR Record Test	2	2026	2	2026
FPR Tech Manuals, Training Materials, and Safety Documentation	2	2026	2	2027
C-sUAS FY26 Summer Test	4	2026	4	2026

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army	Date: March 2023
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Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	21.424	29.481	30.985	-	30.985	30.320	30.764	14.397	8.990	0.000	166.361
361: <i>Intelligence Simulation Systems</i>	-	5.323	6.934	7.873	-	7.873	7.897	7.863	8.150	8.751	0.000	52.791
362: <i>Jnt Land Component Constructive Trng</i>	-	16.101	22.547	23.112	-	23.112	22.423	22.901	6.247	0.239	0.000	113.570

A. Mission Description and Budget Item Justification

This Program Element funds the development of constructive and wargame simulations used to realistically train commanders and their battle staffs on today's complex battlefield conditions.

Project 361, Intelligence Simulation Systems, funds the development of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT). IEWTPT is a Non-System Training Device (NSTD) which supports home-station training by simulating and stimulating Military Intelligence (MI) organic or surrogate equipment. It enables sustainment of critical individual and collective MI tasks/skills and is the core of the U.S. Army Intelligence Center of Excellence (USAICoE) Military Intelligence (MI) holistic training strategy supporting mission command, targeting, and MI Soldier readiness. IEWTPT provides a realistic simulation intelligence target environment for multi-intelligence disciplines such as All Source Analysis, Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), Human Intelligence (HUMINT), Geospatial Intelligence (GEOINT) and emerging electronic warfare (EW) systems. IEWTPT provides training for analyst and system operators to exploit intelligence data during training, just as they would in "Real World" operations. The IEWTPT Technical Control Cell (TCC) is composed of two components: the Lower Enclave (LE) which supports exercise planning and development and drives the All Source and GEOINT (and emerging EW) training tasks and the Upper Enclave (UE) which supports all SIGINT related training and operates at the Top Secret / Sensitive Compartmented Information (TS/SCI) classification level.

Project 362, Joint Land Component Constructive Training Capability (JLCCTC) supports Army Title X training worldwide for Army Commanders and their staff at Mission Training Complexes (MTCs), Training and Doctrine Command (TRADOC) facilities, and other customer locations. JLCCTC trains Commanders and their staff in Decisive Actions to include offensive, defensive, stability, and civil support operations. JLCCTC is a software modeling and simulation capability that contributes to Army Training Mission Area by providing appropriate levels of modeling and simulation resolution and fidelity to support unit collective and combined arms training. JLCCTC provides a composable federation configurable to any combination of models and simulations, as required by training exercise intent/design. JLCCTC provides accurate representations of tactically and operationally relevant land warfare operations executed in a contemporary Joint operating environment/context and in support of Army Training and Readiness.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)		PE 0604742A I Constructive Simulation Systems Development			
B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	22.240	29.570	30.848	-	30.848
Current President's Budget	21.424	29.481	30.985	-	30.985
Total Adjustments	-0.816	-0.089	0.137	-	0.137
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.816	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	-	-	0.137	-	0.137
• FFRDC Transfer	-	-0.089	-	-	-
Change Summary Explanation					
Increased funding due to revised economic assumptions.					

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development				Project (Number/Name) 361 / Intelligence Simulation Systems			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
361: Intelligence Simulation Systems	-	5.323	6.934	7.873	-	7.873	7.897	7.863	8.150	8.751	0.000	52.791
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 361 funds the development, integration and testing of the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT). IEWTPT is a Non-System Training Device (NSTD) which supports home-station training by simulating and stimulating Military Intelligence (MI) and Electronic Warfare (EW) organic or surrogate equipment. It enables training of critical individual, crew and collective MI tasks/skills and is the core of the U.S. Army Intelligence Center of Excellence (USAICoE) Military Intelligence (MI) holistic training strategy supporting mission command, targeting, and MI/EW Soldier readiness. IEWTPT provides a realistic simulation intelligence target environment for multi-intelligence disciplines such as All Source Analysis, Signals Intelligence (SIGINT), Imagery Intelligence (IMINT), Human Intelligence (HUMINT), Geospatial Intelligence (GEOINT) and emerging EW. IEWTPT provides training for analyst and system operators to exploit intelligence data during training, just as they would in "Real World" operations. The IEWTPT Technical Control Cell (TCC) is composed of two components: the Lower Enclave (LE) which supports exercise planning and development and drives the All Source and GEOINT (and emerging EW) training tasks and the Upper Enclave (UE) which supports all SIGINT related training and operates at the Top Secret / Sensitive Compartmented Information (TS/SCI) classification level.

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

	FY 2022	FY 2023	FY 2024
Title: Software Engineering, Development, Integration and Testing	5.323	6.699	7.873
FY 2023 Plans: Supports validated requirements for multi-intelligence discipline and electronic warfare individual, crew, and collective training for military intelligence unit certification and Soldier readiness. The Information Systems-Capability Development Document (IS-CDD) sets the conditions for program execution as a software intensive system facilitating rapid and iterative delivery of intelligence training capabilities. Supports priorities of work established by the General Officer led Requirements and Configuration Control Board (RC2B) for development, engineering, integration, and testing. Supports intelligence modernization training development for emerging systems such as the Terrestrial Layer System (TLS) for integrated Signals Intelligence Electronic Warfare (SIGINT/ EW) home-station training. Funding supports training mission analysis and development for the Tactical Intelligence Targeting Access Node (TITAN) multi-domain ground station. Supports cloud ready baseline architecture development for point of need intelligence critical task training and constructive simulation interface. Improves All Source intelligence messaging development and Electronic Warfare Program Management Tool (EWPMT) integration into the Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT) in support of multi-domain capable training requirements. Expands SIGINT scenario development tools for cloud employment, sensor emulation effects, threat systems modeling, and Theater/National level intelligence replication for the simulation/user environment. Will execute development and integration supporting product deliverables needed to meet Intelligence Center of Excellence (ICoE) and Army G2 training and modernization strategies. IEWTPT simulation and stimulation			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>	Project (Number/Name) 361 / <i>Intelligence Simulation Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
capabilities will support integration of test and training systems for Multi Domain Operation (MDO) events and the Regionally Aligned Readiness and Modernization Model (ReARMM).			
FY 2024 Plans: IEWTPT will continue to support Information Systems-Capabilities Development Document (IS-CDD) requirements and simulation interface capabilities for Intelligence, Surveillance, Reconnaissance (ISR) platform system in the PEO Intelligence Electronic Warfare & Sensors (PEO IEW & S) portfolio to support home-station intelligence training for multi-domain operations (MDO). Funding will develop and advance the Army Military Intelligence (MI) cloud-ready baseline for point of need training execution across all components (Active, Guard, Reserve). Funding will improve multi-intelligence and Electronic Warfare (EW) scenario development tools for cloud employment; mature sensor emulation effects; enhance threat modeling capabilities and replicate theater and national level intelligence. The program will deliver multi-intelligence training improvements to the distributed/federated constructive simulation environment, expand the All Source and Signals Intelligence (SIGINT) baselines, and continued detailed electronic warfare key critical task analysis and training development. Funding will expand EW/SIGINT integration to reduce risk for the Terrestrial Layer System (TLS) training strategy and support training mission analysis and development for the Tactical Intelligence Targeting Access Node (TITAN) multi-domain ground station. Expands SIGINT scenario development tools for cloud employment; sensor emulation effects modeling as well as theater and National level intelligence replication for the simulation/user environment. Will execute technology development and integration supporting product deliverables needed to meet Intelligence Center of Excellence (ICoE) and Army G2 training and modernization strategies. IEWTPT simulation and simulation capabilities will support integration of test and training systems for MDO events and the Regionally Aligned Readiness and Modernization Model (ReARMM).			
FY 2023 to FY 2024 Increase/Decrease Statement: FY2023 to FY2024 funding increase provides the software development environment, processes, automated tools, designs, architectures to rapidly deliver multi-intelligence and EW training software and accounts for minor increase due to economic assumptions.			
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638		-	0.235
Accomplishments/Planned Programs Subtotals		5.323	7.873

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development	Project (Number/Name) 361 / Intelligence Simulation Systems
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy The program will leverage the Software Acquisition Pathway (SWP) Execution Phase to release Minimum Viable Products (MVPs) and Minimum Viable Capability Releases (MVCR), at least annually, in support of intelligence modernization priorities. The IEWTPT Increment 2 contract will provide multi-intelligence and electronic warfare training support to the intelligence warfighting function. Funds support development, integration and testing in an agile acquisition environment using active user engagements, value assessments and continuous improvement to meet the Information Systems-Capability Development Document (IS-CDD), Military Intelligence Corps requirements and the Requirements and Configuration Control Board (RC2B) General Officer Steering Committee (GOSC) priorities. FY2024 funding supports home-station training, Military Intelligence/Electronic Warfare Soldier readiness and ensures alignment with Army and Military Intelligence modernization priorities.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development						Project (Number/Name) 361 / Intelligence Simulation Systems			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	Various : Various	-	-		0.253		-		-		-	0.000	0.253	-
Subtotal			-	-		0.253		-		-		-	0.000	0.253	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment 2 Software Eng, Development, Integration and Test Dev Sec Ops Tools/Agile Ready Architect.	C/CPFF	TBD : Orlando, FL	-	5.323	Feb 2022	4.470	Feb 2023	7.873	Feb 2024	-		7.873	Continuing	Continuing	Continuing
Tools/Agile	C/CPFF	TBD : Orlando, Florida	-	-		2.211	May 2023	-		-		-	0.000	2.211	-
Subtotal			-	5.323		6.681		7.873		-		7.873	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	5.323		6.934		7.873		-		7.873	Continuing	Continuing	N/A
Remarks 3QTR FY 2023 marks the closeout of the Increment 1 Bridge contract period of performance and the transition to the Increment 2 contract and Execution Phase of the software acquisition pathway. The IEWTPT Increment 2 contract is actively proceeding as a full and open competitive acquisition.															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development		Project (Number/Name) 361 / Intelligence Simulation Systems	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Increment 1 Bridge																												
Increment 2 Contract Award																												
Min. Viable Capability Release 2																												
Min. Viable Capability Release 3																												
Min. Viable Capability Release 4																												
Min. Viable Capability Release 5																												
Min. Viable Capability Release 6																												
																												
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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development	Project (Number/Name) 361 / Intelligence Simulation Systems	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 1 Bridge	2	2022	2	2022
Increment 2 Contract Award	2	2023	2	2028
Min. Viable Capability Release 2	4	2024	4	2024
Min. Viable Capability Release 3	4	2025	4	2025
Min. Viable Capability Release 4	4	2026	4	2026
Min. Viable Capability Release 5	4	2027	4	2027
Min. Viable Capability Release 6	4	2028	4	2028
Min. Viable Capability Release 7	4	2029	4	2029

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development				Project (Number/Name) 362 / Jnt Land Component Constructive Trng			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
362: Jnt Land Component Constructive Trng	-	16.101	22.547	23.112	-	23.112	22.423	22.901	6.247	0.239	0.000	113.570
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

FY 2024 base funding in the amount of \$23.112 million will be used for the development, integration and test, and verification activities for JLCCTC Version 9.x to train Commanders and their Staff. JLCCTC will continue to support emerging Common Operating Environment / Computing Environment (COE/CE), Mission Command (MC), Cyber Security/Risk Management Framework (RMF), Concurrency warfighter requirements, Synthetic Environment (SE) Core No Fail activities, and One World Terrain (OWT) Data to JLCCTC Runtime Translation Tool development. In addition, JLCCTC will continue to support the integration activities with Live, Virtual, Constructive-Integrated Architecture (LVC-IA), Combat Training Center Instrumentation System (CTC- IS), Intelligence Electronic Warfare Tactical Proficiency Trainer (IEWTPT), and to begin interfacing the Army ground model with the Joint simulation capability.

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

	FY 2022	FY 2023	FY 2024
Title: Improve JLCCTC software models to comply with emerging Common Operating Environment (COE)/Computing Environment (CE) requirements.	0.650	0.650	0.650
Description: Improve JLCCTC software models to comply with emerging COE/CE requirements.			
FY 2023 Plans: Will continue improvements of JLCCTC software models to include common overlay development/modifications in support of COE compliance/standards.			
FY 2024 Plans: Will continue improvements of JLCCTC software models to include common overlay development/modifications in support of COE compliance/standards.			
Title: Improve JLCCTC software models to meet emerging Mission Command (MC) stimulation and Cyber Security requirements.	0.800	0.800	0.800

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>	Project (Number/Name) 362 / <i>Jnt Land Component Constructive Trng</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Description: Improve JLCCTC software models to meet emerging Mission Command (MC) stimulation and Risk Management Framework (RMF)/Cyber Security requirements. FY 2023 Plans: Continue to evolve JLCCTC to support emerging Mission Command requirements and fully comply with the Cyber Security/Risk Management Framework (RMF) requirement. FY 2024 Plans: Continue to evolve JLCCTC to support emerging Mission Command requirements and fully comply with the Cyber Security RMF requirement.			
Title: Improve JLCCTC software models to meet emerging warfighter requirements for Concurrency of Commander and staff training (Battalion thru Theater Level). Description: Improve JLCCTC software models to meet emerging warfighter requirements for Concurrency of Commander and staff training (Brigade through Theater Level). FY 2023 Plans: Continue to evolve JLCCTC software models to support additional emerging requirements in support of Commander and staff warfighter training exercises through Theater level FY 2024 Plans: Continue to evolve JLCCTC software models to support additional emerging requirements in support of Commander and staff warfighter training exercises through Theater level FY 2023 to FY 2024 Increase/Decrease Statement: Minimal increase from FY 2023 to FY 2024 for Recovery of Concurrency Warfighter Requirements.		1.707	6.161
Title: Government System Test and Evaluation for the Joint Land Component Constructive Training Capability (JLCCTC) Program. Description: Government System Test and Evaluation for the Joint Land Component Constructive Training Capability (JLCCTC). FY 2023 Plans: Continue conducting system test events (Integration and Testing) in support of the JLCCTC v10.0 validation event (VE). FY 2024 Plans:		1.701	1.750

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023		
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development	Project (Number/Name) 362 / Jnt Land Component Constructive Trng		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023	FY 2024
Continue conducting system test events (Integration and Testing) in support of the JLCCTC v9.x validation event (VE).				
FY 2023 to FY 2024 Increase/Decrease Statement: Minimal increase from FY 2023 to FY 2024 due to continuing integration and testing in support of JLCCTC v9.x validation events.				
Title: Conduct Army Ground Model Analysis of Alternative FY 2023 Plans: Continue development to interface the Army ground model with the Joint simulation capability. FY 2024 Plans: Continue development to interface the Army ground model with the Joint simulation capability. FY 2023 to FY 2024 Increase/Decrease Statement: Minimal increase from FY 2023 to FY 2024 for continuing development to interface the Army ground model with the Joint simulation capability.		6.306	6.837	7.760
Title: Constructive Terrain and Tools Development FY 2023 Plans: Continue execution of the SE Core No Fail Activities and development of tools to transform One World Terrain (OWT) data into JLCCTC compliant runtime formats. FY 2024 Plans: Continue execution of the SE Core No Fail Activities and development of tools to transform OWT data into JLCCTC compliant runtime formats. FY 2023 to FY 2024 Increase/Decrease Statement: Minimal increase in funding from FY 2023 to FY 2024 to continue development of tools to transform OWT data into JLCCTC compliant runtime formats.		4.937	5.526	5.626
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638 FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638		-	0.823	-
Accomplishments/Planned Programs Subtotals		16.101	22.547	23.112

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023	
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604742A / <i>Constructive Simulation Systems Development</i>				Project (Number/Name) 362 / <i>Jnt Land Component Constructive Trng</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• NA0103: <i>NSTD</i> <i>COMMAND & CONTROL</i>	37.147	35.470	33.047	-	33.047	32.279	32.717	33.064	35.160	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
The JLCCTC contract (with Base contract of 4 years and two-three year options) was awarded to Phoenix Logistics Inc. (PLI) on 17 March 2020.											
Activities under the current contract and follow-on contracts include System Engineering, Software Development, Integration and Test, support to validation events and Post Deployment Software Support (PDSS) and Pre-Planned Product Improvements (P3I) support.											
JLCCTC produces a major software release/version which is then distributed/fielded to 46 sites worldwide in support of Army Command and Staff Training.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army													Date: March 2023		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development				Project (Number/Name) 362 / Jnt Land Component Constructive Trng					
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	PEO STRI : Orlando, FL	0.843	-		0.823		-		-		-	0.000	1.666	-
Subtotal			0.843	-		0.823		-		-		-	0.000	1.666	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Improve JLCCTC to meet emerging warfighter requirements.	C/CPFF	Phoenix Logistics, Inc. : Orlando, FL	14.252	1.707	Dec 2021	6.161	Dec 2022	6.428	Dec 2023	-		6.428	Continuing	Continuing	Continuing
MC Systems Stimulation and Cyber Security	C/CPFF	Phoenix Logistics, Inc. : Orlando, FL	9.132	0.800	Dec 2021	0.800	Dec 2022	0.800	Dec 2023	-		0.800	Continuing	Continuing	Continuing
COE Compliance	C/CPFF	Phoenix Logistics, Inc. : Orlando, FL	6.390	0.650	Dec 2021	0.650	Dec 2022	0.650	Dec 2023	-		0.650	Continuing	Continuing	Continuing
Conduct Army ground Model AoA	C/CPFF	Phoenix Logistics, Inc. : Orlando, FL	1.894	6.306	Dec 2021	6.837	Dec 2022	7.760	Dec 2023	-		7.760	Continuing	Continuing	Continuing
Constructive Terrain and Tools Development	C/CPFF	Phoenix Logistics, Inc. : Orlando, FL	-	4.937	Dec 2021	5.526	Dec 2022	5.626	Dec 2023	-		5.626	Continuing	Continuing	Continuing
Subtotal			31.668	14.400		19.974		21.264		-		21.264	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System T&E (I&T, VE, ORE)	Various	Various : Various	28.241	1.701	Dec 2021	1.750	Dec 2022	1.848	Dec 2023	-		1.848	Continuing	Continuing	Continuing
Subtotal			28.241	1.701		1.750		1.848		-		1.848	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army											Date: March 2023			
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development					Project (Number/Name) 362 / Jnt Land Component Constructive Trng				
		Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		60.752	16.101		22.547		23.112		-		23.112	Continuing	Continuing	N/A

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army			Date: March 2023		
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development		Project (Number/Name) 362 I Jnt Land Component Constructive Trng	

Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
JLCCTC Version 9.0 System Engr / Develop / I&T / Validation																												
JLCCTC Version 9.0 Release																												
JLCCTC Version 9.x System Engr / Develop / I&T / Validation																												
JLCCTC Version 9.x Release																												
JLCCTC Integration into LVC-IA / CTC-IS																												
JLCCTC Version 9.x 2027 Sys Engr/ Develop/ I&T/ Validation																												
JLCCTC Version 9.x 2027 Release																												
JLCCTC Transition to Sustainment																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604742A / Constructive Simulation Systems Development	Project (Number/Name) 362 / Jnt Land Component Constructive Trng	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JLCCTC Version 9.0 System Engr / Develop / I&T / Validation	1	2018	3	2023
JLCCTC Version 9.0 Release	3	2023	3	2023
JLCCTC Version 9.x System Engr / Develop / I&T / Validation	3	2023	3	2024
JLCCTC Version 9.x Release	4	2024	4	2024
JLCCTC Integration into LVC-IA / CTC-IS	1	2014	3	2027
JLCCTC Version 9.x 2027 Sys Engr/ Develop/ I&T/ Validation	3	2024	3	2027
JLCCTC Version 9.x 2027 Release	3	2027	3	2027
JLCCTC Transition to Sustainment	1	2028	1	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604746A / <i>Automatic Test Equipment Development</i>							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	8.486	5.178	13.626	-	13.626	8.226	4.631	4.680	4.731	Continuing	Continuing
L59: <i>Diagnost/Expert Sys</i>	-	5.371	1.150	6.859	-	6.859	1.174	1.198	1.211	1.224	0.000	18.187
L65: <i>Test Equipment Development</i>	-	3.115	4.028	6.767	-	6.767	7.052	3.433	3.469	3.507	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) provides for development and testing of automatic test equipment, precision calibration instruments, general-purpose test equipment, state-of-the-art diagnostics and prognostics technologies, and software and systems to support the increasingly complex electronic components of the Army's new and upgraded weapon systems focused on joint operations in a sophisticated multi-domain area of operation. It focuses on standardization and implementation of commercial test and diagnostic technologies across multiple weapon platforms to minimize the cost of troubleshooting and maintenance of Army equipment in the field. Funding supports modernization of the test equipment fleets by investigating technology insertions including, but not limited to, predictive and prognostic maintenance, instrument reduction/miniaturization, electro-mechanical, electro-optics (EO), radio frequency (RF), physical, radiological, chemical, and biological warfare sensor calibration support capabilities, and other emerging technologies. Funding also supports development of initial prototypes to enable refinement of Operational Requirements documented by Combatant Commands (COCOM), Program Executive Offices (PEO), Army Futures Command (AFC), Army Staff, US Army Training and Doctrine Command (TRADOC), and early user feedback to support future sustainment and testing capabilities required for emerging weapons platforms. This PE provides for continued development and improvement of general-purpose test equipment and calibration standards with emphasis on the incorporation of digital electronics and tailoring of configurations to improve deployability, mobility and survivability of the support equipment. It includes development, demonstration and testing of calibration standards and techniques to support new Army test equipment requirements; and, it provides for feasibility studies, market research, inventory analyses, bid sample testing and prototyping to support acquisition of calibration systems and general-purpose test and diagnostics equipment.

The Department of Defense (DoD) has designated the Integrated Family of Test Equipment (IFTE), comprised of the Maintenance Support Device (MSD) and the Next Generation Automatic Test System (NGATS), as the authorized Army standard for field and sustainment maintenance. The MSD provides at-system automatic test and diagnostic support and the NGATS consolidates off-system automatic test and diagnostic equipment requirements. The IFTE systems being developed under this PE provide electronic fault isolation, diagnostic and repair capabilities at all levels of maintenance and do it more cost effectively than system-specific testers. They provide state-of-the-art test and diagnostic capabilities, reducing costs and logistics footprints while providing the Warfighter fix-forward capability for current and future weapon systems in multi-domain operations. The systems are designed to support the Cross-Functional Teams (CFT) in the Army Futures Command (AFC) as they mature in accordance with the DoD Automatic Test Systems strategy. The MSD is employed by more than thirty military occupational specialties to perform field level maintenance on approximately 50 weapon systems, including Abrams, Bradley, Stryker, aviation platforms, missile systems, and the Army's wheeled vehicle fleet.

FY 2024 base funding for this PE provides for market research, testing and evaluation of Intermittent Fault Detection (IFD) testers, including development of test programs, to interface with various Army platforms to reduce No Evidence of Failure (NEOF) conditions at the platform, which, according to the DoD, accounts for up to 50 percent of electronic maintenance across the DoD. This methodology will aid in the identification of intermittent faults in difficult to troubleshoot platforms, mitigate

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023		
Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				
NEOF to reduce unit costs of unnecessary line replaceable unit (LRU) requisitions, and improve unit operational readiness in support of multi-domain operations, large-scale combat operations and the Indo-Pacific Command. FY 2024 base funding continues incremental development of the Army's standard At-Platform Automatic Test System, MSD, which will enhance testing and diagnostic capability required by supported weapon systems. Funding supports tactical vehicle sustainment concepts, evaluates evolving weapon system diagnostic testing requirements, incorporates additional organic diagnostic software capabilities to troubleshoot weapon systems, and ensures data bus compatibility and readability with commercial technology. It evaluates and incorporates cyber security enhancements into at-platform diagnostic hardware and software. Funding also provides for market research, feasibility assessment, and interaction with supported weapon systems to determine most effective methodology for diagnostic software to incorporate emerging At-Platform Predictive Logistics requirements. The FY 2024 funding will develop or significantly modify test equipment to satisfy modular force and homeland security support requirements that cannot be accommodated with test equipment currently available in the commercial marketplace such as RF and EO testing capability. It will also develop and test general-purpose test equipment and calibration standards to meet Army weapon system support requirements, and initiate development of enhanced diagnostic software and interfaces to support emerging maintenance concepts for Long Range Precision Fires, Next Generation Combat Vehicle, Future Vertical Lift, and Air and Missile Defense. The funding will provide prototype test and evaluation of field level calibration and repair support for the Radiation Detection System (RDS) in response to Operational Needs Statement ONS 17-22580. The project resolves significant radiation measurement accuracy gaps throughout the Department of the Army operational areas and CONUS, and it provides for analysis of courses of action to incorporate additional intrinsic calibration instruments and general-purpose test equipment to reduce the maintenance hierarchy, increase calibration intervals, extend lifecycle reliability, and increase supportability across generational changes in weapon systems and weapon support systems technology.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		8.807	5.178	4.395	-	4.395
Current President's Budget		8.486	5.178	13.626	-	13.626
Total Adjustments		-0.321	0.000	9.231	-	9.231
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.321	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	9.231	-	9.231
Change Summary Explanation						
Increase in FY 2024 for the development of the Test Equipment Modernization (TEMOD) Application Program Sets (APS) associated with the TS-4549 Radio Test Sets and for market research, testing and evaluation of Intermittent Fault Detection (IFD) testers.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L59 / Diagnost/Expert Sys			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L59: Diagnost/Expert Sys	-	5.371	1.150	6.859	-	6.859	1.174	1.198	1.211	1.224	0.000	18.187
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This Project funds development of system enhancements for the Maintenance Support Device (MSD). The MSD is a general-purpose automatic test system (ATS) that provides test and diagnostic capabilities required to support current and future weapons and combat support systems across the Cross-Functional Teams (CFTs) in the Army Futures Command (AFC) and will facilitate retirement of aging, obsolete and non-cyber secure test equipment that imposes increasing logistics and operations and support cost burdens. The MSD is the Army's standard at-system tester and requires continuing technology insertions to support modernization of the supported weapon systems. This Project funds development efforts to insert the most current relevant technology into the next generation MSD, supports capability enhancement of at-platform test adapters, develops and standardizes capabilities to minimize or eliminate Army dependence on expensive proprietary software to support tactical vehicles, and maintains compatibility with emerging platform hardware bus technology and software interface requirements. The Department of Defense has identified the need for Intermittent Fault Detection (IFD) testers to aid in the identification of intermittent faults in difficult to troubleshoot platforms, mitigate No Evidence of Failures (NEOF) to reduce unit costs of unnecessary line replaceable unit (LRU) requisitions, and improve unit operational readiness in support of multi-domain operations, large-scale combat operations and the Indo-Pacific Command which will be funded in part by this Project. The test and diagnostic systems and procedures developed under this Project are essential for ensuring the operational readiness, accuracy and effectiveness of the Army's warfighting systems.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2022	FY 2023	FY 2024	
Title: NGATS Increment 2									0.297	-	-	
Description: Develop and test hardware and software for NGATS Increment 2 support capability												
Title: NGATS Performance Enhancement									0.500	-	-	
Description: NGATS core instrument/software modifications to increase NGATS performance												
Title: Abrams/Bradley Test Program Set (TPS) Design									2.612	-	-	
Description: Design, test and evaluate Abrams/Bradley TPSs to utilize modern core NGATS instrumentation vice continuing to execute on single-purpose instrumentation specifically developed to emulate Abrams/Bradley legacy test equipment (i.e., Direct Support Electrical System Test Set (DSESTS))												
Title: NGATS Logistics Support Products									0.500	-	-	
Description: Develop NGATS initial logistics support products (including provisioning, technical manuals and calibration)												
Title: Maintenance Support Device (MSD) Technology Enhancements									0.962	1.108	1.179	

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development	Project (Number/Name) L59 / Diagnost/Expert Sys	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>Description: Modernizes the current MSD fleet by investigating and incorporating relevant technology into the next-generation MSD and supporting capability enhancement of the Wireless At-platform Test Set (WATS). Develops diagnostic capabilities to minimize or eliminate Army dependency on proprietary software to support tactical vehicles and maintain compatibility with emerging platform hardware bus technology and software interface requirements. Provides a data processing capability to enable Predictive Logistics on weapon systems.</p> <p>FY 2023 Plans: Continue market research for the Next Generation At-Platform Test System (Maintenance Support Device). Continue to incorporate greater range of supported weapon systems diagnostic code fault detection into diagnostic software to minimize dependency on proprietary/non-cyber compliant software. Continue to evaluate and incorporate cyber security enhancements into at-platform diagnostic hardware and software. Continue market research, feasibility assessment, and interaction with supported weapon systems to determine most effective methodology to incorporate emerging Predictive Logistics capabilities.</p> <p>FY 2024 Plans: Evaluate market research findings for the Next Generation At-Platform Test System (Maintenance Support Device). Continue to incorporate greater range of supported weapons system diagnostic code fault detection into diagnostic software to minimize dependency on proprietary software, support tactical vehicle maintenance concepts, evaluate evolving weapon system diagnostic testing concepts and ensure data bus compatibility and readability. Continue to evaluate and incorporate cyber security enhancements into diagnostic software. Continue market research, feasibility assessment, and interaction with supported weapon systems to determine most effective methodology for diagnostic software, data collection, and data display to incorporate emerging Predictive Logistics requirements.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Minor increase due to program adjustment and economic assumptions for FY 2024.</p>			
<p>Title: TPS Development Environment</p> <p>Description: Develop a standardized TPS development environment for NGATS</p>		0.500	-
<p>Title: Intermittent Electronic Fault Detection</p> <p>Description: Test and integration of commercial off the shelf (COTS) (or modified COTS) Intermittent Fault Detection (IFD) solutions and prototypes for evaluation. IFD Test Program Set (TPS) development to adapt and work with various Army platforms.</p> <p>FY 2024 Plans:</p>		-	5.680

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L59 / Diagnost/Expert Sys				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2022	FY 2023	FY 2024
Test and integrate COTS (or modified COTS) IFD solutions and prototypes for evaluation and develop IFD TPSs to adapt and work with various Army platforms. FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY2024 to initiate Intermittent Fault Detection (IFD) developmental efforts.												
Title: SBIR/STTR Transfer FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638. FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638.										-	0.042	-
Accomplishments/Planned Programs Subtotals										5.371	1.150	6.859
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost	
• MB4000: Integrated Family Of Test Equipment (IFTE)	43.046	36.514	36.149	-	36.149	23.236	12.004	12.011	11.996	0.000	174.956	
Remarks												
D. Acquisition Strategy												
This developmental Project consists of organic and contractual actions. When the necessary expertise and capability are available within the Department of Defense, services required for the individual development projects are ordered from the government source via support agreements; otherwise, commercial contracts are used. Equipment required for developmental projects is obtained by contract from the commercial supplier.												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army													Date: March 2023		
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development					Project (Number/Name) L59 / Diagnost/Expert Sys				
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FY2023 SBIR/STTR Transfer	Various	Various : Various	-	-		0.042	Mar 2023	-		-		-	0.000	0.042	-
Subtotal			-	-		0.042		-		-		-	0.000	0.042	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development/ Verification/Validation	Various	Various, : Various	46.424	2.568	Apr 2022	0.619	Jan 2023	3.355	Jan 2024	-		3.355	0.000	52.966	-
Hardware/Support Items Development	Various	Various, : Various	77.130	2.253	Apr 2022	0.324	Jan 2023	3.055	Jan 2024	-		3.055	0.000	82.762	-
Subtotal			123.554	4.821		0.943		6.410		-		6.410	0.000	135.728	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Support	Various	Various, : Various	52.163	0.450	Apr 2022	0.115	Dec 2022	0.350	Jan 2024	-		0.350	0.000	53.078	-
Other Direct	Various	Various, : Various	6.328	0.100	Apr 2022	0.050	Dec 2022	0.099	Jan 2024	-		0.099	0.000	6.577	-
Subtotal			58.491	0.550		0.165		0.449		-		0.449	0.000	59.655	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			182.045	5.371		1.150		6.859		-		6.859	0.000	195.425	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army												Date: March 2023																
Appropriation/Budget Activity 2040 / 5								R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development								Project (Number/Name) L59 / Diagnost/Expert Sys												
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028			
	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
NGATS Full-Rate Production (Increment 1)																												
NGATS Testing (Increment 2)																												
NGATS RF Integration																												
NGATS Testing (EO & RF Subsystems)																												
NGATS Product Improvements - Netcentric																												
New Systems Test Capability																												
MSD Technology Enhancements																												
Intermittent Fault Detection Project																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development	Project (Number/Name) L59 / Diagnost/Expert Sys	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NGATS Testing (Increment 1)	1	2011	1	2012
Production for First Article	1	2015	2	2017
Training Materiel Release	4	2019	4	2019
Full Materiel Release	1	2021	1	2021
First Unit Equipped	1	2021	1	2021
Full Rate Production Decision Review	3	2021	3	2021
NGATS Testing (Increment 1 Follow-On DT/OT)	1	2016	3	2016
NGATS Full-Rate Production (Increment 1)	2	2019	4	2023
NGATS System Development and Demonstration (SDD) (Increment 2)	1	2016	4	2020
NGATS Testing (Increment 2)	1	2016	4	2023
FOT&E Completed (DT)	3	2018	3	2018
NGATS Development (EO Subsystem)	4	2010	4	2015
NGATS Development (RF Subsystem)	1	2016	4	2021
NGATS EO Integration	3	2016	4	2021
NGATS RF Integration	3	2017	1	2022
NGATS Testing (EO & RF Subsystems)	1	2016	2	2022
NGATS Product Improvements - Netcentric	1	2016	4	2023
New Systems Test Capability	1	2016	4	2023
MSD Technology Enhancements	1	2016	4	2028
Intermittent Fault Detection Project	1	2024	1	2025

Note

Test program set (TPS) compatibility testing runs continually throughout the product development process.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
Appropriation/Budget Activity 2040 / 5					R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L65 / Test Equipment Development			
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
L65: Test Equipment Development	-	3.115	4.028	6.767	-	6.767	7.052	3.433	3.469	3.507	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project supports Program Executive Office (PEO) and Army Futures Command (AFC) system support requirements with modernization of calibration instruments, techniques, and existing Army calibration systems by investigating technology insertions including automated and autonomous operations and other emerging technologies. Funding also supports development of initial prototypes to enable refinement of Operational Requirements and early user feedback to support future calibration systems and general-purpose test, measurement, and diagnostic equipment (TMDE) acquisitions. This Project develops calibration software and calibration capability for electro-optical, chemical, biological agent, radiation sourcing and detection systems, signal measurement from direct current to microwave ranges, physical and mechanical measurements such as torque, pressure, and temperature, and improvements in test and measurement performance envelopes. It provides for product improvements and development/evaluation of advanced technologies to increase reliability of calibration systems and general-purpose TMDE. The product improvements eliminate gaps in existing organic capabilities and ensure operational readiness and safety of Army weapons and combat support systems. These improvements employ reconfigurable open-electronics architecture and computer-based instrumentation where feasible and focus on reduced test equipment footprints to improve deployability and mobility in complex multi-domain areas of operation.

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

	FY 2022	FY 2023	FY 2024
Title: Calibration Sets (CALSETS) Software Environment and Calibration Procedures	0.725	0.600	0.367
Description: Continue development and testing of Army automated calibration environment (ACE) and develop calibration procedures. Develop and test an enterprise data system to capture management and test data for reporting, metrics, and dashboard to inform management and leader decisions in acquisition and operations. Test and evaluate automated calibration equipment software efforts in support of the Army risk management framework (RMF).			
FY 2023 Plans: Develop automated support capability in the Army automated calibration environment (ACE) for a wider range of Army test, measurement and diagnostic equipment (TMDE). Develop ACE features to support enhanced data sharing capabilities.			
FY 2024 Plans: Develop and test an enterprise data system that will integrate with ACE to capture management and test data for reporting metrics to inform management and leader decisions in acquisition and operations.			
FY 2023 to FY 2024 Increase/Decrease Statement:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / <i>Automatic Test Equipment Development</i>	Project (Number/Name) L65 / <i>Test Equipment Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Funding decreased from FY 2023 to accommodate requirements in FY 2024 for higher-priority projects.			FY 2024
Title: Physical Instruments Description: Research, develop, and test physical parameter calibration instrumentation to support areas such as intrinsic high reliability physical and dimensional standards. Modernize force and torque calibration capability. Develop radiological, chemical and biological agent detection systems, small arms gage calibration, pneumatic pressure systems, and temperature radiometer calibration related to target detection in the infrared spectrum. FY 2023 Plans: Complete development of measurement standards for vapor contamination in support of chemical warfare agent (CWA) detector JCAD, as well as begin Bio-Sensor Calibrator research to provide an alternative solution in support of biological warfare agent (BWA) detector JBPDS. Complete NIST on a chip (NOAC) mass measurement project to modernize Army mass support system. Initiate development of torque multiplier calibration capability on the torque calibration system (TCS) in support of aviation maintenance equipment. FY 2024 Plans: Complete follow-up research and testing on the Bio-Sensor Calibrator to develop Photolithography on Silicon Wafer technology for organic calibration support of the BWA detector JBPDS. Develop a field deployable calibration suite to support calibration of high volume small arms and ammunition gages (SAAG) in theatre. FY 2023 to FY 2024 Increase/Decrease Statement: Minor adjustment in FY2024 funding.		1.265	0.944
Title: Electrical Instruments Description: Research, develop, and test electrical parameter calibration instrumentation to support modernization and replacement of aged and obsolete test instruments in areas such as intrinsic electrical standards, electrical transport standards and electro-optic standards. Develop calibration support for advanced capability in spectral and vector dense signal analysis in complex Multi-Domain areas of operation. FY 2023 Plans: Complete testing of Army-wide alternating current/direct current (AC/DC) voltage measurement modernization project. Complete replacement and testing of microwave power sensor calibration to national standards meeting Army Futures Command support requirements for Multi-Domain secured signal send and receive capability with integrated antenna functionality. Develop		0.730	2.025
			1.497

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604746A / <i>Automatic Test Equipment Development</i>	Project (Number/Name) L65 / <i>Test Equipment Development</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
Quantum Hall Resistance (QHR) system to reduce recurring operational costs and improve mission readiness in support of Army's sustainment and traceability for all electrical resistance measurement systems.			
FY 2024 Plans: Continue development and testing of Army-wide alternating current voltage measurement modernization project. Continue development and testing of microwave power sensor calibration system, meeting Army Futures Command support requirements for Multi-Domain secured signal send and receive capability with integrated antenna functionality. Continue development and testing of the Army's s.primary traceable fiber-optic calibration station to support all army optical time-domain reflectometer test equipment.			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding decreased from FY 2023 to FY 2024 due to decreased requirements for electrical instruments.			
Title: Test Equipment Modernization (TEMOD)		0.395	0.312
Description: Perform market research, bid sample testing and evaluation of commercial general-purpose electronic test equipment (GPETE), and develop performance specifications for TEMOD acquisitions.			4.000
FY 2023 Plans: Perform market research and evaluation of commercial GPETE and validate performance specifications for improved test equipment. Conduct bid sample testing to support acquisition program. The GPETE will support numerous Army weapon systems to include multiple Cross Functional Teams.			
FY 2024 Plans: Develop the TEMOD Application Program Sets (APS) associated with the TS-4549 Radio Test Sets, which will allow the TS-4549 to support additional Army radios.			
FY 2023 to FY 2024 Increase/Decrease Statement: Increase in FY 2024 funding for the development of the TEMOD APSs associated with the TS-4549 Radio Test Sets.			
Title: SBIR/STTR Transfer		-	0.147
FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638.			-
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638.			
Accomplishments/Planned Programs Subtotals		3.115	4.028
			6.767

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army							Date: March 2023				
Appropriation/Budget Activity 2040 / 5				R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development			Project (Number/Name) L65 / Test Equipment Development				

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

Line Item	FY 2022	FY 2023	FY 2024	FY 2024	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	Cost To	Total Cost
			Base	OCO	Total					Complete	
• G02510: Test Equipment Modernization (TEMOD)	24.130	32.734	32.623	-	32.623	49.949	53.839	53.871	53.725	0.000	300.871

Remarks
Funds in SSNs N10000 and N11000 for FY 2022 through FY 2028 have been realigned to Test Equipment Modernization, SSN G02510.

D. Acquisition Strategy

Projects focus on commercial and nondevelopmental item technologies. Department of Defense services provide programmatic, engineering expertise and capability for individual development projects; otherwise, commercial service contracts are used to obtain required capabilities. Equipment required for development projects is obtained from commercial suppliers. Candidate commercial equipment and nondevelopmental items are identified and evaluated through market research and government test and evaluation.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development						Project (Number/Name) L65 / Test Equipment Development			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	Various	Various : Various	-	-		0.147	Mar 2023	-		-		-	0.000	0.147	-
Subtotal			-	-		0.147		-		-		-	0.000	0.147	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CALSETS Software Environment and Calibration	Various	Various : Various	7.943	0.407	May 2022	0.327	Mar 2023	0.186	Mar 2024	-		0.186	Continuing	Continuing	-
Physical Instruments	Various	Various : Various	9.724	0.733	Feb 2022	0.533	Feb 2023	0.507	Feb 2024	-		0.507	Continuing	Continuing	-
Electrical Instruments	Various	Various : Various	11.104	0.414	Mar 2022	1.182	Mar 2023	0.865	Mar 2024	-		0.865	Continuing	Continuing	-
Test Equipment Modernization	Various	Various : Various	3.984	0.237	Feb 2022	0.187	Mar 2023	2.400	Mar 2024	-		2.400	Continuing	Continuing	-
Subtotal			32.755	1.791		2.229		3.958		-		3.958	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Engineering	C/FFP	Various : Various	3.935	0.137	Jan 2022	0.165	Feb 2023	0.168	Mar 2024	-		0.168	Continuing	Continuing	-
Subtotal			3.935	0.137		0.165		0.168		-		0.168	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
CALSETS Software Environment and Calibration	Various	Various : Various	2.147	0.271	Apr 2022	0.218	Mar 2023	0.125	Mar 2024	-		0.125	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023				
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development				Project (Number/Name) L65 / Test Equipment Development						
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Physical Instruments	Various	Various : Various	3.763	0.483	Feb 2022	0.356	Feb 2023	0.339	Feb 2024	-		0.339	Continuing	Continuing	-	
Electrical Instruments	Various	Various1600 : Various	2.871	0.275	Mar 2022	0.788	Mar 2023	0.577	Mar 2024	-		0.577	Continuing	Continuing	-	
Test Equipment Modernization	Various	Various : Various	2.888	0.158	Feb 2022	0.125	Mar 2023	1.600	Mar 2024	-		1.600	Continuing	Continuing	-	
Subtotal			11.669	1.187		1.487		2.641		-		2.641	Continuing	Continuing	N/A	
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals			48.359	3.115		4.028		6.767		-		6.767	Continuing	Continuing	N/A	
Remarks																

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

Date: March 2023

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2040 / 5

R-1 Program Element (Number/Name)

PE 0604746A / Automatic Test Equipment Development

Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Progress (%)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-31	Completed	J. Doe	150,000	148,500	100	Low	Exceeded budget by 1.5%
102/Beta	2023-02-01	2023-05-15	In Progress	A. Smith	220,000	180,000	82	Medium	Minor delays in procurement
103/Gamma	2023-03-10	2023-06-30	On Hold	M. Chen	90,000	10,000	11	High	Waiting for client approval
104/Delta	2023-04-01	2023-07-31	Planned	S. Kim	300,000	0	0	Low	Initial planning phase
105/Epsilon	2023-05-01	2023-08-31	On Hold	L. Garcia	180,000	0	0	Medium	Resource allocation pending
106/Zeta	2023-06-01	2023-09-30	Planned	K. Lee	250,000	0	0	Low	Scope definition in progress
107/Eta	2023-07-01	2023-10-31	Planned	H. Patel	120,000	0	0	Medium	Vendor selection underway
108/Theta	2023-08-01	2023-11-30	Planned	B. Singh	170,000	0	0	Low	Feasibility study complete
109/Iota	2023-09-01	2023-12-31	Planned	N. Wong	210,000	0	0	Medium	Initial requirements gathering
110/Kappa	2023-10-01	2024-01-31	Planned	D. Brown	160,000	0	0	Low	Conceptual design phase

L65 / Test Equipment Development

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023	
Appropriation/Budget Activity 2040 / 5		R-1 Program Element (Number/Name) PE 0604746A / Automatic Test Equipment Development		Project (Number/Name) L65 / Test Equipment Development

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AN/GSM-421(V2) User Testing	2	2007	4	2012
Physical Instruments	1	2016	4	2028
CALSETS Software Environment and Calibration	1	2016	4	2028
Electrical Instruments	1	2016	4	2028
Test Equipment Modernization	1	2016	4	2028

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army **Date:** March 2023

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev							
COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	12.182	8.189	8.802	-	8.802	8.621	8.500	9.044	9.155	0.000	64.493
C74: Devel Simulation Tech	-	0.911	1.022	1.031	-	1.031	1.041	1.042	1.054	1.065	0.000	7.166
C77: Army Geospatial Data Master Plan	-	5.521	0.568	1.137	-	1.137	0.879	0.749	1.209	1.235	0.000	11.298
C78: One Semi-Automated Forces	-	5.750	6.599	6.634	-	6.634	6.701	6.709	6.781	6.855	0.000	46.029

A. Mission Description and Budget Item Justification

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

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

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Army				Date: March 2023		
Appropriation/Budget Activity		R-1 Program Element (Number/Name)				
2040: Research, Development, Test & Evaluation, Army I BA 5: System Development & Demonstration (SDD)		PE 0604760A I Distributive Interactive Simulations (DIS) - Eng Dev				
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.						
B. Program Change Summary (\$ in Millions)		FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget		12.453	8.189	8.206	-	8.206
Current President's Budget		12.182	8.189	8.802	-	8.802
Total Adjustments		-0.271	0.000	0.596	-	0.596
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-0.271	-			
• SBIR/STTR Transfer		-	-			
• Adjustments to Budget Years		-	-	0.596	-	0.596
Congressional Add Details (\$ in Millions, and Includes General Reductions)						
Project: C77: Army Geospatial Data Master Plan						
Congressional Add: FY22 Congressional Add - Bathymetric Unmanned Littoral LiDar for Operational GEOINT (BULLDOG)						
Congressional Add Subtotals for Project: C77						
Congressional Add Totals for all Projects						
Change Summary Explanation						
Increased funding due to revised economic assumptions.						

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
C74: Devel Simulation Tech	-	0.911	1.022	1.031	-	1.031	1.041	1.042	1.054	1.065	0.000	7.166
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 2024 base funding in the amount of \$1.031 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 2022	FY 2023	FY 2024
Title: Program Management for the SIMCI Overarching Integrated Product Team (OIPT) Projects.	0.911	0.985	1.031
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 2023 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C74 / <i>Devel Simulation Tech</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>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.</p> <p>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 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.</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Minor increase in funding from FY2023 to FY2024 is due to economic assumptions.</p>			
<p>Title: SBIR/STTR Transfer</p> <p>FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638</p>		-	0.037
Accomplishments/Planned Programs Subtotals		0.911	1.022
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			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023
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
<p>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).</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev						Project (Number/Name) C74 / Devel Simulation Tech			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI : Orlando, FL	10.703	0.140	Jan 2022	0.140	Jan 2023	0.140	Jan 2024	-		0.140	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	PEO STRI : Orlando, FL	0.326	-		0.037		-		-		-	0.000	0.363	-
Subtotal			11.029	0.140		0.177		0.140		-		0.140	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SIMCI Program/OIPT Support	Various	Various : Various	8.534	0.746	Jan 2022	0.820	Jan 2023	0.866	Jan 2024	-		0.866	Continuing	Continuing	Continuing
Army Initialization Program and Technical Work Groups (TWG)	Various	Various : Various	0.766	0.025	Jan 2022	0.025	Jan 2023	0.025	Jan 2024	-		0.025	Continuing	Continuing	Continuing
Subtotal			9.300	0.771		0.845		0.891		-		0.891	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			20.329	0.911		1.022		1.031		-		1.031	Continuing	Continuing	N/A
Remarks															

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

Date: March 2023

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
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

Events	Start		End	
	Quarter	Year	Quarter	Year
Implementation of Initialization Products	1	2010	4	2028
Transition of simulation initialization capability	1	2010	4	2028
Data Model applications and reference implementations	1	2010	4	2028
C2 Adapter Web Services and Tools	1	2010	4	2028
Quarterly SIMCI OIPT Meeting	1	2010	4	2028
Annual Project Call	1	2010	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
C77: Army Geospatial Data Master Plan	-	5.521	0.568	1.137	-	1.137	0.879	0.749	1.209	1.235	0.000	11.298
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, Cross-Functional Team (CFT) initiatives, 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 115-11 - 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 2024 funding 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 2022	FY 2023	FY 2024
Title: Ground-Warfighter Geospatial Data Model (GGDM)	0.110	0.110	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 2023 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C77 / <i>Army Geospatial Data Master Plan</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>Initiate development of the next version of GGDM based upon revisions to the National System for Geospatial-Intelligence (NSG) Application Schema (NAS) as well as new requirements from the US Army, especially as result from HQDA EXORD 154-20 (Army 3D Geospatial Data Integration Strategy), USMC, and ABCANZ Allies. Provide GGDM training classes to Army and USMC personnel. Ensure major Army PORs are implementing the GGDM (I.E. DCGS-A and SECORE). Assess GGDM capability to support 3D to enable Army modernization.</p> <p>FY 2024 Plans: 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).</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Increase funds for initial integration of 3D data into Ground Warfighter Geospatial Data Model enabling interoperability from National to Tactical systems significantly enhancing soldier situational awareness.</p>			
<p>Title: Geospatial Data Standards</p> <p>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.</p> <p>FY 2023 Plans: Will continue collaboration with industry and other agencies to develop new geospatial data and services standards, DOD Profiles of these standards, and technology implementations of these standards. Focus on furthering development of standards to further releasable basemap tiles to enable 2D raster tiled maps, GeoVolumes API, and detailed assessment of vector tile maps and to develop modifications/updates elevation data formats and services. Maintain Geospatial Standards compliance matrix, Std-V1, in alignment with quarterly updated NSG standards and DoD Information Technology Standards and Profile Registry (DISR) cycle updates of GEOINT standards and coordinate results with Army CIO/G6 and ASA(ALT) Programs. Will continue to provide SME support on geospatial data and technology standards to Army PORs. Continue integration of multiple geospatial standards (both 2D and 3D) specifically in support of extending One World Terrain (OWT) capabilities into non-training-like applications, such as</p>		0.411	0.437
			0.807

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C77 / <i>Army Geospatial Data Master Plan</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
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 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 2023 to FY 2024 Increase/Decrease Statement: New geospatial standards development needed to support Mission Command and Army modernization enabling interoperability from National to Tactical systems significantly enhancing soldier situational awareness.			
Title: SBIR/STTR Transfer		-	0.021
FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638			
FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638			
Accomplishments/Planned Programs Subtotals		0.521	0.568
		FY 2022	FY 2023
Congressional Add: FY22 Congressional Add - Bathymetric Unmanned Littoral LiDar for Operational GEOINT (BULLDOG)		5.000	-
FY 2022 Accomplishments: Analysis and finalization of the optimal airborne bathymetric collection platform to support high altitude data collection to enable littoral operations. Identification of process to support real-time terrain collection, and creation of littoral 3 dimensional artificially enabled models. Engineering, airworthiness and accuracy validation. Engineering/production alternatives to optimize size, weight, power and bathymetric data acquisition/data processing.			

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army						Date: March 2023
Appropriation/Budget Activity			R-1 Program Element (Number/Name)		Project (Number/Name)	
2040 / 5			PE 0604760A / Distributive Interactive Simulations (DIS) - Eng Dev		C77 / Army Geospatial Data Master Plan	
					FY 2022	FY 2023
Strategy to transition current prototype into an operational capable deployable unit.						
Congressional Adds Subtotals					5.000	-

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).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>						Project (Number/Name) C77 / <i>Army Geospatial Data Master Plan</i>			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBIR/STTR Transfer	TBD	TBD : TBD	-	-		0.021		-		-		-	0.000	0.021	-
Subtotal			-	-		0.021		-		-		-	0.000	0.021	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Army Geospatial Model and Data Standards	Various	TBD : TBD	8.481	5.521	Nov 2021	0.547	Nov 2022	1.137	Nov 2023	-		1.137	0.000	15.686	Continuing
Subtotal			8.481	5.521		0.547		1.137		-		1.137	0.000	15.686	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			8.481	5.521		0.568		1.137		-		1.137	0.000	15.707	N/A
Remarks															

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PE 0604760A: *Distributive Interactive Simulations (DI...*
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Project (Number/Name)	Start Date	End Date	Status	Manager	Budget (USD)	Actual Cost (USD)	Variance (USD)	Progress (%)	Risk Level	Notes
101/Alpha	2023-01-15	2023-03-31	Completed	J. Doe	120,000	118,500	1,500	100	Low	Minor budget overruns in materials.
102/Beta	2023-02-01	2023-05-15	In Progress	A. Smith	250,000	230,000	20,000	75	Medium	Scope creep in Phase 2.
103/Gamma	2023-03-10	2023-06-30	On Hold	M. Chen	80,000	80,000	0	10	High	Waiting for client approval.
104/Delta	2023-04-01	2023-07-31	Planned	S. Kim	180,000	0	180,000	0	Low	Initial planning phase.
105/Epsilon	2023-05-01	2023-08-31	On Hold	L. Garcia	95,000	95,000	0	5	Medium	Resource allocation pending.
106/Zeta	2023-06-01	2023-09-30	Planned	K. Lee	110,000	0	110,000	0	Low	Market research in progress.
107/Eta	2023-07-01	2023-10-31	Planned	H. Patel	130,000	0	130,000	0	Medium	Vendor selection ongoing.
108/Theta	2023-08-01	2023-11-30	Planned	B. Wong	160,000	0	160,000	0	Low	Initial design phase.
109/Iota	2023-09-01	2023-12-31	Planned	N. Singh	140,000	0	140,000	0	Medium	Feasibility study complete.
110/Kappa	2023-10-01	2024-01-31	Planned	D. Brown	170,000	0	170,000	0	Low	Contract negotiations.

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Warfighter Geospatial Data Model	1	2010	4	2028
Geospatial Data Standards	1	2010	4	2028

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army										Date: March 2023		
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 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
C78: One Semi-Automated Forces	-	5.750	6.599	6.634	-	6.634	6.701	6.709	6.781	6.855	0.000	46.029
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 2024 base funding in the amount of \$6.634 million allows for continued development of the software product line prioritized and approved by the Training and Doctrine Command (TRADOC). 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 2022	FY 2023	FY 2024
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. FY 2023 Plans: Will continue the development of software capabilities based on OneSAF P3Is as prioritized and approved by TRADOC. 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 12.0. FY 2023 to FY 2024 Increase/Decrease Statement: Transitioning to software engineering activities.	4.451	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 2023 Plans:	1.010	1.050	1.050

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>Will provide for the conducting of software, test, integration and release for Version 11.0. Will provide support to the user community in conducting 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.</p> <p>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.</p>			
<p>Title: Government Program Management for the One Semi-Automated Forces (OneSAF) program.</p> <p>Description: Government Program Management for the One Semi-Automated Forces (OneSAF) program.</p> <p>FY 2023 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.</p> <p>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.</p>		0.289	0.300
<p>Title: SBIR/STTR Transfer</p> <p>FY 2023 Plans: Funding transferred in accordance with Title 15 USC §638</p> <p>FY 2023 to FY 2024 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC §638</p>		-	0.241
<p>Title: Software Engineering activities for the One Semi-Automated Forces Program</p> <p>Description: Continue development activities for the OneSAF program.</p> <p>FY 2024 Plans:</p>		-	5.284

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Army		Date: March 2023	
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2022	FY 2023
<p>Will continue the development of software capabilities as prioritized and approved by TRADOC. 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.</p> <p><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i> Increase from FY2023 to FY2024 funding is transitioning requirements from EMD phase contract activities to SW Engineering activities.</p>			
Accomplishments/Planned Programs Subtotals		5.750	6.599
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
<p>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.</p> <p>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.</p> <p>In FY 2024, the program will continue with yearly releases of the OneSAF Software versions containing performance enhancements resulting from the development and integration of TRADOC 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).</p> <p>The current contract ends in FY 2024 and a new contract will be awarded. The program anticipates a seamless transition with no gap in coverage and no negative impacts in the ability of OneSAF to meet user needs.</p>			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
Appropriation/Budget Activity 2040 / 5						R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>						Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>			
Management Services (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	PEO STRI, Orlando, FL : Various	29.512	0.289	Oct 2021	0.300	Oct 2022	0.300	Oct 2023	-		0.300	Continuing	Continuing	Continuing
SBIR/STTR Transfer	TBD	PEO STRI : Orlando, FL	0.460	-		0.241		-		-		-	0.000	0.701	-
Subtotal			29.972	0.289		0.541		0.300		-		0.300	Continuing	Continuing	N/A
Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	Riptide : Orlando, FL	19.439	4.026	Dec 2021	4.583	Dec 2022	4.859	Oct 2023	-		4.859	Continuing	Continuing	Continuing
Subtotal			19.439	4.026		4.583		4.859		-		4.859	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Domain Analysis	Various	Various : Various	6.664	0.125	Dec 2021	0.125	Dec 2022	0.125	Oct 2023	-		0.125	Continuing	Continuing	Continuing
Architecture Engr & Tech Spt	SS/FP	MITRE FFRDC : Aberdeen Proving Ground, MD	6.623	0.300	Dec 2021	0.300	Dec 2022	0.300	Oct 2023	-		0.300	Continuing	Continuing	Continuing
Subtotal			13.287	0.425		0.425		0.425		-		0.425	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OneSAF Integration, Evaluation and Test	Various	Various : Various	16.359	0.835	Dec 2021	0.875	Dec 2022	0.875	Oct 2023	-		0.875	Continuing	Continuing	Continuing
OneSAF Verification, Validation & Accreditation	Various	Various : Various	7.976	0.175	Dec 2021	0.175	Dec 2022	0.175	Oct 2023	-		0.175	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Army												Date: March 2023			
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				
Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			24.335	1.010		1.050		1.050		-		1.050	Continuing	Continuing	N/A
			Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			87.033	5.750		6.599		6.634		-		6.634	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Army										Date: March 2023																			
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									
Event Name	FY 2022				FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
P3I Requirements Development																													
P3I																													
OneSAF Version Release 11.0 (Concurrency Updates)	1 V11.0																												
OneSAF Version Release 12.0 (Concurrency Updates)					2 V12.0																								
OneSAF Version Release 13.0 (Concurrency Updates)									3 V13.0																				
OneSAF Version Release 14.0 (Concurrency Updates)													4 V14.0																
OneSAF Version Release 15.0 (Concurrency Updates)																	5 V15.0												
OneSAF Version Release 16.0 (Concurrency Updates)																					6 V16.0								
OneSAF Version Release 17.0 (Concurrency Updates)																									7 V17.0				
OneSAF Support																													
Life Cycle Software Support																													

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Army			Date: March 2023
Appropriation/Budget Activity 2040 / 5	R-1 Program Element (Number/Name) PE 0604760A / <i>Distributive Interactive Simulations (DIS) - Eng Dev</i>	Project (Number/Name) C78 / <i>One Semi-Automated Forces</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
P3I Requirements Development	1	2006	4	2028
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 13.0 (Concurrency Updates)	2	2024	2	2024
OneSAF Version Release 14.0 (Concurrency Updates)	1	2025	1	2025
OneSAF Version Release 15.0 (Concurrency Updates)	3	2026	3	2026
OneSAF Version Release 16.0 (Concurrency Updates)	3	2027	3	2027
OneSAF Version Release 17.0 (Concurrency Updates)	3	2028	3	2028
OneSAF Support	1	2006	4	2028